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Education Department

DERT
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RESEARCH & TRAINING

Reach to Teach
FOUNDATION

CM IMPACT
Meghalaya Learning Enhancement Programme

IMPACT

CHIEF MINISTER'S INITIATIVE TO MAXIMIZE PASS ACHIEVEMENT AND CLASSROOM TRIUMPH

CLASS 08

Achieving grade-appropriate learning levels

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Class 8

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Note for Teachers

Dear Teacher,

The **Meghalaya Class Readiness Programme MCRP**, implemented at the start of this academic year was a **bridge course** which focused on enhancing the learning outcomes and competencies of the previous classes to help achieve the current grade-level outcomes. We sincerely appreciate your dedication, hard work, and commitment to this initiative, ensuring every student moves forward in their learning journey. The MCRP plays a crucial role in ensuring students, particularly those struggling, acquire the necessary competencies to progress through their classes without difficulty.

On completion of the MCRP, in order to assist you in conducting regular classes effectively and to keep the momentum alive, chapter-wise activities will be shared with you throughout the academic year. This will help students attain grade-level learning through experiential, activity-based elements linked to learning outcomes and competencies, and will aid you in reinforcing concepts covered in each chapter. This approach will also encourage students to reflect on and apply what they learn.

While you will be teaching the subject as per your timetable and syllabus, it is suggested that you conduct the given activities along with the chapter you are teaching from the NCERT textbook.

The following are some important points that will help you understand the usage of the modules in a better manner:

- The modules provide **suggestive activities** you can undertake while teaching a chapter. These activities are aligned with the theme/concepts of the chapter and have experiential learning at their core. These are also aligned to specific learning outcomes and competencies, thus helping your students acquire certain skills.

- At the end of each chapter, a competency-based assessment is included to help you identify your students' learning levels and determine areas that may require additional revision. These assessment activities are **aligned with the formative assessments suggested in the Assessment Blueprint** (revised in February 2025).

- A learning level tracker (as given during MCRP) is provided. Please use this to monitor individual students' achievement of learning outcomes and competencies. This will give you a clear picture of how your students are doing and what areas they need extra support in.

If you have any queries, please contact our helpline number: **+91 9205666274.**

Wishing you an engaging and fruitful academic year ahead! Here's hoping your students become independent learners and your classroom interactions remain exciting, learning outcome-driven and without additional burden to you.

Meghalaya Learning Enhancement Programme

ENGLISH

UNIT : 1
Chapter : The Best Christmas Present in the World

Activity 1 The Scarf of Memories

35 mins

Instructions

- Divide the class into groups. Each group can be of 4-5 students.
- Print out the following poem and distribute it in groups. If you are unable to print it, you may write the passage on the board.
- Ask the students to read the story. You may explain the story if required.
- Ask the students to answer the questions below.

The Scarf of Memories

One summer, a young girl named Sharon visited her grandmother, who lived in a small, peaceful village. The village was surrounded by lush green hills, and the mornings were always wrapped in a gentle mist. On Sharon's birthday, her grandmother gave her a beautiful handwoven scarf, made from the wool of local sheep. The scarf was soft and warm, perfect for the cool weather, and Sharon cherished it deeply.

However, not everything was as perfect as it seemed. A few days after her birthday, Sharon began to notice something unusual. Her grandmother, who had always been sharp and lively, seemed to forget small things. She would misplace her glasses or forget the names of people she had known for many years. It was heartbreaking for Sharon to see her grandmother like this. The doctors later confirmed that her grandmother was beginning to lose her memory.

Despite the changes, there were still moments of sweetness. Sharon would sit by her grandmother, listening to her stories about the past, and holding the scarf close to her heart. The scarf became a symbol of her grandmother's love, even as her memory faded away. To help her grandmother hold onto something precious, Sharon decided to buy a small gift for her - a wooden carving of a bird, something that reminded them both of the peaceful time they spent in the hills.

When it was time for Sharon to return home, she felt a mix of emotions. The memories of her grandmother's love filled her heart with warmth, but the reality of her grandmother's memory loss left her feeling sad. Yet, she knew that no matter what the future held, the memories of that summer with her grandmother would stay with her forever, as a reminder of the love they had shared.

Choose the correct answers from the options given:

A. What was unusual about Sharon's grandmother during her visit?

a) She was always cheerful
b) She started forgetting small things
c) She started telling more stories than usual
d) She was more active than ever before

B. How did Sharon feel when she had to leave her grandmother?
   a) She felt angry and upset
   b) She felt a mix of emotions, with sadness and warmth
   c) She was happy to leave
   d) She felt completely indifferent

C. What did the scarf symbolise for Sharon?
   a) Her grandmother's wisdom
   b) Her grandmother's love
   c) The peace of the village
   d) The cold weather of the hills

Answer the following questions:

D. How did Sharon's grandmother's memory loss affect Sharon emotionally?

_____
_____

E. How do you think Sharon's grandmother felt when she gave her the scarf? Explain your thoughts.

_____
_____

F. How does the story show the importance of love and family, even in difficult times?

_____
_____
_____

G. If you were in Sharon's place, how would you cope with seeing a loved one experiencing memory loss?

_____
_____
_____

Activity 2 Past Tense and Past Perfect Tense

35 mins

Instructions

- Begin the class with a discussion on Past Tense and Past Perfect Tense.
- Share the concept of Past and Past Perfect Tense with the students. You can refer to the following examples for sharing the concept.

Simple Past Tense		Past Perfect Tense	
Definition:	Used to describe actions that started and finished in the past.	**Definition:**	Used to show that one action happened before another action in the past.
Structure:	Subject + Verb (past form) + Object	**Structure:**	Subject + had + Past Participle + Object
Examples:	She **walked** to school. They **ate** dinner at 8 PM.	**Examples:**	She **had finished** her homework before dinner. They **had left** when we arrived.

- Write the following sentences on the board. Ask the students to complete them using correct tense.

A. By the time we arrived, the movie _____ (already/start).
B. She _____ (finish) her homework before the rain started.
C. He _____ (not, hear) the doorbell because he was listening to music.
D. I _____ (go) to the market when I saw an old friend.
E. After she _____ (leave), I realised I had forgotten my book.
F. They _____ (arrive) at the station before the train left.
G. By the time we got to the party, everyone _____ (eat) dinner.
H. He _____ (not, see) that movie before last night.
I. We _____ (not, know) the answer to the question when the teacher asked.
J. She _____ (visit) her grandmother before going to the market.

Activity 3 Speaking and Diary Writing

35 mins

Instructions

- Discuss the importance of elders in the family.
- Divide the class in pairs and give them 10 minutes to discuss with each other how they respect elders in their family.
- Next, tell students that they would be writing a diary entry. Explain that a diary is like a trusted friend where we can write about our day, thoughts, and emotions freely.
- Share a format for diary writing as well as an example.
- Ask students to write a diary entry in their notebooks based on the format, based on a day when someone disrespected an elder in their family.

Format

Date – The day, month, and year of the entry.

Day – The day of the week (optional).

Salutation – Start with "Dear Diary" (or something personal).

Body – Describe the events of the day, feelings, experiences, or anything noteworthy. This part is usually written in a casual and reflective manner.

Conclusion – End with a final thought, emotion, or summary of the day.

Signature – You can end it with your name or initials.

Chapter : The Ant and the Cricket

Activity 1 The Wise Squirrel and the Lazy Rabbit

35 mins

Instructions

- Divide the class into groups. Each group can be of 4-5 students.
- Print out the following poem and distribute it in groups. If you are unable to print it, you may write the passage on the board.
- Ask the students to read the poem. You may explain the poem if required.
- Ask the students to answer the questions below.

The Wise Squirrel and the Lazy Rabbit

In a forest green and wide,
A wise squirrel did reside.
From dawn till dusk, she'd gather nuts,
Preparing for the winter's cuts.

The rabbit, young and full of cheer,
Laughed and played, with no fear.
"Why work so hard?" he said one day,
"When the sun is bright, let's play!"

The squirrel smiled but did not rest,
She knew the future's harshest test.
As winter's cold began to bite,
The rabbit found he had no light.

"Please, squirrel, help me, I'm in need,
I've no food, no home, no heed."
The squirrel, wise, looked with care,
"I worked while you played, unaware.

Now you must learn, as I have done,
Work while the bright days still run.
Prepare while seasons bloom and glow,
Or face the cold with none to show."

The rabbit, sad, but wiser now,
Worked hard, and made a solemn vow.
When winter came, he too was strong,
Prepared, as he should have all along.

Choose the correct answers from the options given:

A. What is the primary reason the rabbit seeks help from the squirrel?
   a) He is looking for a friend to play with
   b) He is cold, hungry, and unprepared for winter
   c) He wants to learn how to work harder
   d) He needs a new home

B. In the poem, what does the squirrel do to prepare for winter?
   a) Enjoys the sunshine
   b) Gathers food and builds a nest
   c) Sleeps through autumn
   d) Plays with other animals

C. What lesson does the squirrel teach the rabbit?
   a) To enjoy the present moment without worrying about the future
   b) To work hard and plan for the future
   c) To never trust anyone
   d) To play all day long

Answer the following questions:

D. The squirrel is portrayed as wise in the poem. How does her wisdom help her during the winter months?

_____
_____

E. Do you think the rabbit learned an important lesson from his experience? What could he have done differently during the previous seasons?

_____
_____

F. Why do you think the poet chose to compare the rabbit's carefree attitude to the squirrel's hard work? What message do you think the poet is trying to convey?

_____
_____

G. In your opinion, how important is it to plan for the future, as the squirrel does? Can you think of any situations where planning ahead might be beneficial?

_____
_____
_____

Activity 2 Adjectives

35 mins

Instructions

- Have a discussion with the students on the concept of Adjectives.
- Write some examples with corresponding nouns.
- Ask the students to give some examples of adjectives in sentences.
- Divide the class into groups of 4-5. Print out the following poem and distribute it in groups. If you are unable to print it, you may write the passage on the board.
- Ask a student to come forward and underline an adjective from the poem on the board (lush, wise, proud, fairest, magnificent, calm, steady, cold, harsh, gentle, wise). Give all students a chance to do the activity.
- After all the adjectives have been underlined, ask students to use the adjectives underlined on the board to make sentences of their own, in their notebooks.
- Ask them to share their answers with the whole class.

The Owl and the Peacock

In a lush forest, quiet and wide,
A wise owl perched with feathers of pride.
A proud peacock, with colours so bright,
Strutted around in the warm sunlight.

"Look at me, owl, I'm the fairest by far,
With my magnificent feathers, I shine like a star!"
The owl, calm and steady, watched him strut,
Then flew off in silence, without a single cut.

Winter came with cold and harsh winds,
The peacock shivered, his pride now dim.
"Please, wise owl, I've learned my mistake,
I was careless—help me for old times' sake."

The owl, gentle and wise, gave a nod,
"Prepare for the future, not just the now, like I have done,
For beauty fades, but wisdom will stay on."

Activity 3 Speaking and Story Writing

35 mins

Instructions

- Ask the students: "What happens if we only write the middle of a story? Does it make sense without a beginning or end?"
- Divide students into small groups. Give each group few pieces of paper and a story-starter.
  - "One day the dinosaur family was going for a walk."
  - "One stormy night, a mysterious box appeared outside my house…"
  - "As soon as I touched the glowing stone, something incredible happened…"
  - "The little robot woke up and realised it was lost in a human world…"
  - "Deep in the forest, a secret door appeared in front of us…"
- Guide the groups to:
  - Write the beginning (set the scene).
  - Pass their paper to another group to write the middle (main action).
  - Pass again to write the end (resolution).
- Ask the groups to read the completed stories aloud.
- Discuss which stories had clear beginnings, middles, and ends, and ask students what stories they liked and why.

UNIT: 1 Assessment

35 mins

Section A (Literature)

Choose the correct answer from the given options

1. What did the author find in the junk shop?
   a) A letter
   b) Christmas present
   c) A roll-top desk
   d) Sausage
2. Jim closed the letter by saying that -
   a) he felt that he and Connie will never meet again.
   b) he feels that the war will continue for a long time.
   c) he does not want to meet Connie
   d) he was sure that he and Connie will be together soon.
3. What is the present for Connie?
   a) The letter
   b) The mistaken identity of the visitor
   c) To gain power over his enemies
   d) To become a wise ruler

Answer the following questions

4. Who had written the letter, and to whom? When was the letter written?

   _____
   _____
   _____

5. Why was the letter written - what was the wonderful thing that had happened?

   _____
   _____
   _____

6. Why do Jim and Hans think that games or sports are good ways of resolving conflicts? What are your views on this?

   _____
   _____
   _____
   _____
   _____
   _____

7. Mention the various ways in which the British and German soldiers became friends and find things in common at Christmas?

_____
_____
_____
_____
_____

Section B (Grammar)

Underline the correct form of verb from the following sentences

1. She _____ (forgot / had forgotten) to call him before he _____ (arrived / had arrived) at her house.
2. By the time the match _____ (ended / had ended), the fans _____ (left / had left) the stadium.
3. I _____ (did not recognise / had not recognised) her because she _____ (changed / had changed) so much.
4. He _____ (packed / had packed) his bags before he _____ (went / had gone) to bed.
5. When the guests _____ (arrived / had arrived), she _____ (already prepared / had already prepared) the food.

Underline the adjectives in the sentences below

6. The gentle breeze carried the scent of fresh flowers across the field.
7. The old man walked slowly with his curious dog at his side.
8. The bright sun made the colourful flowers bloom in the garden.
9. She wore a beautiful dress that was elegant and stylish.
10. The noisy children played in the wide park all afternoon.

Section C (Writing)

Imagine that you have just returned from your local market. Write a diary entry based on the format learnt. You can write about the food, handicrafts, people, and the lively atmosphere. You can also write about the different types of traditional clothing and goods sold at the market.

_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____

UNIT: 1 Answer Key

Section A (Literature)

1. c)
2. d)
3. b)
4. The letter was written by a soldier named Jim, and was written to his wife, Connie. The letter was written during World War I, in December 1914.
5. Jim Macpherson wrote the letter to his wife, Connie, to tell her about the Christmas of 1914, when soldiers stopped fighting, exchanged gifts, and celebrated Christmas together.
6. Jim and Hans believe that games or sports are good ways of resolving conflicts because they offer a peaceful way to connect with others, build trust, and foster teamwork. For Jim and Hans, sports provided a way to break down barriers and find common ground, helping to replace violence with friendship.

   In my view, sports can indeed be a powerful tool for resolving conflicts. Through teamwork, people learn to communicate better, share goals, and respect each other's strengths and weaknesses.
7. The soldiers exchanged small gifts which helped to build a sense of friendship. They also sang Christmas carols, with both sides joining in, creating a shared musical experience. The most memorable moment was when they played a game of football together. The match gave them a break from the violence of war and allowed them to connect as fellow human beings rather than enemies. Through these simple acts, the soldiers realised they had much in common, such as the desire for peace, a love for music, and the spirit of Christmas.

Section B (Grammar)

1. She forgot to call him before he arrived at her house.
2. By the time the match ended, the fans had left the stadium.
3. I did not recognise her because she had changed so much.
4. He had packed his bags before he went to bed.
5. When the guests arrived, she had already prepared the food.
6. The gentle breeze carried the scent of fresh flowers across the field.
7. The old man walked slowly with his curious dog at his side.
8. The bright sun made the colourful flowers bloom in the garden.
9. She wore a beautiful dress that was elegant and stylish.
10. The noisy children played in the wide park all afternoon.

Section C (Writing)

Since creative writing tasks are subjective in nature, the answers will vary from student to student. Some aspects to consider while evaluating diary entry are:

- Does it follow the format of a diary (date, first-person narration, informal tone)?
- Is the content relevant to the given prompt or theme?
- Does the paragraph have a clear beginning, middle, and end?
- Are the sentences complete and grammatically correct?
- Does the paragraph avoid excessive repetition?
- Does the student use a range of vocabulary instead of repeating the same words?
- Are common words spelled correctly?
- Is proper punctuation used (capital letters, commas, periods, etc.)?
- Is the paragraph coherent?
- Is there a personal touch or unique perspective in the writing?
- Are common words spelled correctly?

Learning Level Tracker

Keep a record of unit assessment results in the tracker.

As you conduct assessments based on the activities suggested, put a tick mark as per the following:

Level 1: Not able to solve problems and having difficulty comprehending the problem

Level 2: Solves most of the problems with external support

Level 3: Solves problems independently

Name of the School:	**UDISE:**
Block:	**District:**
Name of the Teacher:	**Assessment Date:**

Class: 8		Subject: English		
Roll No.	Name of the Student	Unit: 1		
		Chapter:	1. The Best Christmas Present in the World	
			2. The Ant and the Cricket	
		Level 1	Level 2	Level 3

UNIT : 2

Chapter : The Tsunami

Activity 1 The Storm that United Us

35 mins

Instructions

- Divide the class into groups of 4 to 5 students.
- Distribute printouts of the following story in the groups. If you are unable to arrange printouts, you may write the story on the board.
- Ask the students to read and discuss the story in groups.

The Storm That United Us

In the village of Thangkhiew, nestled among rolling hills and lush forests, life was peaceful until a fierce monsoon storm struck. The rain poured relentlessly for days, and on the fourth day, a massive landslide blocked the only path to the village, trapping the villagers and destroying many homes.

Among the villagers was 13-year-old Lynnia, known for her quick thinking. When the landslide struck, she rushed to help. She found Auntie Tynsong, an elderly woman, trapped under debris. With the help of her friends, Lynnia freed her, and they followed Boro, a dog who had found a safer path to higher ground.

As the rain intensified, the villagers huddled together in the community hall, uncertain of what to do. Mrs. Rynjah, Lynnia's mother, calmed the crowd. "We must help each other," she said, inspiring the villagers to stay strong.

The next morning, a second landslide threatened the village. Lynnia and the young villagers worked to clear the debris. During this time, Auntie Nongsiej noticed the village's goats moving in an unusual pattern. The goats seemed to instinctively avoid the dangerous areas where the landslide had struck. They followed paths through the hills that were still safe, and the villagers realised the animals had found a route to higher ground that wasn't blocked. Thanks to the goats' intelligence, they guided the villagers to a safer place.

Meanwhile, Ziki, a donkey, stood by the clear paths, offering support and helping carry supplies. The animals' cleverness and bravery, from Boro the dog to Ziki the donkey and the goats, played a crucial role in keeping the villagers safe.

By afternoon, the villagers cleared a path and sent word to a neighbouring village for help. Rescue teams soon arrived with supplies. The villagers of Thangkhiew, supported by their animals' bravery, rebuilt their homes and lives, united in the strength of their community.

In the end, the storm showed that when people and animals work together with courage, no challenge is too great to overcome.

- Then, have each group role-play the scene from the story describing the aftermath of the storm.
  - Each student should take on the role of a villager, animal, or rescue team member. They should discuss how they contributed to rebuilding the village. They should include conversations where characters (both human and animal) share their experience of working together.
- After the role-play in groups, have a brief reflection session with the class where students discuss how teamwork, of both humans and animals, made recovery possible.

Activity 2 Active and Passive Voice

35 mins

Instructions

- Begin the class by briefly explaining the difference between Active and Passive Voice:
  - *Active Voice*: The subject performs the action (e.g., The cat chased the mouse).
  - *Passive Voice*: The subject receives the action (e.g., The mouse was chased by the cat).
- Provide a few simple examples on the board and demonstrate the conversion process.
- Divide the class into small groups (3-4 students per group).
- Place a set of active sentences (on slips of paper) at your desk.
  - *Examples*:

    She writes a letter.

    The chef cooked a delicious meal.

    The players won the match.
- Ask one student from each group to come to your desk and pick up a sentence. The student should take the slip back to their group and the group should work together to convert the active sentence into passive voice. For example – "She writes a letter" becomes "A letter is written by her."
- Once done, another group member comes forward to take another sentence slip.
- Review some of the sentences with the whole class to ensure understanding.
- You can repeat this activity for conversion of sentences from passive to active voice as well.

Activity 3 Speaking and Paragraph Writing

35 mins

Instructions

- Ask students what they understand by "floods". You can then note down the responses by writing them on the board.
- Next, you can add to the students' responses by explaining to the class what a flood is. You can refer to the notes below.

Teacher's Notes

A flood happens when too much water covers the land, usually because of heavy rainfall, river overflow, or melting snow.
Floods are common in areas with poor drainage systems or steep slopes, which makes these places more vulnerable during the monsoon season.

- Ask students to imagine what they would do if there was a flood in their village or town. Ask students to write a paragraph based on their imagination.

- Provide them clues for the paragraph like the following:
  - Move to higher ground
  - Avoid floodwater
  - Listen to warnings on radio, TV, mobile
  - Go to a safe and strong place like a building
  - Prepare an emergency kit with food, water, flashlight, medicines
  - Stay calm and avoid panic
  - Help others if possible

UNIT : 2

Chapter : Geography Lesson

Activity 1 Cities and Villages

35 mins

Instructions

- Print out the following poem and distribute it to students. If you are unable to print it, you may write the poem on the board.
- Ask the students to read the poem. You may explain the poem if required.
- Ask the students to answer the questions below.

Cities and Villages

Cities are bustling, full of life,
With busy streets and endless strife.
Skyscrapers rise, so tall and grand,
While cars and buses crowd the land.

In villages, the air is still,
The fields are green, and time is chill.
The sound of birds and rivers flow,
And life moves at a gentle slow.

In cities, lights shine bright at night,
With neon signs and dazzling light.
The markets hum with voices loud,
As people gather in the crowd.

But in the village, stars appear,
And moonlight whispers calm and clear.
The fields are ploughed, the cattle graze,
And children run through sunlit days.

Cities are busy, always on the go,
With shops and people in constant flow.
Villages are peaceful, where nature reigns,
With open skies and simple plains.

Both have their charm, their own delight,
One's full of speed, the other's quiet light.
But whether city or village, you'll always see,
A different rhythm, a different key.

A. Match the words from Column A (words from the poem) with correct meanings from Column B.

Column A (Words from the Poem)	Column B (Meaning)
a. Bustling	i. To feed on grass (usually for animals)
b. Strife	ii. Tall buildings, often in cities
c. Skyscrapers	iii. Soft sounds, quiet speech
d. Chill	iv. Excitement or activity
e. Graze	v. Peace or calm, free from disturbance
f. Neon	vi. Lighted by brightly coloured signs, often electric
g. Whispers	vii. Enjoyment or happiness
h. Delight	viii. Disagreement or conflict

B. Based on poem, describe villages in 3-4 sentences.

_____
_____
_____
_____

C. Based on the poem, describe cities in 3-4 sentences.

_____
_____
_____
_____

D. What does the line "both have their charm, their own delight" tell you about the poet's view of cities and villages? Do you agree with that view or disagree, and why?

_____
_____
_____
_____
_____
_____
_____

Activity 2 Tenses

35 mins

Instructions

- Have a discussion with students on tenses related to time.
- Write some sentences on the board and ask them to identify the tenses.
- Write some sentences with Present Tense and show them how to rewrite them by changing the tenses.

Examples

Present Tense	Past Tense	Future Tense
My father cooks for me.	My father cooked for me.	My father will cook for me.
She comes to school by bus.	She came to school by bus.	She will come to school by bus.

- Divide the class into two or more teams. Each team will take turns contributing to a story. If you have a large class, you can break it into smaller groups to make it more manageable.
- The first student will start the story in the present tense (e.g., "I wake up early every morning."). The next student from the other team must continue the story in the past tense (e.g., "Yesterday, I woke up late."). The following student from a different team must continue the story in the future tense (e.g., "Tomorrow, I will wake up at 7 a.m.").
- The students continue the story, alternating between tenses with each new sentence.
- After each round, check the tense used and make sure the students follow the correct form of the verb for the chosen tense. If a student gets confused or uses the wrong tense, kindly guide them and ask them to correct it.
- If you want to add an additional challenge, you can give the students a theme (e.g., "A day at the beach," "My dream vacation," or "A mysterious adventure") that they must follow throughout the story.
- Set a timer for each student (e.g., 30 seconds) to think of their sentence and write it or say it aloud. This keeps the game fast paced and exciting.
- As students become more comfortable with the game, you may add more tenses, like present perfect ("I have run a marathon before") or past perfect ("I had already run five miles when I heard the announcement").

Teacher's Notes

Examples of a Tense Story Relay

Student 1 (Present Tense):

"I wake up early every morning and go for a run."

Student 2 (Past Tense):

"Yesterday, I forgot to set my alarm and woke up late."

Student 3 (Future Tense):

"Tomorrow, I will try to wake up earlier to avoid being late."

Student 4 (Present Tense):
"I am planning to go for a run in the park after breakfast."
Student 5 (Past Tense):
"Last week, I ran five miles for the first time."
Student 6 (Future Tense):
"Next year, I will run a marathon in London!"

Activity 3 Speaking and Paragraph Writing

35 mins

Instructions

- Have a discussion with students on the topic of "Conservation of Nature".
- Write the following keywords on the board in connection with the topic and ask students what each word means. You can help with word meanings for added clarity.

Key Words

Environment
Biodiversity
Pollution
Climate change
Sustainability
Wildlife
Preservation

- Next, have a discussion on how the students can write a paragraph on the topic - Conservation of Nature. Write the paragraph structure on the board and encourage them to follow the same as they write their paragraph. Students should also include the key words in their paragraphs.

Paragraph Structure

- **Beginning:** Introduce the importance of nature conservation.
- **Middle:** Explain the threats to nature, such as pollution and climate change, and how they affect biodiversity and wildlife.
- End: Discuss the steps that can be taken to preserve nature and ensure a sustainable future

Write a paragraph on the topic of "Conservation of Nature".

_____
_____
_____
_____
_____
_____
_____
_____

UNIT: 2 Assessment

35 mins

Section A (Literature)

Choose the correct answer from the given options:

1. Which of these is a characteristic of a tsunami?
   a) It is a single large wave.
   b) It can occur with little or no warning.
   c) It only affects coastal areas in the Pacific Ocean.
   d) It is caused by strong winds.
2. How does the chapter suggest people can protect themselves from a tsunami?
   a) By moving to higher ground immediately.
   b) By staying indoors during a tsunami.
   c) By building stronger houses.
   d) By waiting for help from local authorities.
3. In the poem, what is the effect of seeing the cities and countries from a distant, broader perspective?
   a) It makes the conflicts between countries seem larger.
   b) It signifies the smallness of human-made divisions compared to the vastness of the Earth.
   c) It makes cities appear more divided and isolated.
   d) It makes human history appear more significant.
4. In the poem, what does the word "hate" symbolise?
   a) The divisions created by human conflict and hostility.
   b) The emotional distance between people in different regions of the world.
   c) The destructive impact of conflicts between nations on the environment.
   d) The strong dislike of unfamiliar geographical locations.

Answer the following questions:

5. What did Meghna and Almas teach us about the human response to natural disasters?

_____
_____
_____
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6. Reflecting on the chapter "The Tsunami," how do you think natural disasters like tsunamis affect both human lives and the environment? Discuss the emotional, physical, and social consequences on individuals, communities, and environment.

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7. How does the poem make you reflect on the divisions in the world?

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Section B (Grammar)

In the following sentences, change the voice from active to passive and from passive to active.

1. She plays the piano every day.

   _____

2. The cake was baked by my mother yesterday.

   _____

3. They will complete the project by next week.

   _____

4. The car was washed by the children on Saturday.

   _____

5. He reads books in the library.

   _____

Rewrite the following sentences following the instructions.

6. She writes a letter every week.
   Rewrite in Past Tense: _____
7. They watched a movie yesterday.
   Rewrite in Present Tense:_____
8. I will help you with the assignment.
   Rewrite in Past Tense: _____

9. We play football every Sunday.
   Rewrite in Future Tense:_____
10. She sang a beautiful song at the concert yesterday.
    Rewrite in Future Tense:_____

Section C (Writing)

Write a paragraph on the topic "The Power of Friendship in Creating a Better World". You can use the following points as clues:

Support and Encouragement: Friendship provides emotional support, helping individuals navigate difficult times.

Fostering Understanding and Tolerance: True friends understand each other's differences and help bridge cultural or social divides.

Promoting Acts of Kindness: Friends encourage each other to perform acts of kindness and make the world a better place.

Conflict Resolution: Friendships teach conflict resolution, helping people find peaceful solutions to disagreements.

Creating Stronger Communities: Friendships strengthen social bonds, leading to more cohesive and harmonious communities.

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UNIT: 2 Answer Key

Section A (Literature)

1 b)
2. a)
3. b)
4. a)
5. Meghna and Almas teach us about the strength of the human spirit in the face of adversity. Both girls showed incredible courage despite the trauma and loss they faced due to the tsunami. They also highlight the importance of community support, as people often come together to help one another recover in the aftermath of a disaster. Their stories emphasise how individuals, even children, can rise above difficult circumstances, find strength, and contribute to rebuilding their lives and communities.
6. Disasters like tsunamis have severe emotional, physical, social, and environmental consequences. Emotionally, survivors often face grief, and loss, with many struggling with conditions like depression or trauma. Physically, the destruction of buildings, roads, and infrastructure leads to the loss of life and injuries. The spread of diseases and health risks due to unsanitary conditions make recovery harder, and rebuilding takes significant time and effort. Socially, families are separated, and people are displaced from their homes. The destruction of schools, hospitals, and workplaces hampers recovery and makes it difficult for people to get back to normal life. Environmentally, coastal areas are often destroyed, displacing animals and destroying habitats. Water contamination and the loss of biodiversity have long-lasting effects on the environment. Overall, the consequences of such disasters are widespread, affecting every part of life, and recovery requires both local and global efforts.
7. The poem encourages reflection on the artificial nature of the divisions and borders in the world. By depicting the Earth from an aerial view, the poet shows that the borders drawn by humans are not visible or significant from a broader perspective. This makes us question why such boundaries exist and how they often lead to conflict and division. The poem suggests that, in the grand scale of the planet and the universe, these divisions seem meaningless, urging us to see beyond national or cultural borders and foster unity and peace.

Section B (Grammar)

1. The piano is played by her every day.
2. My mother baked the cake yesterday.
3. The project will be completed by them by next week.
4. The children washed the car on Saturday.
5. Books are read by him in the library.
6. She wrote a letter every week.
7. They watch a movie every day.
8. I helped you with the assignment.
9. We will play football every Sunday.
10. She will sing a beautiful song at the concert.

Section C (Writing)

Since creative writing tasks are subjective in nature, the answers will vary from student to student. Some aspects to consider while evaluating paragraph writing are:

- Is the content relevant to the given prompt or theme?
- Does the paragraph have a clear beginning, middle, and end?
- Are the sentences complete and grammatically correct?
- Does the paragraph avoid excessive repetition?
- Does the student use a range of vocabulary instead of repeating the same words?
- Are common words spelled correctly?
- Is proper punctuation used (capital letters, commas, periods, etc.)?
- Is the paragraph coherent?

Learning Level Tracker

Keep a record of unit assessment results in the tracker.

As you conduct assessments based on the activities suggested, put a tick mark as per the following:

Level 1: Not able to solve problems and having difficulty comprehending the problem

Level 2: Solves most of the problems with external support

Level 3: Solves problems independently

Name of the School:	**UDISE:**
Block:	**District:**
Name of the Teacher:	**Assessment Date:**

Class: 8		Subject: English		
Roll No.	Name of the Student	Unit: 2		
		Chapter:	1. The Tsunami	
			2. Geography Lesson	
		Level 1	Level 2	Level 3

UNIT : 3

Chapter : Glimpses of the Past

Activity 1 Indian History from 1757 to 1857: Key Players

35 mins

Instructions

- Divide the class into 6 groups.
- Distribute printouts of the following passage in the groups. If you are unable to arrange printouts, you may write the passage on the board.
- Ask the students to read and discuss the passage in groups.

Indian History from 1757 to 1857: Key Players

The period between 1757 and 1857 was one of dramatic change for India. During these 100 years, India experienced the rise of British power, the decline of local kingdoms, and the beginning of resistance against colonial rule. Here are some of the key players who shaped the events of this period:

1. Robert Clive (1725–1774)

Robert Clive was a British officer who played a crucial role in the expansion of the British East India Company's power in India. The most significant event under his leadership was the Battle of Plassey in 1757, where he defeated the Nawab of Bengal, Siraj-ud-Daula. This victory established British dominance in Bengal and marked the beginning of British rule in India.

Key Contributions:

**Led the British to victory in the Battle of Plassey.*

**Helped secure British control over Bengal, which became the base for British expansion in India.*

2. Siraj-ud-Daula (1733–1757)

Siraj-ud-Daula was the last independent Nawab of Bengal, who opposed the growing power of the British East India Company. His defeat at the Battle of Plassey marked the end of his reign and the beginning of British dominance in Bengal.

Key Contributions:

**Defended Bengal from British interference.*

**Fought the British in the Battle of Plassey, which ultimately led to his defeat.*

3. Raja Ram Mohan Roy (1772–1833)

Raja Ram Mohan Roy was a reformer who played an essential role in the social and cultural changes of India during British rule. He was a key figure in the early movement to modernise Indian society by challenging harmful customs like Sati (the practice of widows self-immolating on their husband's funeral pyre).

Key Contributions:

**Founded the Brahmo Samaj, which promoted social reform and religious tolerance.*

**Campaigned for the abolition of Sati and worked towards modernising education in India.*

4. Bahadur Shah Zafar (1775–1862)

Bahadur Shah Zafar was the last Mughal emperor of India. Although his reign was mostly symbolic due to the British control over India, he became an important figure during the Sepoy Mutiny of 1857. He was declared the leader of the revolt against the British and played a key role in inspiring Indians to resist British rule.

Key Contributions:

**Led the First War of Indian Independence (1857) against British rule.*

**Was captured by the British after the mutiny was crushed, marking the end of the Mughal dynasty.*

5. Mangal Pandey (1827–1857)

Mangal Pandey is considered a hero and martyr in India for his role in the Sepoy Mutiny. He was an Indian soldier in the British East India Company's army who rebelled against the British after he was asked to use rifle cartridges that were rumoured to be greased with cow and pig fat, offending both Hindu and Muslim soldiers. His actions sparked the rebellion that spread across India.

Key Contributions:

**Played a key role in the early stages of the Sepoy Mutiny by attacking British officers.*

**His revolt marked the beginning of widespread resistance against British rule.*

6. The British East India Company

The British East India Company was a powerful corporation that controlled much of India before the British government took over in 1858. It was responsible for many of the policies and decisions that led to British dominance in India. The company's officials often exploited local resources, which caused great suffering for Indians, especially farmers.

Key Contributions:

**Controlled vast areas of India, including Bengal, after the Battle of Plassey.*

**Played a major role in shaping the British Empire's policies in India.*

- Then assign each group a key player from the passage.
- Ask one group member to come forward, tell them their assigned key player.
- Tell the group member to sit in the "hot seat," where they become one of the key players in the story (Robert Clive, Siraj-ud-Daula, Raja Ram Mohan Roy, Bahadur Shah Zafar, Mangal Pandey, The British East India Company).
- The other students from their group can ask them yes/no questions about their actions, motivations, and impact on Indian history. For example, did you play a key role in the early stages of the Sepoy Mutiny?
- The group member can answer in yes or no only. The other members must guess the key player using the information they gathered in the passage.
- After the activity, have a discussion with the class on the main points in the passage.

Activity 2 Direct and Indirect Speech

35 mins

Instructions

- Have a discussion with the students on direct and indirect speech.
- Discuss about the differences with examples.
- Discuss the rules for transforming the sentences from Direct to Indirect Speech.
- Write some examples on board and help them to transform the sentences.
- Divide the class into groups of 5-6 students.
- Write on the board a few direct speech quotes as below on social issues.
  - "Sati is a social evil, and we must work to abolish it." – *Raja Ram Mohan Roy*
  - "It is our duty to educate the masses and remove ignorance." – *Raja Ram Mohan Roy*
  - "We cannot ignore the welfare of women in society." – *Mahatma Jyotirao Phule*
- Ask each group to create their own quotes in direct speech on social issues they care about today (e.g., gender equality, education for all). Then, have other groups convert them into indirect speech.
  - For example - group 1 can create quotes, and group 2 converts them into indirect speech. Then group 2's quotes get converted by group 3, and so on.
- The combined quotes can be written on the board. This activity will also bring out the creativity and interest of students regarding social issues.

Teacher's Notes

- *No Quotation Marks* - Remove quotation marks and adjust the sentence structure.
- *Change in Pronouns* - Pronouns are adjusted to match the perspective of the reporting speaker. Example: Direct: She said, "I am happy." Indirect: She said that she was happy.
- *Change in Tenses* - If the reporting verb is in the past tense, the tense in the quoted speech usually shifts to a past form.
  - Present Simple → Past Simple
  - Present Continuous → Past Continuous
  - Present Perfect → Past Perfect

  Example: Direct: He said, "I am eating." Indirect: He said that he was eating.
- *Time and Place Words* - words like "now," "today," "here," etc., change to reflect the context of the reporting.

  Examples: "Now" → "then", "Today" → "that day", "Here" → "there"
- *No Tense Change Exceptions* - If the reporting verb is in the present or future tense, the tense of the quoted speech doesn't change. Example:

  Direct: She says, "I like coffee." Indirect: She says that she likes coffee.
- *Reporting Questions* - For yes/no questions, use "if" or "whether." For WH-questions, the question word is retained.

  Example:

  Direct: He asked, "Where are you going?"

  Indirect: He asked where I was going.
- *Imperatives and Requests* - replace the imperative with "to" + verb. Example: Direct: She said, "Close the door."

  Indirect: She told me to close the door.

Activity 3 Speaking and Story Writing

35 mins

Instructions

- Divide the class into groups of 5-6 students.
- Provide printouts of the following dialogues to the groups or write them on the board.
- Then ask the groups to discuss and write a story based on the dialogues. Mention that they should include characters and their names in the story. They should also provide a title for the story.
- After group work, each group should read out their story to the class.

Create a story based on the following dialogues:

On the Battlefield - "Listen up, everyone! The enemy is closing in. We must hold this position, no matter the cost. This is our land, and we will defend it with our lives!"

The Battle Intensifies - "Steady, men! Steady! We fight not for glory, but for what is right. For honour! Now, take your positions!"

After the Battle - "We did it. We held them off. It wasn't easy, but each one of you displayed extraordinary courage today."

The Reflection - "Remember, true bravery is never shown in the absence of fear, but in the decision to fight despite it. You are all brave in your own way. Never forget that."

UNIT: 3 Assessment

35 mins

Section A (Literature)

Choose the correct answer from the given options-

1. Which of the following was the biggest reason for the British East India Company to become powerful in 18th century India?
   a) The support from the Indian masses
   b) The establishment of British educational institutions
   c) Rivalry among Indian princes and states
   d) British economic superiority over India
2. What was one of the effects of British rule on India's economy during the 18th and 19th centuries?
   a) Indian industries flourished while the British struggled economically
   b) British industries grew, but Indian industries were unaffected
   c) Indian economy grew stronger under British rule
   d) The British prospered through the loot from the Company, while Indian industries began to decline
3. Raja Ram Mohan Roy was attracted by which of the following during his lifetime?
   a) Traditional Indian arts and literature
   b) Science and modern knowledge
   c) Religious rituals and customs
   d) Ancient Indian architecture
4. Who was the emperor of India during the Revolt of 1857?
   a) Maharaja Ranjit Singh
   b) Bahadur Shah Zafar
   c) Lord Dalhousie
   d) Lord Curzon

Answer the following questions:

5. Which ideas of religious leaders were made fun of by the British?

   _____
   _____
   _____
   _____

6. What changes were seen by introduction of English?

   _____
   _____
   _____

7. What were the main reasons that allowed the British East India Company to gain power over India in the 18th century?

_____
_____
_____
_____
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_____
_____
_____
_____
_____

Section B (Grammar)

In the following sentences, change from Direct Speech to Indirect Speech, and vice versa.

1. "I am going to the market," said John.

_____

2. "Where did you put my book?" she asked.

_____

3. The teacher said, "Please complete your homework by tomorrow."

_____

4. "I have finished my project," said Francis.

_____

5. "Can you help me with this problem?" asked Mary.

_____

6. He asked if I had seen his keys.

_____

7. She told me that she would come to the party later.

_____

8. "I will call you after dinner," said mother.

_____

9. "Are you coming to the cinema with us?" asked Ridalin.

_____

10. The coach informed the players that the match would be postponed.

_____

Section C (Writing)

Read the following dialogues and write a story based on them. Include what you think might have happened before, and what might happen later. How will Samuel and Linda find their way back home?

Samuel: "Wait, Linda, I think we've gone off the path. This doesn't look familiar."
Linda: "Oh no, you're right. I thought we were following Uncle Robert, but now I'm not sure. What do we do?"
Samuel: "Should we shout for help? Or is it better to wait for him?"

UNIT: 3 Answer Key

Section A (Literature)

1. c)
2. d)
3. b)
4. b)
5. The religious leaders were preaching ideas like untouchability and child marriage. They also said that anyone who crossed the seas would lose their religion. Women, according to them were the cause of all the problems in the world.
6. Introduction of English led to presence of clerks who got small jobs under the British. It also led to many people becoming learned and intelligent.
7. Several key factors helped the British East India Company establish and expand its power in India during the 18th century. The internal conflicts and rivalries between Indian rulers greatly contributed to the British gaining power. While Indian rulers were often fighting amongst themselves, the British East India Company exploited these divisions. The British East India Company prospered economically by taking control of India's trade and resources. The wealth generated from this control helped the British strengthen their military and political power. The decline of Indian industries under British policies also enabled the Company to benefit immensely from India’s resources. The British used diplomatic tactics to secure alliances with some Indian rulers, while simultaneously working to undermine others.

Section B (Grammar)

1. John said that he was going to the market.
2. She asked where I had put her book.
3. The teacher asked us to complete our homework by the next day.
4. Francis said that he had finished his project.
5. Mary asked if I could help her with the problem.
6. He said, "Did you see my keys?"
7. She said, "I will come to the party later."
8. Mother said that she would call me after dinner.
9. Ridalin asked if I was coming to the cinema with them.
10. The coach said, "The match will be postponed."

Section C (Writing)

Since creative writing tasks are subjective in nature, the answers will vary from student to student. Some aspects to consider while evaluating story writing are:

- The plot is the sequence of events that make up the story. It includes introduction, rising action, climax, falling action, and conclusion.
- Characters are the people or beings that drive the story forward.
- The setting is where and when the story takes place.
- The conflict is the central problem or challenge the characters face.
- The theme is the central idea or message the story conveys.
- The point of view is the perspective from which the story is told.
- Dialogue is the conversation between characters.
- Style and Language - the way the story is written affects its tone and impact.
- Pacing refers to how quickly or slowly the events unfold in the story.
- Often, stories have a deeper moral or lesson for the reader.

Learning Level Tracker

Keep a record of unit assessment results in the tracker.

As you conduct assessments based on the activities suggested, put a tick mark as per the following:

Level 1: Not able to solve problems and having difficulty comprehending the problem

Level 2: Solves most of the problems with external support

Level 3: Solves problems independently

Name of the School:	**UDISE:**
Block:	**District:**
Name of the Teacher:	**Assessment Date:**

Class: 8		Subject: English		
Roll No.	Name of the Student	Unit: 2		
		Chapter: Glimpses of the Past		
		Level 1	Level 2	Level 3

UNIT : 4

Chapter : Bepin Choudhury's Lapse of Memory

Activity 1 The Forgotten Picnic

35 mins

Instructions

- Divide the class into groups of 4 to 5 students.
- Distribute printouts of the following story in the groups. If you are unable to arrange printouts, you may write the story on the board.
- Ask the students to read and discuss the story in groups.

The Forgotten Picnic

Lina Williams was a bright and independent young woman who lived in a town in Meghalaya. She worked as an assistant editor at a local magazine. One rainy afternoon, while walking home from the office, she bumped into a woman named Ruth Thomas, who claimed to be an old school friend. Ruth said they had studied together at St. Mary's School in Shillong and spent a lot of time together. She mentioned a picnic trip to Cherrapunji, which Lina couldn't recall at all.

"Don't you remember, Lina?" Ruth asked. "We got caught in the rain on our trip to Cherrapunji. You were terrified, but we had so much fun." Lina's mind went blank. She couldn't recall the trip or Ruth. She tried to smile and politely explained that she might have forgotten, but Ruth's insistence made her uneasy. For the next few days, Lina found herself thinking about the encounter. Could it be that she had forgotten something so significant?

A few days later, Lina received an unexpected letter at her office. It was from Ruth Thomas, written in a neat, flowing script. The letter spoke of the Cherrapunji picnic again and how much fun they had, especially during the rain. Ruth wrote about how Lina had been too shy to dance during the picnic, but how she had finally joined in and laughed with everyone. The letter mentioned little details that seemed familiar, but Lina still couldn't remember the event. She became convinced that she must have suffered some kind of memory lapse. The idea of forgetting such an important event troubled her deeply, and she couldn't focus on anything else.

Determined to get to the bottom of it, Lina decided to visit her old school. She met Miss Margaret, her old schoolteacher, and asked her about the picnic. To her surprise, Miss Margaret smiled and said, "Ah, the picnic to Cherrapunji! That was in Ruth's imagination, not reality. We never went on such a trip."

Confused, Lina asked for clarification. Miss Margaret explained, "Ruth had been upset that you had forgotten her after school. She created this story, wrote you the letter, and pretended to be an old friend. She wanted to make you feel like you had missed something important."

It turned out that Ruth was not a real friend, but someone who had once been in Lina's class. The whole incident was a carefully planned prank to make Lina question her memory.

Lina was initially embarrassed, but as she reflected on the situation, she realised something important. She had always prided herself on her sharp memory, and this had made her self-assured and somewhat unaware of how she might have been treating others. Ruth's prank forced Lina to recognise that having a perfect memory did not make her superior, and that relationships and connections were far more important than remembering every single detail of her life. She learned to value people and experiences over her own rigid belief in perfect recall, and from then on, Lina became more humble and considerate of others' feelings.

- In groups, students should write answers to the following questions.
  - What was Miss Margaret's role in clearing the confusion about the picnic?
  - What lesson did Lina learn at the end of the story?
  - Do you think it is ever okay to play a prank on someone to teach them a lesson? Why or why not?
  - Imagine you are continuing the story. What happens to Lina after the prank? Does she meet Ruth again? Does she take any action based on what she learned? Write a few sentences imagining how the story might continue.
- Have the groups share their answers with the class to discuss any points missed out.

Activity 2 Idioms

35 mins

Instructions

- Define idioms for students and explain rules for idioms. You may refer to the notes below.

Teacher's Notes

Definition of idioms: An idiom is a phrase or expression in which the meaning is not literal but figurative, often specific to a particular language or culture. The individual words in the idiom usually do not reflect the overall meaning of the phrase.

Rules for using idioms:

- *Fixed phrases:* Idioms are fixed expressions. The words in an idiom cannot be changed or replaced. Example: You can't say "cost an arm and a foot" — it must be "cost an arm and a leg."
- *Meaning is not literal:* The meaning of the idiom cannot be understood by looking at the individual meanings of the words. Example: "Break the ice" doesn't mean literally breaking ice; it means to start a conversation.
- *Context matters:* The meaning of an idiom is often understood only in the correct context. It can change based on the situation or conversation. Example: "Spill the beans" means to reveal a secret in one context, but in another, it might refer to making a mistake.
- *Cultural specificity:* Some idioms may be unique to certain cultures or regions, so their meanings may not be clear to people from different countries. Example: The idiom "barking up the wrong tree" is common in British and American English, but it might not make sense in other languages.

- Divide the class into 4 groups. Provide 5 idioms to each group, along with their meanings. Some idioms are given below:
  - A stitch in time saves nine – *It's better to deal with a problem right away than wait and let it get worse.*
  - A penny for your thoughts – *Used to ask someone what they are thinking.*
  - Bite the bullet – *To do something difficult or unpleasant that you have been avoiding.*
  - Break the ice – *To start a conversation or activity in a social setting to make people feel comfortable.*
  - Call it a day – *To stop working for the day.*
  - Don't count your chickens before they hatch – *Don't assume something will happen before it actually does.*
  - Hit the nail on the head – *To describe exactly what is causing a situation or problem.*

- In hot water – *In trouble or facing difficulties.*
- It's not rocket science – *It's not difficult to understand.*
- Let the cat out of the bag – *To accidentally reveal a secret.*
- Off the beaten track – *In a place or situation that is unusual or not commonly visited.*

- Each group should create and write a story using the idioms.
- Then, the groups will share their stories with the class.
- After a group shares their story, doubts regarding idioms can be addressed.
- The class can then decide which group created the best story!

Activity 3 Notice Writing

35 mins

Instructions

- Explain the concept of notice-writing to the students. You may refer to the notes below.

Teacher's Notes

A notice is a formal written communication intended to inform or announce something to a specific group of people. It is usually brief and to the point, providing essential details about an event, activity, or important information.

- ***Structure of a Notice:***
  - Heading: The word "NOTICE" should be clearly written at the top.
  - Title/Subject: The subject of the notice is written just below the heading to explain the purpose (e.g., "Inter-School Sports Day," "Lost and Found," "Summer Camp Registration").
  - Date: The date when the notice is being written or issued is placed at the top left corner.
  - Body:
    a. Introduction: Briefly introduce the purpose of the notice.
    b. Details: Include relevant information such as time, date, place, and other necessary details.
    c. Instructions/Action: Mention any instructions or actions expected from the readers (e.g., registration, participation).
- Signature: The notice should be signed by the person issuing it, usually with their name, designation, and contact details (if necessary).

Example of a Notice

NOTICE

Lost and Found

Date: 10th April 2025

This is to inform all students that a blue backpack was found in the school library yesterday. The owner can collect it from the Lost and Found desk near the main office.

Details:

- Item: Blue backpack
- Location found: School Library
- Contact: Mrs. Smith, Receptionist

Please collect the item within one week.

Issued by:

John Roberts, Head of Student Welfare

- Divide the class in groups of 4 to 5 students.
- Each group should brainstorm and come up with an event (e.g., a traditional festival, a local sports event, or a community clean-up) happening in a town or village.
- After deciding on the event, they will write a notice to inform the community about it.
- **Some event ideas:**
  - Music Festival
  - Traditional Dance Performance
  - Clean-Up Drive
  - Sports Day at School
  - Picnic along the Riverfront

Chapter : The Last Bargain

Activity 1 The True Treasure

35 mins

Instructions

- Print out the following poem and distribute it to students. If you are unable to print it, you may write the poem on the board.
- Ask the students to read the poem. You may explain the poem if required.
- Ask the students to answer the questions below.

The True Treasure

I sought a crown, with jewels bright,
To shine and gleam in the moonlight,
But when I wore it, I found no cheer,
For the weight of it filled me with fear.

I chased for fame, to hear applause,
But found no peace in the crowded cause,
For the praise faded, like the dawn,
And I was left, again, all alone.

I searched for gold, for wealth so vast,
But money slipped away, and didn't last,
Then in a field, with flowers in bloom,
I found true joy, and banished gloom.

For the true treasure, I now know well,
Is freedom and peace, where the heart can swell,
Not in riches or fame's bright glow,
But in simple joys that help us grow.

- Divide the class into groups with 4-5 students each. Provide each group with a couple of chart papers if possible. Otherwise, student notebooks can be used.
- Have each group create a visual on chart paper that represents the journey of the speaker in the poem. They can include different treasures (crown, fame, gold, freedom, peace) and show how the speaker moves from searching for material wealth to discovering the true treasure of freedom and peace.
- After the groups finish, have a small gallery walk where groups can present their artwork and explain what it means.

Activity 2 Phrases

35 mins

Instructions

- Have a discussion with students on phrases. You can refer to the notes below.

Teacher's Notes

A **phrase** is a group of words that works together to convey a meaning but does not form a complete sentence. It lacks both a subject and a verb.

Type of Phrase	Description	Example	Example in a Sentence
Noun Phrase	Contains a noun and its modifiers	“the red ball”	The old car is parked outside.
Verb Phrase	Contains a verb and its helping verbs.	"Has been running"	She has been reading all morning.
Adjective Phrase	Contains an adjective and its modifiers	“Very tall”	The soup is extremely hot.
Adverb Phrase	Contains an adverb and its modifiers.	“quite quickly”	She ran very fast.
Prepositional Phrase	Begins with a preposition and ends with a noun or pronoun.	“Under the table”	He is sitting on the chair.

Guidelines for Using Phrases

Clarity: Ensure the phrase adds clear meaning without overcomplicating sentences.

Correct Placement: Place phrases close to the word they modify.

Avoid Sentence Fragments: Phrases should be part of a complete sentence.

Vary Usage: Don’t overuse the same phrase repeatedly.

- Divide the class into 4 groups.
- Assign each group 1 set of jumbled-up phrases. A sample set is given below:

  Sample Set:

  "building", "tall", "a"

  "very", "fast", "running"

  "grass", "on", "the", "soft"

  "old", "the", "man"

  "bank", "river", "the", "by", "the"
- Each group should create a meaningful phrase and use it in a sentence for each set of jumbled up words.
- After completing the sentence, the group will identify the types of phrase.
- Once all groups have completed the task, ask the class to share their sentences and discuss the types of phrases used.

Activity 3 Speaking and Paragraph Writing

35 mins

Instructions

- Tell the class that in groups, they will be writing a paragraph on the topic: True Source of Happiness.
- Tell them that they can use the following clues in their paragraph:

Clues:

Wealth; Fame; Family time; Peaceful walks in Nature; Helping others; Reading books; Cultural Traditions; Community service; Good food and family time; Time with pets; Learning new skills; Dancing with loved ones; Sunsets over the hills; Helping elderly neighbours; Exploring waterfalls; Singing traditional songs; Gardening and growing your own food; Caring for wildlife

- Discuss on the paragraph structure as below:
  - *Introduction:* Start your paragraph by introducing the idea of true happiness.
  - *Body (explaining chosen clues):* Introduce each item you selected, then explain how it contributes to happiness. Use examples. Be clear: Don't just mention the item, explain its importance in finding happiness.
  - *Conclusion:* End your paragraph by summarising your thoughts on what constitutes true happiness.
- Divide the class into groups of 4-5 students. Each group will write a paragraph on the topic **"True Source of Happiness"** based on their chosen clues. Each group can choose items above and explain how these items might contribute to happiness.
- Groups will share their paragraphs with the class.
- Then, a discussion can be held on how different perspectives contribute to the idea of true happiness.
- The class can also decide which group wrote the best paragraph.

UNIT: 4 Assessment

35 mins

Section A (Literature)

Choose the correct answer from the given options-

1. What caused Bepin Choudhary to doubt his memory?
   a) A strange man who claimed to know him.
   b) A letter from his old friend.
   c) A family member's suggestion.
   d) A visit to a doctor.
2. What did Bepin Choudhary do after the stranger's insistence?
   a) He ignored the stranger completely.
   b) He went to see a doctor to check his memory.
   c) He decided to visit his old school.
   d) He became angry and shouted at the stranger.
3. Which offer does the speaker reject first in the poem?
   a) The offer of gold
   b) The offer of power
   c) The offer of service
   d) The offer of love
4. What does the speaker finally choose in the poem?
   a) Power and wealth
   b) Labour and service
   c) Love and affection
   d) Freedom and peace

Answer the following questions-

5. What does the letter from Chunni reveal about the situation?

   _____
   _____
   _____
   _____

6. What kind of offers does the speaker reject in the poem "The Last Bargain"?

   _____
   _____
   _____

7. Explain how the prank made Bepin Choudhary question his own memory.

_____
_____
_____
_____
_____
_____
_____
_____
_____

8. Explain the significance of the "last bargain" in the poem. What does the speaker learn from his experiences?

_____
_____
_____
_____
_____
_____
_____
_____
_____

Section B (Grammar)

Match the idiom on the left with its correct meaning on the right.

Idioms	Meaning
1. **A piece of cake**	A) To complain about something that cannot be changed
2. **Under the weather**	B) Very easy to do
3. **Burning the midnight oil**	C) To be ill or unwell
4. **Cry over spilt milk**	D) To work very late into the night
5. **The ball is in your court**	E) It's now your responsibility to take action

Choose the correct phrase from the options below and fill in the blanks.

Phrases:

at the end of the day
for the time being
in the long run
on the other hand
in the meantime

Sentences:

a. I am not sure about the decision, but _____, I will go with it.
b. The exam was difficult, but _____, I believe it will help me in the future.
c. He loves playing football, but _____, he enjoys reading more.
d. The meeting has been delayed. _____, let's wait in the waiting area.
e. _____, what matters most is that we gave it our best shot."

Section C (Writing)

Write a paragraph on the topic "The Hidden Path and the Forgotten Treasure". You can use the following points as clues, which are jumbled up:

gold coins, compass

hills region, narrow paths

old doorway, leading to a quiet place

compass still in your pocket

heavy wooden box

finding a forgotten treasure? or did the hills choose to show you something others weren't meant to see?

entrance seems to vanish

UNIT: 4 Answer Key

Section A (Literature)

1. a)
2. b)
3. b)
4. d)
5. The letter from Chunni reveals that the entire situation, including the memory lapse about the Ranchi trip, was a prank. Chunni explains that he had fabricated the whole story to make Bepin doubt his memory.
6. The speaker rejects material and worldly offers as he realises they do not lead to true happiness or freedom.
7. The prank about the Ranchi trip made Bepin Choudhary question his own recollection of past events. Bepin, a man who prided himself on having a sharp memory, found himself unable to remember the trip, which caused him to doubt his mental faculties. As the stranger continued to insist on the details of the trip, Bepin became increasingly worried that he was suffering from a serious memory lapse or mental disorder. Then there were other people who made it feel like the Ranchi trip had actually happened but Bepin did not remember it. This anxiety led him to visit a doctor to check if he was developing a memory problem. The prank manipulated Bepin's fear of losing control over his mind, leading him to believe in something that was not true.
8. The "last bargain" in the poem represents the speaker's realisation that true happiness and fulfilment cannot be bought with gold, power, or status. Throughout the poem, the speaker is offered various things—wealth, power, and service—but he refuses them all. He learns that none of these can bring him lasting contentment. In the end, he chooses the final bargain of freedom and peace, symbolised by the child' play. This reflects the idea that true happiness comes from inner freedom, not material possessions or external power. The poem emphasises the importance of personal peace and liberation over worldly success.

Section B (Grammar)

Idioms:

1. **A piece of cake** B) Very easy to do
2. **Under the weather** C) To be ill or unwell
3. **Burning the midnight oil** D) To work very late into the night
4. **Cry over spilt milk** A) To complain about something that cannot be changed
5. **The ball is in your court** E) It's now your responsibility to take action

Phrases:

a. I am not sure about the decision, but **for the time being**, I will go with it.
b. The exam was difficult, but **in the long run**, I believe it will help me in the future.
c. He loves playing football, but **on the other hand**, he enjoys reading more.
d. The meeting has been delayed. **In the meantime**, let's wait in the waiting area.
e. **At the end of the day**, what matters most is that we gave it our best shot.

Section C (Writing)

Since creative writing tasks are subjective in nature, the answers will vary from student to student. Some aspects to consider while evaluating paragraph writing are:

- Is the content relevant to the given prompt or theme?
- Does the paragraph have a clear beginning, middle, and end?
- Are the sentences complete and grammatically correct?
- Does the paragraph avoid excessive repetition?
- Does the student use a range of vocabulary instead of repeating the same words?
- Are common words spelled correctly?
- Is proper punctuation used (capital letters, commas, periods, etc.)?
- Is the paragraph coherent?

Learning Level Tracker

Keep a record of unit assessment results in the tracker.

As you conduct assessments based on the activities suggested, put a tick mark as per the following:

Level 1: Not able to solve problems and having difficulty comprehending the problem

Level 2: Solves most of the problems with external support

Level 3: Solves problems independently

Name of the School:	**UDISE:**
Block:	**District:**
Name of the Teacher:	**Assessment Date:**

Class: 8		Subject: English		
Roll No.	Name of the Student	Unit: 4		
		Chapter:	1. Bepin Choudhury's Lapse of Memory	
			2. The Last Bargain	
		Level 1	Level 2	Level 3

UNIT : 5

Chapter : The Summit Within

Activity 1 The Courage to Follow One's Dreams

35 mins

Instructions

- Divide the class into groups of 4-5 students each.
- Write the following passage on the board or distribute its printouts to the groups.
- Ask the groups to read the passage and discuss it among themselves.

The Courage to Follow One's Dreams

Having the courage to follow your dreams means being willing to face challenges, take risks, and overcome doubts, even when the journey feels difficult. It's about believing in yourself and not giving up, no matter how many obstacles stand in your way.

Imagine a student who dreams of becoming a professional footballer. Despite facing fierce competition and the risk of injury, they train every day, pushing their body to its limits. They work hard to improve their skills, even when they don't make the school team at first. Though their friends might choose easier paths or suggest they should focus on other subjects, this student continues to follow their dream because they have the courage to believe in their talent and keep striving for success.

Similarly, consider a young girl who dreams of becoming a doctor. She faces long hours of study, sacrifices her free time, and must push through moments of exhaustion. There are times when she questions if she's making the right choice, especially when faced with difficult exams. But she stays focused on her dream of helping people and saving lives. The courage to continue, even in the face of challenges, is what keeps her moving forward.

Lastly, think about someone who dreams of starting their own business. At first, they have little money and few resources. They face many setbacks—failed attempts, the discouragement of others, and the stress of running a business. However, the courage to keep trying, to learn from their mistakes, and to keep improving their ideas eventually leads to the growth of their business. They may not see immediate success, but their persistence and bravery in following their dream lay the foundation for eventual achievement.

In all of these examples, the courage to follow their dreams comes from a belief in the value of their goals and the strength to keep going, no matter the challenges. It's not just about achieving success, but about having the resilience and determination to pursue what you truly desire, no matter how hard it might seem.

- Ask the groups to write answers to the following questions:
  - Why is it important to have courage to follow your dreams?
  - What are some challenges that the student, the girl, and the person starting a business face in the passage?
- Further, ask groups to reflect on and answer the following questions:
  - What are some common dreams that children have and how can they stay motivated to keep going to fulfil them?

- Can you think of a personal example or someone you know who had the courage to follow their dream? *The group should include all real examples coming from students.*

- Each group can then take turns to share answers with the class.

Activity 2 Word Class Conversion

35 mins

Instructions

- Explain the concept of Word Class Conversion through the notes below.

Teacher's Notes

Word class conversion refers to the process of changing a word from one word class (such as a noun, verb, adjective, or adverb) to another without changing its form. This means a word can shift from one grammatical category to another based on how it is used in a sentence. Word class conversion helps us use words more flexibly and expressively in different contexts.

Noun to Verb: Changing a noun (a person, place, thing, or idea) into a verb (an action or state).
Example: Noun: Decision → Verb: Decide

Verb to Noun: Changing a verb (an action or state) into a noun (a person, place, thing, or idea).
Example: Verb: Perform → Noun: Performance

Noun to Adjective: Changing a noun (person, place, thing, or idea) into an adjective (a word that describes or modifies a noun). *Example:* Noun: Beauty → Adjective: Beautiful

Adjective to Noun: Changing an adjective (a word that describes a noun) into a noun (person, place, thing, or idea). *Example:* Adjective: Happy → Noun: Happiness

Adjective to Adverb: Changing an adjective (a word that describes a noun) into an adverb (a word that describes or modifies a verb, adjective, or another adverb). *Example:* Adjective: Quick → Adverb: Quickly

Noun to Adverb: Changing a noun (person, place, thing, or idea) into an adverb (a word that describes a verb, adjective, or another adverb). *Example:* Noun: Beauty → Adverb: Beautifully

- Draw a table on the board with the first row having a column each for: **Base Word, Noun, Verb, Adjective, Adverb**
- Divide the class into 4 teams and form a line for each team. The first person from each team will be the one who writes first.
- Call out a base word (e.g., *"act"*). The first student from team 1 will run to the board and will fill out the first column for the base word. The first student from team 2 will fill out the second column, and so on. Students return to their teams once they finish the word.
- Check the answers and award 1 point for each correct word class form, and a bonus point can be awarded for speed or correct spelling.
- The next team member comes up, and a new word is given. This time, team 2 gets to fill out the first column, team 3 fills out second column and so on.
- Continue until all team members have had a turn or for a set number of rounds. Each team should get a chance to fill out nouns, verbs, adjectives, and adverbs.

Suggested Word List for the Relay

Base Word	Noun	Verb	Adjective	Adverb
Act	Action, actor	act	active	actively
Create	creation, creator	create	creative	creatively
Beauty	beauty	beautify	beautiful	beautifully
Decide	decision, decider	decide	decisive	decisively
Power	power	empower	powerful	powerfully
Help	help, helper	help	helpful, helpless	helpfully
Danger	danger	endanger	dangerous	dangerously
Care	care	care	careful, careless	carefully
Quick	quickness	quicken	quick	quickly
Success	success	succeed	successful	successfully
Music	music	—	musical	musically
Thought	thought	think	thoughtful	thoughtfully
Hope	hope	hope	hopeful, hopeless	hopefully
Friend	friendship	befriend	friendly	—
Joy	joy	enjoy	joyful	joyfully
Strength	strength	strengthen	strong	strongly

Note: Some base words may not have a form for every category.

Activity 3 Paragraph Writing

35 mins

Instructions

- Have a discussion with the class on the topic of pollution and the need for waste management. You can refer to the notes below.

Growth in Population and Development:

- Increasing population and urbanisation
- Impact of development projects on the environment

Environmental Impact:

- Natural beauty and natural landscapes threatened by pollution (e.g., rivers, forests, hills).
- Dangers of plastic waste and other litter

Rivers and Water Pollution:

- Rivers being polluted by waste
- Importance of clean water sources for daily life and agriculture

Responsible Waste Management Practices: importance of proper waste disposal, recycling, and reducing plastic usage

Community Involvement: role of local communities in organising clean-up drives and reducing litter

Long-term Impact:

- Need for sustainable practices to ensure the environment remains healthy for future generations
- Small actions, like reducing plastic use or planting trees, can have a large impact on the environment.

- Divide the class into equal teams of 4-6 students, depending on the class size.
- Explain to the groups that they will write a paragraph on the topic – Waste Management and Reducing Pollution.
- Provide the following instructions for the activity:
  - The first sentence of the paragraph will be provided to each team. For example:
    "Meghalaya's natural beauty is threatened by increasing pollution."
  - The first student must add a sentence that follows logically from the initial sentence. After writing their sentence, they pass the paper to the next student on their team.
  - Each student continues adding one sentence to the paragraph until it is complete.
- Explain the guidelines for paragraph-writing:
  - Maintain coherence and logical flow.
  - Use appropriate linking words (e.g., therefore, however, in addition, for example) to connect sentences.
  - Make sure the paragraph has a clear beginning, middle, and end.

Chapter : The School Boy

Activity 1 Learning with Joy

35 mins

Instructions

- Divide the class into 3 groups.
- Write the following passage on the board or distribute its printouts to the groups. Ask the groups to read the passage and discuss it among themselves.

Learning with Joy

I love to learn beneath the sky,
Where birds above go flying by.
The trees, the breeze, the buzzing bee—
They teach with calm and honesty.

But in the classroom, bright and fair,
A kindly teacher's always there.
With gentle voice and patient smile,
They make the hardest task worthwhile.

They guide us through each book and chart,
And light the lamp inside the heart.
They let us ask, they let us try,
They help our questions learn to fly.

They do not chain our thoughts or dreams,
But shape them like the flowing streams.
They take us out to touch the air,
And show us learning everywhere.

So whether roof or sky above,
We learn with joy, and hope, and love.
For nature, books, and teachers too,
All help to shape the things we do.

- Ask the groups to write the answers to the questions below and share their answers:
  - Name two things from nature that teach the speaker something.
  - How does the teacher support the students, according to the poem?
  - What does the speaker mean by "They light the lamp inside the heart"?
  - How does the poet describe the connection between nature and learning?
- To tie the discussion together, have a class discussion on: How does making learning joyful help you remember better?

Activity 2 Tenses

35 mins

Instructions

- Explain tenses and the transformation of tenses to the class. You can refer to the notes below.

Teacher's Notes

Tenses show the **time** of an action or event. They help us understand **when** something happens — in the **past, present,** or **future**.

There are three main types of tenses:

Present Tense	Things happening now	*I read a book.*
Past Tense	Things that happened before	*I read a book yesterday.*
Future Tense	Things that will happen	*I will read a book tomorrow.*

Each tense has different forms (simple, continuous, perfect, perfect continuous) to show the exact timing or nature of the action.

Guidelines for Transformation of Tenses: The transformation of tenses means changing a sentence from one tense to another (usually while keeping the meaning or sequence of time).

Here are some basic rules and examples:

Present to Past

Simple Present → Simple Past	*He plays football. → He played football.*
Present Continuous → Past Continuous	*She is singing. → She was singing.*
Present Perfect → Past Perfect	*I have finished my work. → I had finished my work.*

Past to Present

Simple Past → Simple Present	*They watched a film. → They watch a film.*
Past Continuous → Present Continuous	*We were reading. → We are reading.*

Future to Present/Past

Simple Future → Simple Present (for instructions/routines)	*I will go to school. → I go to school.*
Simple Future → Simple Past (in reported speech)	*She said, "I will come." → She said that she would come.*

Tips for Tenses:

Look at the main verb to identify the tense.

When changing tenses, also adjust time expressions:

Today → That day

Tomorrow → The next day

Yesterday → The day before

In reported speech, tenses usually shift one step back:

Present → Past, Past → Past Perfect, Will → Would

- Divide the class into 5 groups. Provide 1 story to each group. Some samples are given below:

  Sample 1: A Rainy Day in Shillong

  Every afternoon, dark clouds gather above the hills. The wind blows gently and the rain starts to fall. The streets of Shillong become shiny and wet. Children run to the windows and watch the raindrops. Some people open their umbrellas and walk carefully on the slippery paths.

  Sample 2: School Picnic to Umiam Lake

  Our class goes to Umiam Lake for a picnic. We carry snacks, water bottles, and a speaker. The teacher tells us to stay together. We play games, sing songs, and take many photos. At lunch, we sit on the grass and share our food.
- Ask the groups to read the story carefully together. Make sure everyone understands it.
- The groups should identify the verbs in the present tense. Remind them that These are the words that show action (e.g. walk, eat, go).
- The groups will rewrite the story in the past or future tense. You can decide which groups will write in past tense and which groups will write in future tense.
- Then, the groups will present their stories to the class.

Activity 3 Paragraph Writing

35 mins

Instructions

- Tell the class that they will be writing a paragraph in groups. The topic for the paragraph is: An Ideal School Day.
- Write the clues on the board and have a discussion on the same.

  Writing Clues / Prompts:

  Start with a joyful beginning: What time does the ideal school day start? Is it inside a classroom, outdoors, or somewhere else?

  Creative subjects and learning: Which subjects do you learn? Do you explore music, art, nature, or experiments? How are these subjects taught in a fun way?

  Teachers and teaching style: What is your teacher like? Do they tell stories, use games, or let you ask lots of questions?

  Activities that excite you: Do you go outside, do group work, play educational games, or do projects? What makes learning feel like an adventure?

  How the day ends: Do you reflect on what you learned? Do you go home happy and inspired?

- Next, explain the guidelines for paragraph-writing:
  - Maintain coherence and logical flow.
  - Use appropriate linking words (e.g., therefore, however, in addition, for example) to connect sentences.
  - Make sure the paragraph has a clear beginning, middle, and end.
- Divide the class into groups with 4-5 students.
- Each group should collectively write a paragraph on the assigned topics. Then, the groups can present their work to the class.

UNIT: 5 Assessment

35 mins

Section A (Literature)

Choose the correct answer from the given options-

1. According to the author, the climb to the summit is a symbol of:
   a) Physical strength
   b) Money and fame
   c) Human curiosity and the spirit of adventure
   d) A holiday
2. What does the "internal summit" refer to in the chapter?
   a) Another mountain
   b) Winning a competition
   c) Climbing inside a cave
   d) Exploring one's own mind and overcoming fears
3. In the poem, why does the boy dislike going to school?
   a) He is afraid of his classmates
   b) He feels it takes away his freedom and joy
   c) He finds school too easy
   d) He prefers staying at home all day
4. The poet compares a child in strict schooling to:
   a) A bird flying high
   b) A flower in full bloom
   c) A plant stuck in a dark room
   d) A bird in a cage

Answer the following questions-

5. Why did the author climb Mount Everest?

   _____
   _____
   _____
   _____

6. How did the author feel after reaching the top of Mount Everest?

   _____
   _____
   _____
   _____

7. Why does the boy prefer staying outdoors in the summer morning?

   _____
   _____
   _____
   _____

8. What effect does forced learning have on a child, according to the poem?

_____
_____
_____

9. Describe how the physical act of climbing Mount Everest relates to the inner journey of self-discovery, as explained by the author.

_____
_____
_____
_____
_____
_____
_____
_____

10. What message does William Blake give through the poem The School Boy?

_____
_____
_____
_____
_____
_____
_____

Section B (Grammar)

In each sentence, change the word in brackets to the correct form as required by the sentence.

1. The child made a very (create) _____ drawing in art class. *(adjective form of "create")*
2. She spoke with great (kind) _____ to the lost puppy. *(noun form of "kind")*
3. They decided to (beauty) _____ the room with flowers and lights. *(verb form of "beautiful")*
4. He ran so (quick) _____ that nobody could catch him. *(adverb form of "quick")*
5. Her (decide) _____ helped the team win the match. *(noun form of "decide")*

Change the tenses in the following sentences as per the instructions.

6. She writes a letter to her grandmother. *(Change to past tense)*

_____
_____

7. They played football in the evening. *(Change to present tense)*

_____
_____

8. I am reading a storybook. *(Change to future tense)*

_____
_____

9. We will go to the museum tomorrow. *(Change to past tense)*

_____
_____

10. He has finished his homework. *(Change to past perfect tense)*

_____
_____

Section C (Writing)

Write a paragraph on the topic: **A Memorable Day in My Life**. Take an example from your life. Mention the day and narrate the incident that made the day memorable.

Key points to consider:

- Describe the day and why it was memorable.
- What happened on that day (special event, achievement, or personal experience).
- The people involved in the day's events.
- How you felt during the event.
- What you learned from that experience.

UNIT: 5 Answer Key

Section A (Literature)

1. c)
2. d)
3. b)
4. d)
5. The author climbed Mount Everest because of his love for adventure, the desire to overcome challenges, and the joy of reaching great heights. It also symbolised testing his own strength, both physical and mental.
6. The author felt a deep sense of humility, satisfaction, and spiritual peace. He realised that such a great achievement made him feel small in front of nature's greatness.
7. The boy enjoys the singing of birds, the company of the tree, and the beauty of nature. He finds peace and happiness outside, which makes him dislike the dull and strict environment of the classroom.
8. According to the poem, forced learning makes the child unhappy and steals the joy of discovery. It dulls his creativity and curiosity, just like a bird in a cage that cannot sing or fly.
9. In "The Summit Within," the author Major Ahluwalia explains that climbing Mount Everest is not only a physical adventure but also a journey of the mind. Reaching the summit symbolises overcoming difficulties and discovering one's inner strength. Just as a climber faces steep slopes and harsh conditions, individuals must also face fears, doubts, and challenges within themselves. By completing the climb, the author feels he has also achieved a mental victory. This comparison shows that both the physical and internal journeys require courage, determination, and resilience.
10. William Blake's poem The School Boy shares the message that children learn best in a free and joyful environment. The poet compares strict schooling to trapping a bird in a cage, where the child loses all happiness and curiosity. He believes that nature is the best teacher, as it inspires wonder and imagination. By forcing children to learn in a rigid system, we damage their natural growth. The poem urges us to rethink education and make learning more creative, free, and connected to the world around us.

Section B (Grammar)

Word Phrases:

1. The child made a very **creative** drawing in art class.
2. She spoke with great **kindness** to the lost puppy.
3. They decided to **beautify** the room with flowers and lights.
4. He ran so **quickly** that nobody could catch him.
5. Her **decision** helped the team win the match.

Tenses:

6. She wrote a letter to her grandmother.
7. They play football in the evening.
8. I will read a storybook.
9. We went to the museum tomorrow. *(Corrected for time – "tomorrow" becomes "yesterday")* → We went to the museum yesterday.
10. He had finished his homework.

Section C (Writing)

Since creative writing tasks are subjective in nature, the answers will vary from student to student. Some aspects to consider while evaluating paragraph writing are:

- Start with a topic sentence: Clearly state what the paragraph is about.
- Use supporting sentences: Add 2–4 sentences with details, examples, or explanations.
- Stay on one idea: Don't mix too many topics in one paragraph.
- Use correct tense and grammar: Keep the same tense (present, past, or future) throughout.
- End with a closing sentence: Wrap up your idea or give a final thought.
- Keep it clear and neat: Use simple, correct language and proper punctuation.

Learning Level Tracker

Keep a record of unit assessment results in the tracker.

As you conduct assessments based on the activities suggested, put a tick mark as per the following:

Level 1: Not able to solve problems and having difficulty comprehending the problem

Level 2: Solves most of the problems with external support

Level 3: Solves problems independently

Name of the School:	**UDISE:**
Block:	**District:**
Name of the Teacher:	**Assessment Date:**

Class: 8		Subject: English		
Roll No.	Name of the Student	Unit: 5		
		Chapter:	1. The Summit Within	
			2. The School Boy	
		Level 1	Level 2	Level 3

UNIT : 6

Chapter : This is Jody's Fawn

Activity 1 Apu and the Clouded Leopard Cub

35 mins

Instructions

- Write the following passage on the board or distribute its printouts to the students.
- Ask the students to read the passage.

Apu and the Clouded Leopard Cub

In the misty village of Lumsohphoh, nestled in the green hills of Meghalaya, lived a kind-hearted boy named Apu. His father was a skilled herbalist who often ventured into the forests to collect rare plants and roots.

One stormy night, Apu's father returned home bruised and bleeding. He had been attacked by a wild animal, but in self-defence, he had struck it down. The villagers later discovered that it was a clouded leopard, a rare and shy animal found in the hills.

The next morning, Apu couldn't stop thinking about the animal. A feeling of guilt and sorrow grew in his heart. "What if it had a cub?" he wondered.

With his father's cautious permission, Apu went into the forest, following the trail from the night before. After hours of searching, hidden in a hollow under a rock, he found a tiny cub, trembling and alone.

Apu gently wrapped the cub in his shawl and brought it home. At first, the villagers were afraid, but Apu explained, "We took its mother's life. It's only right we protect the baby."

Under Apu's care, the cub grew strong. He fed it warm milk, kept it safe, and named it Sohra, after the nearby town. Sohra followed Apu everywhere — through the fields, to school, even to the waterfall where he played.

As the months passed, Apu knew he couldn't keep Sohra forever. The cub belonged to the wild. With a heavy heart, he took Sohra deep into the forest one last time and watched as it vanished into the trees.

Though he missed Sohra dearly, Apu felt proud. He had done the right thing — showing that kindness and responsibility towards nature begin with small actions.

- Divide the class into pairs.
- Provide the following questions to each pair and ask them to discuss and answer the questions in writing. If anyone is facing any challenges, help them understand the story.

Questions:

- Who is a herbalist?
- What does 'trembling' mean?
- Who said: "What if it had a cub?"
- Who said: "We took its mother's life. It's only right we protect the baby."
- Who described: "He had been attacked by a wild animal..."
- Apu lived in a village called _____.
- One _____ night, Apu's father came back injured.
- Apu named the cub _____.
- He fed the cub warm _____ every day.
- Apu's father was a schoolteacher. (True/False)
- Apu found the cub under a tree. (True/False)
- The villagers were afraid of the cub at first. (True/False)
- The story is set in the desert. (True/False)

- Then have a few pairs volunteer to share their work with the class. Any doubts the class has should also be cleared.

Activity 2 Transitive and Intransitive Verb

35 mins

Instructions

- Explain "Transitive and Intransitive Verb" to the class. You can refer to the notes below.

Teacher's Notes

A **transitive** verb needs an object to make sense in the sentence. For example, "She kicked the ball." Here, "kicked" is a transitive verb, and "the ball" is the direct object that receives the action.

Examples of Transitive Verbs:

- Eat (I **ate** an apple.)
- Write (She **wrote** a letter.)
- Buy (They **bought** a new car.)
- Read (He **read** the book.)

An **intransitive** verb does not need an object in the sentence. For example, "She laughed loudly." Here, "laughed" is an intransitive verb, and there is no direct object receiving the action.

Examples of Intransitive Verbs:

- Sleep (He **slept** soundly.)
- Run (They **ran** every morning.)
- Arrive (We **arrived** late.)
- Sit (She **sat** on the bench.)

- Divide the class into groups of 4-5 students.
- Provide around 4-6 verbs to each group. You may use the verbs below or create your own list.

paint	jump	throw	sleep	bake	run
carry	cry	read	swim	bring	laugh
open	sneeze	fix	arrive	watch	travel
eat	fall	clean	grow	write	sit
break	go	catch	stay	lift	come
hold	shout	draw	disappear	climb	rest
wash	lie	close	stand		

- After discussing, the groups will classify the verbs provided as “transitive” or “intransitive”. They should also construct a sentence using each verb. All this should be done in writing.
- After the activity, the groups will share their work with the class. Any doubts of students will be clarified regarding the topic.

Activity 3 Story Writing

35 mins

Instructions

- Begin the activity with a discussion on the basic guidelines for writing a story. You can refer to the notes below.

Teacher's Notes

Structure your story

- Introduction: Set the time and place. Introduce the main character with a short background. Start with action or something interesting.
- Build the Plot: Show the problem or challenge the character faces.
- Climax: The most intense part where the character faces their biggest test or makes a key choice.
- Conclusion: Wrap up the story and show what the character learns.

Develop Characters and Dialogue

- Make characters relatable and give them a clear goal or problem.
- Use dialogue to show their personality and move the story forward.

Use Descriptive Language

- Describe what the character sees, hears, feels, smells, or tastes.
- This helps the reader picture the scene and feel involved.

Stay Consistent

- Pick a point of view (first person or third person) and tense (past or present).
- Stick to it throughout the story.

Focus on Conflict and Resolution

- Good stories have problems or struggles.
- The conflict can be with others or within the character.

Stay Relevant: Keep the story focused on the topic or situation given.

Proofread and Edit: Check for grammar, punctuation, and sentence clarity.

Be Creative and Original: Add a twist or surprise to make the story unique and let your voice and style shine through.

- Tell the class that they will be writing a story in groups. The topic for the story is **"The Dog with the Red Ribbon"**
- Tell the class that the setting of the story is the following: *In the town of Shillong, a quiet boy named Tansen discovers a stray dog being chased away by shopkeepers at the market. Instead of ignoring it like the others, he offers it food and ties a red ribbon around its neck.*
- Ask students to write the story and share it with the whole class.

UNIT: 6 Assessment

35 mins

Section A (Literature)

Choose the correct answer from the given options-

1. What was used to draw out the poison from Jody's father's wound?
   a) A snake stone
   b) A herbal paste
   c) The heart and liver of a doe
   d) Antivenom injection
2. Why did Jody want to look after the fawn?
   a) He wanted a new pet
   b) He was feeling guilty
   c) He felt it was his responsibility after killing its mother
   d) He wanted to show it to his friends
3. How did Jody find the fawn in the forest?
   a) He followed its footprints
   b) He followed buzzards
   c) He heard it crying
   d) He found it by chance
4. What does the story mainly teach us?
   a) Hunting is fun
   b) Animals can be dangerous
   c) Children should go into the forest
   d) We should be kind and responsible towards animals

Answer the following questions-

5. How did Jody convince his parents to let him go into the forest?

   _____
   _____
   _____

6. What challenges did Jody face while finding and bringing the fawn home?

   _____
   _____
   _____

7. How does *"This is Jody's Fawn"* help us understand the importance of kindness, especially towards animals that cannot speak for themselves?

   _____
   _____
   _____
   _____
   _____
   _____

Section B (Grammar)

Highlight the verbs in the following sentences and mention if they are Transitive or Intransitive.

1. She carried the basket up the hill.
2. The baby slept peacefully through the night.
3. They built a treehouse in the garden.
4. We arrived early for the show.
5. He kicked the ball into the net.

Section C (Writing)

- **Write a story about a character who experiences a significant change.** The change can be anything—a new home, a new school, a new hobby, or a personal challenge. Describe how the character feels before the change, during the change, and after the change.

  Example of change: A young girl moves to a new city and experiences the challenges and excitement of starting over.
- Make sure that your story has:
  - A clear beginning (introduction to the character and the change they are facing).
  - A detailed middle (describing the character's experiences during the change).
  - A well-developed end (the resolution or what happens after the change).

UNIT: 6 Answer Key

Section A (Literature)

1. c)
2. c)
3. b)
4. d)
5. Jody respectfully explained to his parents that since they had taken the fawn's mother's life, they should not let the fawn die. His strong sense of morality and responsibility convinced them.
6. Jody had to walk through thick forest and keep a careful eye out for signs of the fawn. He found it frightened and weak. Carrying it home was tiring, but he managed with patience and care.
7. The story helps us see that animals, though they cannot speak like humans, have feelings and needs just the same. Jody understands that the fawn cannot survive on its own, and that it is suffering silently after losing its mother. By choosing to help the fawn, Jody shows that kindness is not limited to people—it extends to all living beings. His gentle care, empathy, and sense of fairness show that animals deserve compassion, especially because they cannot ask for help. The story encourages readers to be sensitive and aware of how their actions affect the world around them, and to always act with kindness and responsibility towards creatures who depend on us.

Section B (Grammar)

1. She ***carried*** the basket up the hill. ***(transitive)***
2. The baby ***slept*** peacefully through the night. ***(intransitive)***
3. They ***built*** a treehouse in the garden. ***(transitive)***
4. We ***arrived*** early for the show. ***(intransitive)***
5. He ***kicked*** the ball into the net. ***(transitive)***

Section C (Writing)

Since creative writing tasks are subjective in nature, the answers will vary from student to student. Some aspects to consider while evaluating story writing are:

- The plot is the sequence of events that make up the story. It includes an introduction, rising action, climax, falling action, and conclusion.
- Characters are the people or beings that drive the story forward.
- The setting is where and when the story takes place.
- The conflict is the central problem or challenge the characters face.
- The theme is the central idea or message the story conveys.
- The point of view is the perspective from which the story is told.
- Dialogue is the conversation between characters.
- Style and Language - the way the story is written affects its tone and impact.
- Pacing refers to how quickly or slowly the events unfold in the story.
- Often, stories have a deeper moral or lesson for the reader.

Learning Level Tracker

Keep a record of unit assessment results in the tracker.

As you conduct assessments based on the activities suggested, put a tick mark as per the following:

Level 1: Not able to solve problems and having difficulty comprehending the problem

Level 2: Solves most of the problems with external support

Level 3: Solves problems independently

Name of the School:	**UDISE:**
Block:	**District:**
Name of the Teacher:	**Assessment Date:**

Class: 8		Subject: English		
Roll No.	Name of the Student	Unit: 6		
		Chapter: This is Jody's Fawn		
		Level 1	Level 2	Level 3

UNIT : 7
Chapter : A Visit to Cambridge

Activity 1 One Step Behind

35 mins

Instructions

- Divide the class into groups of 4 to 5 students.
- Distribute printouts of the following story in the groups. If you are unable to arrange printouts, you may write the story on the board.

One Step Behind

In a village near Mawlyngbna, lived a girl named Kyntiew. She wore a leg brace after an old injury, which made her walk slowly. But Kyntiew was known for her deep knowledge of local herbs — she had learnt it all from her mother and could spot even the rarest plants in the forest.

One day, a group of students from Shillong came for a nature walk, led by a guide named Bah Daryl. Seeing her brace, he smiled and said, "You can stay at the back, Kyntiew. Just enjoy the view — don't strain yourself."

She said nothing, though she knew the trail better than anyone.

Along the path, Bah Daryl pointed to a leaf, sharing its name and announcing its use for coughs. Kyntiew quietly corrected him by saying that he was confusing it with another leaf that grows closer to the streams.

He laughed lightly. "Oh, how sweet. You've been paying attention!"

Later, when her plant samples were the only correctly labelled ones, her teacher said, "Kyntiew should be the one leading next time."

Bah Daryl forced a smile. "Yes, maybe she can assist."

Kyntiew replied, "I won't assist. I'll lead."

- Ask the groups to discuss the ways in which Kyntiew was looked down upon or disrespected.
- Also, ask them to write a few ways in which she could have been respected.
- Then have the groups share their work with the class and encourage them to ask each other questions.

Activity 2 Adjectives and Their Types

35 mins

Instructions

- Explain adjectives and types of adjectives to the class. You may refer to the notes below.

Teacher's Notes

Adjectives are words that describe or give more information about a noun (a person, place, thing, or idea). They help us understand what kind, how many, which one, or whose.

Examples: a **tall** tree; **three** books; **her** bag; **this** house

Types of adjectives and their definitions:

Type of Adjective	Definition	Example
Descriptive	Describe the quality or appearance of a noun.	*soft, red, large, noisy*
Quantitative	Show how much or how many.	*some, many, few, much*
Demonstrative	Point out which noun is meant.	*this, that, these, those*
Possessive	Show ownership or belonging.	*my, your, his, her, our*
Interrogative	*Used to ask questions about nouns.*	*which, what, whose*
Distributive	*Refer to individual members of a group.*	*each, every, either, neither*
Numeral	*Show number or order.*	*one, two, first, second*
Proper	*Formed from proper nouns, showing origin or relation.*	*Indian culture, British food, Khasi dress*

- Divide the class into small groups and assign 1-2 types of adjectives to them, ensuring all types have been assigned.
- Ask each group to form 2-3 sentences based on the adjectives in their category.
- After this, each group should share their sentences with the class while the other groups guess which type of adjective(s) was used in the sentence.

Activity 3 Notice Writing

35 mins

Instructions

- Revise the concept of notice-writing for the class. You may refer to the notes below.

Teacher's Notes – Structure of a Notice

- Heading: The word "NOTICE" should be clearly written at the top.
- Title/Subject: The subject of the notice is written just below the heading to explain the purpose (e.g., "Inter-School Sports Day," "Lost and Found").
- Date: The date when the notice is being written or issued is placed at the top left corner.
- Body:
  a. Introduction: Briefly introduce the purpose of the notice.
  b. Details: Include relevant information such as time, date, place, and other necessary details.
  c. Instructions/Action: Mention any instructions or actions expected from the readers (e.g., registration, participation).
- Signature: The notice should be signed by the person issuing it, usually with their name, designation, and contact details (if

- Divide the class in small groups.
- Give each group a jumbled-up notice that they have to correct and write. Some examples are given below that you can use:

Notice	**Notice**	**Notice**
There will be a thing in the hall next week. Students who are interested should give names. It's about books and stuff. Give your names soon. Thanks, Library	Trip happening next month. Only a few can go. Get the form. By order Office	Some people are coming to talk to us about something important. It'll be after lunch. Be there. Thanks Teacher

- Then have each group share their revised notice with the class. Ask other groups to share their views on the notice.

UNIT: 7 Assessment

35 mins

Section A (Literature)

Choose the correct answer from the given options-

1. What does Firdaus admire most about Stephen Hawking?
   a) His fame and wealth
   b) His intelligence and resilience
   c) His ability to walk again
   d) His fashion sense
2. Why did Firdaus Kanga feel connected to Stephen Hawking?
   a) They were both scientists
   b) They both studied at Cambridge
   c) They both used wheelchairs and had physical disabilities
   d) They wrote books together
3. What lesson does Kanga take away from his meeting with Hawking?
   a) People with disabilities should not travel
   b) One must accept limitations and still live fully
   c) Science is more important than poetry
   d) Dreams are not possible for disabled people
4. Why was the visit to Stephen Hawking important for the narrator?
   a) He wanted a signature
   b) He was writing a report
   c) It was a deeply personal and inspiring meeting
   d) He wanted to study at Cambridge

Answer the following questions-

5. Who was Stephen Hawking, and why was Firdaus Kanga keen to meet him?

   _____
   _____
   _____

6. What impression did Cambridge leave on Firdaus Kanga?

   _____
   _____

7. Describe the conversation between Firdaus Kanga and Stephen Hawking. What did it reveal about both of them?

   _____
   _____
   _____
   _____
   _____
   _____

8. How does “A Visit to Cambridge” challenge the typical view of disability?

_____
_____
_____
_____
_____
_____
_____

Section B (Grammar)

Underline adjectives in the paragraph below.

The small boy wore a blue jacket and carried a heavy bag. He walked through the narrow street towards the old library. Inside, he found three interesting books on a wooden shelf. The room was quiet, and the bright sunlight came through the tall windows. He picked up that book and sat down to read.

Section C (Writing)

Imagine that you are part of a student club on book-reading or storytelling. Write a notice for the other members about the next meeting and what it is about.

_____
_____
_____
_____
_____
_____
_____
_____
_____

UNIT: 7 Answer Key

Section A (Literature)

1. b)
2. c)
3. b)
4. c)
5. Stephen Hawking was a world-renowned physicist who lived with a severe physical disability. Firdaus Kanga wanted to meet him because he admired his strength, intelligence, and how he continued his work despite his condition, something Kanga could relate to.
6. Kanga found Cambridge beautiful and full of history. He was struck by its old-world charm and the intellectual atmosphere of the place.
7. The conversation between Kanga and Hawking was brief but meaningful. Kanga asked thoughtful questions, some of which touched on sensitive topics like disability and isolation. Hawking responded honestly, even admitting he sometimes found it annoying when people disturbed him. Their exchange revealed that both men, though physically limited, had sharp minds and a strong sense of humour. It also showed their shared understanding of the struggles and possibilities of living with disability. Kanga saw in Hawking a figure of immense courage and intellect, which gave him deeper confidence in himself.
8. The piece challenges the traditional view of disability by presenting two individuals — Kanga and Hawking — who have not let their physical conditions stop them from living rich, meaningful lives. Kanga travels, writes, and reflects deeply, while Hawking contributes to science and philosophy at the highest level. The chapter emphasises the human mind's strength over physical limitation. Rather than portraying disability as a weakness, it shows it as a different way of being — one that can still be powerful, joyful, and full of achievement.

Section B (Grammar)

Adjectives: small, blue, heavy, narrow, old, three, interesting, wooden, quiet, bright, tall, that

Section C (Writing)

Since creative writing tasks are subjective in nature, the answers will vary from student to student. Please assess notice-writing considering the following points:

- Heading / Title
- Date
- Body (what, when, where, who, extra details)
- Name or Signature
- Designation / Class / Club name

Learning Level Tracker

Keep a record of unit assessment results in the tracker.

As you conduct assessments based on the activities suggested, put a tick mark as per the following:

Level 1: Not able to solve problems and having difficulty comprehending the problem

Level 2: Solves most of the problems with external support

Level 3: Solves problems independently

Name of the School:	**UDISE:**
Block:	**District:**
Name of the Teacher:	**Assessment Date:**

Class: 8		Subject: English		
Roll No.	Name of the Student	Unit: 7		
		Chapter: A Visit to Cambridge		
		Level 1	Level 2	Level 3

UNIT : 8

Chapter : A Short Monsoon Diary

Activity 1 A Week of Weather Watching

35 mins

Instructions

- Divide the class into groups of 4-5 students each.
- Write the following passage on the board or distribute its printouts to the groups.
- Ask the groups to read the passage and discuss it among themselves.

A Week of Weather Watching

Monday

I woke to steady rain and a biting chill in the air. The hills had vanished beneath the low grey clouds, and the tin roof echoed with soft drumming. The temperature must have been around 12 degrees — the kind of cold that makes you pull the blanket higher. Even the old dog didn't stir from his dry corner.

Tuesday

The rain slowed but didn't quite stop. Mist hung over the garden, drifting between the trees like a wandering thought. It was damp and still, the kind of day where you can feel the cold clinging to your skin — perhaps 14 degrees at best. I watched a pair of sparrows hopping along the wet railing, feathers fluffed for warmth.

Wednesday

At last, the sun pushed through. The rooftops shimmered, the puddles glinted, and everything seemed freshly washed. It felt warmer — maybe 18 degrees — and for a while, the wind held its breath. A neighbour hung bright clothes to dry, and smoke from distant kitchens curled lazily into the golden light.

Thursday

The cold returned with a dry breeze that swept over the hillside. The sky was pale, the shadows long. The temperature dipped again, somewhere near 13 degrees, and I wrapped my shawl tighter before stepping out. The jackfruit tree stood still, its branches dotted with droplets from the night's hidden mist.

Friday

The rain came back in a gentle, unhurried drizzle. It wasn't harsh, just enough to keep everything glistening. The day felt colder than usual — perhaps only 11 degrees. I stayed inside, sipping hot tea, listening to frogs calling in the fields, while Grandmother read aloud from an old storybook.

- Ask the groups to make a weather chart for the diary entries above. They can use the format below, or you can make one yourself and share it with them.

Day	Weather Description	Approx. Temperature	What Happened / Observation
Monday			
Tuesday			
Wednesday			
Thursday			
Friday			

- Each group can then take turns to share answers with the class.

Activity 2 Simple Past and Past Continuous Tense

35 mins

Instructions

- Explain the Simple Past and Past Continuous Tense to the class. You may refer to the notes below.

Teacher's Notes

Simple Past Tense: The simple past tense is used to describe actions that were completed at a specific time in the past. It is often used with time expressions like "yesterday," "last week," "in 2005," "an hour ago," etc.

Structure:

Affirmative	*Subject + Verb (past form)*	I walked to the store.
Negative	*Subject + did not + Verb (base form)*	She did not eat dinner.
Interrogative	*Did + Subject + Verb (base form)*	Did they play football?

Past Continuous Tense: The past continuous tense is used to describe actions that were in progress at a specific moment in the past. It is also used to describe two actions happening at the same time or to set the scene in a story.

Affirmative	*Subject + was/were + Verb (present participle)*	I was reading a book.
Negative	*Subject + was/were + not + Verb (present participle)*	They were not watching TV.
Interrogative	*Was/Were + Subject + Verb (present participle)*	Was she studying at 8 PM?

Key Differences Between Simple Past and Past Continuous Tense

Difference	Simple Past	Past Continuous
Action Completion	Used for actions that are completed and finished at a specific point in the past.	Used for actions that were in progress or happening at a particular moment in the past.
Use with Time Expressions	Common with time markers like "yesterday," "last week," "two days ago," etc.	Often used with time markers like "while," "when," or "at that time."
Simultaneous Actions	Describes single, completed actions.	Describes two or more actions happening at the same time.

- Divide the class into small groups.
- Ask groups to describe a funny or chaotic scene (e.g. a birthday party, a school picnic, a festival).
  - o They should write 5 sentences describing what was happening (past continuous) and what happened (simple past).
  - o Example:

    "While we were cutting the cake, the dog jumped on the table."

    "Everyone was laughing when the balloon popped."
- Then ask the groups to share their scenes with the class and specify where simple past and past continuous tenses have been used.

Activity 3 Paragraph Writing

35 mins

Instructions

- Revise the guidelines for paragraph-writing with the class:
  - o Maintaining coherence and logical flow.
  - o Using appropriate linking words (e.g., therefore, however, in addition, for example) to connect sentences.
  - o Making sure the paragraph has a clear beginning, middle, and end.
- Then divide the class into small groups, depending on the class size.
- Write the ideas for paragraphs on the board or provide printouts to the groups.

Sample Ideas for Paragraph Writing

1. **If the Clouds Could Speak…**
   What stories would they tell as they drift across the hills? Imagine their voices, their journey, and what they've seen.
   Idea starter: "The cloud paused above the village, murmuring tales of distant oceans…"

2. **A Conversation Between a Raindrop and a Leaf**
   Write a paragraph where a falling raindrop lands on a leaf — and they talk about their very different lives.
   Idea starter: "You fall from the sky," said the leaf, "while I stay rooted in the same place."

3. **The Day the Mist Stole the Village**

   Imagine waking up and finding your village completely hidden by thick mist. What would you do? How would it feel?

   Idea starter: "At first, we thought the village had disappeared…"

4. **A Walk Through a Rainy Dream**

   Create a magical forest where it rains upside down, frogs sing in tune, and trees whisper your name. Write as if you are walking through this world.

   Idea starter: "The puddles floated in the air, and even the thunder sounded curious…"

5. **When the Sun Forgot to Rise**

   Imagine a day where the sun never came out — just endless grey clouds. How does the world change? What do people or animals do?

   Idea starter: "At first, we waited. Then, we lit lanterns. But still, the sun did not come…"

6. **Rain in a Bottle**

   If you could bottle rain and keep it, what would it contain — memories, feelings, music? Write a paragraph describing what you see when you open the bottle one year later.

   Idea starter: "When I opened the bottle, the scent of the old school yard drifted out…"

- Ask the groups to pick a topic or provide one yourself.
- Ask each group to discuss and write a paragraph on the topic.
- After the activity, the groups should share their paragraphs with the class.

Chapter : On the Grasshopper and Cricket

Activity 1 A Quiet Morning

35 mins

Preparation: For this activity, students may need chart paper, colour pencils (both optional)

Instructions

- Write the poem below on the board or distribute its printouts to the class. Read the poem with the class and explain the meaning.

A Quiet Morning

The valley wakes in silver light,
With drifting mist and trees in white.
No horns, no calls, no rush, no race —
Just gentle steps and softened pace.
A child walks slow, her basket bare,
The earth is damp, the sky feels fair.
She hums a tune she does not name,
But peace and joy feel just the same.
Though clouds may come and sun may go,
Such mornings leave a quiet glow.

- Divide the class into small groups of 4–5 students.
- Provide each group with chart paper and colour pencils. Students can use their notebooks and pencils/ pens if chart paper and colour pencils are not available.
- Ask each group to discuss on the following questions:
  - What is happening in the poem?
  - What kind of landscape does it describe?
  - How does the poet create a peaceful mood?
  - What are some small details (e.g. mist, a girl with a basket, white trees, light)?
- Ask each group to create artwork (a visual representation of the poem).
  - Optional elements to include:
    A quote or line from the poem, written artistically
    Symbols of peace (e.g. soft colours, gentle expressions, open space)
- After the activity, each group should share their artwork with the class.

Activity 2 Subject-Verb Agreement

35 mins

Instructions

- Explain Subject-Verb Agreement to the class. You can refer to the notes below.

Teacher's Notes

Subject–Verb Agreement means that the verb must match the subject in number and person. A singular subject takes a singular verb. A plural subject takes a plural verb.

Rule 1: Singular Subject = Singular Verb	A singular subject takes a singular verb. ('s' or 'es' is added after the verb when it is Present Tense.	*Example: The cat runs fast.*
Rule 2: Plural Subject = Plural Verb	A plural subject takes a plural verb.	*Example: The dogs bark loudly.*
Rule 3: Words Joined by 'And' = Plural Verb	When two subjects are joined by and, use a plural verb. Exception: If the subjects refer to the same person or thing, use a singular verb.	*Example: My friend and I are going to the market.* *Example: Bread and butter is my favourite breakfast.*
Rule 4: Words Joined by 'Or' or 'Nor' = Closest Subject Rule	When subjects are joined by or or nor, the verb agrees with the subject closest to it.	*Example: Neither the students nor the teacher is responsible.*
Rule 5: Collective Nouns = Singular or Plural	A collective noun (e.g., team, jury, group) takes a singular verb if it acts as a single unit but a plural verb if members act individually.	*Singular: The team is ready for the match.* *Plural: The team are arguing among themselves.*
Rule 6: Indefinite Pronouns = Singular	Indefinite pronouns like everyone, someone, nobody, each, anyone take singular verbs. Exceptions: Both, few, many, others, several take plural verbs.	*Example: Everyone enjoys the game.* *Example: Few know the answer*
Rule 7: Titles, Names, or Quantities = Singular Verb	Titles, names of books, and quantities take a singular verb even if they look plural.	*Example: "The Chronicles of Narnia" is a great book.*
Rule 8: Subjects with 'Each' or 'Every' = Singular	When each or every precedes the subject, use a singular verb	*Example: Each student has a book.* *Example: Every teacher and student is present.*

Rule 9: Subjects Starting with 'There' or 'Here' = Verb Matches Real Subject	When a sentence begins with "there" or "here," the verb agrees with the subject that follows it.	*Example: There is a book on the table.* *Example: Here are the keys you lost.*
Rule 10: Some Words Are Always Plural	Words like scissors, trousers, glasses take plural verbs.	*Example: These scissors are sharp.*

- Divide the class into small groups.
- Draw the table given below on the board.
- In groups, students should:
  - Check if the subject and verb agree.
  - Correct the verb if it doesn't match the subject.
  - Complete sentence using the correct form. You may encourage students to write funny sentences.

Subject	Verb	Correction (if needed)	Complete Sentence
The dogs	barks		
A bunch of bananas	are		
My parents	cook		
She	have		
They	walk		
Everyone	enjoy		
The teacher	explain		
We	is		
The boy	plays		
You	watches		

- After the activity, the groups should share their work with the whole class including their complete, funny sentences.

Activity 3 Poem Writing

35 mins

Instructions

- Explain to the class how to write a poem. You may refer to the notes below.

Teacher's Notes

Choose a Theme – Decide what your poem is about (nature, feelings, seasons, etc.).

Use Imagery – Describe what you see, hear, feel, smell, or taste to help the reader imagine.

Be Creative with Words – Use comparisons like similes (*as bright as the sun*) or metaphors (*the sky is a blanket of stars*).

Pay Attention to Rhythm – Poems don't always need to rhyme, but they should sound pleasant when read aloud.

Use Rhyme (Optional) – Rhyming words at the end of lines can make the poem musical (*light/night, trees/breeze*).

Line Breaks Matter – Start a new line for each new idea or image — poems don't use long sentences like stories.

Keep It Brief and Meaningful – Good poems often say a lot in a few words.

Use Capital Letters and Punctuation Wisely – Begin each line with a capital letter and use punctuation to guide the reader.

- Divide the class into groups.
- Tell the groups that they have to discuss and write a mini-dialogue poem, giving it a name.
- Explain the activity:
  - The poem will be a short dialogue: 2–3 lines spoken by Summer and 2–3 lines replied by Winter
- On the board, build two idea banks to support all groups:
  - Summer Ideas: sun, bees, flowers, heat, play, brightness, green trees
  - Winter Ideas: cold, mist, frost, quiet, stars, fire, bare trees
  - Helpful Rhyming Words:

    day / play / away
    Sun / run / done
    snow / glow / slow
    fire / higher / choir
    chill / still / hill
- Answer any questions students might have about the activity.
- After the activity, each group should present their poem to the class.

UNIT: 8 Assessment

35 mins

Section A (Literature)

Choose the correct answer from the given options-

1. What is the main feeling expressed by the author throughout the diary?
   a) Anger at the heavy rain
   b) Boredom due to bad weather
   c) Joy and wonder at nature
   d) Fear of thunderstorms
2. What happens to the hills during the monsoon?
   a) They become dry and brown
   b) They are covered with mist and greenery
   c) They become too hot to visit
   d) They are full of snow and ice
3. What is meant by "The poetry of earth is never dead"?
   a) People never stop writing poetry
   b) Poets always write about nature
   c) Nature continues to sing and express beauty in every season
   d) The grasshopper and cricket have written poems
4. According to the poem, what does the grasshopper do in summer?
   a) Sleeps under a stone
   b) Sings joyfully even when birds are tired
   c) Waits quietly for the rain
   d) Hides from the heat

Answer the following questions-

5. Why does the author mention the leopard in his diary?

   _____
   _____
   _____

6. Why does the poet mention both the grasshopper and the cricket?

   _____
   _____
   _____

7. What does the diary tell us about the author's relationship with solitude and nature?

   _____
   _____
   _____
   _____
   _____
   _____
   _____

8. How does the poet show that nature continues to sing in every season?

_____
_____
_____
_____
_____
_____
_____
_____

Section B (Grammar)

Fill in the blanks with the correct verb form — either simple past or past continuous.

1. While I _____(walk) to school, it _____ (start) to rain.
2. They _____ (play) cricket when the dog suddenly _____ (run) onto the field.
3. She _____ (drop) her notebook while she _____ (get off) the bus.
4. I _____ (not hear) the phone because I _____ (listen) to music.
5. We _____ (eat) dinner when the lights _____ (go) out.

Choose the correct verb to complete each sentence:

1. The team (play / plays) very well this season.
2. My friends (enjoy / enjoys) swimming in the summer.
3. Neither of the answers (is / are) correct.
4. The sound of the bells (was / were) beautiful.
5. Each of the students (has / have) a notebook.

Section C (Writing)

Write a descriptive paragraph about a day during the rainy season. You may imagine that you are sitting near a window, or walking through a misty hill path, or watching the rain from a balcony. Try to describe:

- What you see, hear, smell, and feel
- How the plants, birds, or animals behave
- What the rain makes you think or remember

_____
_____
_____
_____
_____
_____
_____
_____
_____

UNIT: 8 Answer Key

Section A (Literature)

1. c)
2. b)
3. c)
4. b)
5. He mentions the leopard to show that even dangerous animals are part of the monsoon environment. Though the leopard is rarely seen, its presence adds mystery and excitement to the hills during the rainy days.
6. The poet uses the grasshopper and the cricket as symbols of two different seasons — summer and winter — to show that nature keeps singing all year round, even when things seem still or quiet.
7. The diary shows that the author finds peace and happiness in solitude and nature. He doesn't complain about being alone or the wet weather; instead, he embraces it. He observes everything around him — the sounds, colours, animals, and plants — and finds joy in these details. The monsoon brings not gloom, but calm and inspiration for him. His diary entries reflect mindfulness and a deep love for the world around him, even in the stillness of the hills.
8. John Keats shows that nature is never silent. In summer, when it is hot and even birds grow tired, the grasshopper keeps singing, full of energy and joy. In winter, when everything seems quiet and still, the cricket chirps by the fireplace, bringing warmth to the cold. Through these images, the poet tells us that nature always finds a way to speak, whether through insects, birds, or other natural sounds. He beautifully captures the continuity of life and beauty in the changing seasons.

Section B (Grammar)

Simple Past or Past Continuous Tense:

1. was walking, started
2. were playing, ran
3. dropped, was getting off
4. did not hear, was listening
5. were eating, went

Subject-Verb Agreement:

1. plays
2. enjoy
3. is
4. was
5. has

Section C (Writing)

Since creative writing tasks are subjective in nature, the answers will vary from student to student. Some aspects to consider while evaluating paragraph writing are:

- Start with a topic sentence: Clearly state what the paragraph is about.
- Use supporting sentences: Add 2–4 sentences with details, examples, or explanations.
- Stay on one idea: Don't mix too many topics in one paragraph.
- Use correct tense and grammar: Keep the same tense (present, past, or future) throughout.
- End with a closing sentence: Wrap up your idea or give a final thought.
- Keep it clear and neat: Use simple, correct language and proper punctuation.

Learning Level Tracker

Keep a record of unit assessment results in the tracker.

As you conduct assessments based on the activities suggested, put a tick mark as per the following:

Level 1: Not able to solve problems and having difficulty comprehending the problem

Level 2: Solves most of the problems with external support

Level 3: Solves problems independently

Name of the School:	**UDISE:**
Block:	**District:**
Name of the Teacher:	**Assessment Date:**

Class: 8		Subject: English		
Roll No.	Name of the Student	Unit: 8 Chapter: 1. A Short Monsoon Diary 2. On the Grasshopper and Cricket		
		Level 1	Level 2	Level 3

Meghalaya Learning Enhancement Programme

MATHS

Chapter 1 : Rational Numbers

Activity 1 Rational or not Rational

35 mins

Instructions

- Begin by inviting a few students to the board, one by one, to demonstrate all four operations—addition, subtraction, multiplication, and division—on rational numbers.
- Next, ask students to pick any two rational numbers of their choice. For example, $-\frac{5}{6}$ and $\frac{2}{3}$
  Instruct them to perform the same four operations now and write the results in their notebooks.
- Ask students to share their results and confirm if all results are rational numbers.
- Next, ask the students what happens when the second number is 0.
- Have them perform the same four operations using 0 as the second number. (Rational numbers are not closed for division when dividing by 0)
- Conclude the class by consolidating the operations on rational numbers and emphasising that rational numbers are not closed under division when dividing by zero.

Activity 2 Exploring Commutativity and Associativity of Rational Numbers

35 mins

Instructions

- Begin by explaining commutativity and associativity to the students.
- Write on the board:
  - If $a*b = b*a$ it is commutative. ($*$ can be any of the four operations)
  - If $a*b \neq b*a$, it is non-commutative.
  - If $a*(b*c) = (a*b)*c$, then it follows associativity
  - If $a*(b*c) \neq (a*b)*c$, it is non-associative
- Next, ask students to take any two rational numbers and perform all four operations to find out for which operations they are commutative and for which operations they are non-commutative.
- Conclude this exercise by consolidating the commutative property of Rational Numbers
- Next, ask students to choose any three rational numbers and check for associativity in all four operations.
- Discuss the associative property of rational numbers, guiding students to analyse their results.
- Wrap up the activity by emphasising that addition and multiplication are both commutative and associative, while subtraction and division do not always follow these properties.

Activity 3 Exploring distributivity in Rational Numbers

35 mins

Instructions

- Begin by explaining distributivity to the class.
- Write on the board:
  - $a \times (b+c) = a \times b + a \times c$
  - $a \times (b-c) = a \times b - a \times c$
- Next, ask students to choose any three rational numbers and perform the above operations to verify whether they obtain the same result in both cases.
- Encourage students to take positive and negative rational numbers
- Direct students to observe that multiplication distributes over both addition and subtraction for all rational numbers.
- Finally, divide the students into pairs and ask them to tabulate the properties of rational numbers in the following format.

	Addition	Subtraction	Multiplication	Division
Closure	Yes			
Commutative				
Associative				
Distributive				

Assessment

35 mins

Rational Numbers

1. Which of the following is a rational number?
   a) $\sqrt{2}$
   b) π
   c) 4/5
   d) $\sqrt{3}$
2. Which of the following is not a property of rational numbers?
   a) Closure under addition
   b) Commutative property under multiplication
   c) Distributive property of multiplication over addition and multiplication
   d) Closure under division
3. Subtract the following rational numbers and simplify the result:
   a) $\frac{5}{7} - \frac{3}{14}$
   b) $-\frac{6}{11} - \frac{2}{11}$
4. Multiply the following rational numbers and simplify:
   a) $\frac{4}{5} \times \frac{-3}{7}$
   b) $-\frac{2}{3} \times -\frac{-9}{11}$
5. Divide the following rational numbers and simplify:
   a) $\frac{3}{8} \div \frac{5}{6}$
   b) $\frac{-7}{5} \div \frac{-2}{3}$
6. Identify the property under multiplication used in each of the following:
   a) $\frac{-4}{5} x \text{ -1} = \frac{-4}{5}$
   b) $\frac{-13}{7} x \frac{2}{7} = \frac{2}{7} x \frac{-13}{7}$
7. Identify the property that allows you to compute the following expression in this way:

$$\left(\frac{1}{3} x \frac{6}{4}\right) x \left(\frac{3}{1} \text{ x } \frac{3}{6}\right) as \frac{1}{3} x \left(\frac{6}{4} x \frac{1}{3} x \frac{3}{6}\right)$$

Answer Key

1. c) 4/5 is a rational number (p/q form)
2. d) Closure under division (Rational numbers are not closed under division because dividing by zero is undefined.)
3. Subtraction of Rational Numbers:
   a) $\frac{5}{7} - \frac{3}{14} = \frac{10}{14} - \frac{3}{14} = \frac{7}{14} = \frac{1}{2}$
   b) $\frac{-6}{11} - \frac{2}{11} = \frac{-8}{11}$
4. Multiplication of Rational Numbers
   a) $\frac{4}{5} \times \frac{-3}{7} = \frac{-12}{35}$
   b) $\frac{-2}{3} \times \frac{-9}{11} = \frac{6}{11}$
5. Division of Rational Numbers
   a) $\frac{3}{8} \div \frac{5}{6} = \frac{3}{8} \times \frac{6}{5} = \frac{18}{40} = \frac{9}{20}$
   b) $\frac{-7}{5} \div \frac{-2}{3} = \frac{-7}{5} \times \frac{3}{-2} = \frac{21}{10}$
6. a) Multiplicative Identity *(Any number multiplied by 1 remains unchanged.)*
   b) Commutative Property of Multiplication (Changing the order of multiplication does not change the product.)
7. *Associative Property of Multiplication (The way numbers are grouped in multiplication does not change the product.)*

Learning Level Tracker

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Level 1: Not able to solve problems and having difficulty comprehending the problem

Level 2: Solves most of the problems with external support

Level 3: Solves problems independently

Name of the School:	**UDISE:**
Block:	**District:**
Name of the Teacher:	**Assessment Date:**

Class: 8		Subject: Maths		
Roll No.	Name of the Student	Chapter: Rational Numbers		
		Level 1	Level 2	Level 3

Chapter 2 : Linear Equations in One Variable

Activity 1 Find the X

35 mins

Instructions

- Divide the students into small groups (each consisting of 3 to 4members).
- Write the following problems on paper slips and place them in a bowl.
  - $4x$-3 = 2(x+5)+x
  - $5x$+8 = 2(2x+4)+x
  - 3(x-2) = 4(x-5)+6
  - 2(5x+1) =3(3x-4)+7
  - 4(x+2) = 5(x-1)-3x+6
  - 2(3x-1) = 4x+8
  - 7(x-3) = 5x+8
- Ask one member of each team to come and pick a problem from the bowl.
- The students then return to their respective team and work with group members to solve the equation collaboratively.
- Once the groups have solved the problems, ask one student from each team to come to the board, explain the steps, and discuss the solution with the whole class. Encourage students to compare different approaches and discuss alternative methods for solving the equations.

Activity 2 Complex variable

35 mins

Instructions

- Ask the students to sit in pairs.
- Write the following problems on a slip and keep it in a bowl. (Create more problems depending upon the class strength)
  - $\frac{y}{3} - \frac{1}{4} = \frac{y}{5} + \frac{1}{2}$
  - $\frac{k}{2} + \frac{3k}{2} + \frac{4k}{10} = 14$
  - $x + \frac{5}{4} = \frac{3x}{2} + \frac{2}{3}$
  - $\frac{x-3}{6} = \frac{x+2}{8}$

- $4(m-2)=3(2m+1)+5$
- $2(a-5)+3(a+2)=4(3a-7)$
- $0.2(3x+4)=0.1(6x+10)$
- $3(2p+3)-4(p-1)=2(3p+5)-6$

- Ask each pair to pick one problem and solve it.
- Help the students who are struggling to solve them.
- Invite students randomly to solve the problems on the board.

Activity 3 Find the x - 2

35 mins

Instructions

- Divide the students into small groups (each consisting of 3 to 4members).
- Write the following problems on the board.
  - Two friends, A and B, started a business together. A invested $3x+1000$ rupees. B invested $2x+4000$ rupees. If their total investments are equal, find the value of x.
  - A vendor charges $5x+10$ rupees for 1 kg of apples and $3x+50$ rupees for 2 kg of oranges. If the cost of the apples and oranges is the same, find the value of x.
  - A car and a bike start from the same point and travel in opposite directions. The car's speed is $2x+20$ km/h. The bike's speed is $3x+10$ km/h. If they cover the same distance in the same amount of time, find x.
  - Two theatres charge differently for movie tickets: Theater A charges $2x+150$ rupees per ticket. Theater B charges $3x+100$ rupees per ticket. If the ticket prices are the same, find x.
- Ask each group to work on these problems.
- Once the groups have solved the problems, invite one member from each group to the board and share the solution with the entire class.

Assessment

35 mins

Linear Equations in One Variable

1. Solve:
   a) $3(x-2) = 2x+4$
   b) $5(2x-12) = 7(2x+10)$
   c) $2x-3 = 5x+6$
2. Simplify the following:
   a) $\frac{x}{2} - \frac{1}{4} = \frac{x}{5} + \frac{1}{3}$
   b) $\frac{y}{2} + \frac{3y}{5} + \frac{4y}{10} = 14$
   c) $k + \frac{5}{4} = \frac{3k}{2} + \frac{2}{3}$
3. A number is tripled and then 7 is added to it, resulting in 40. Find the number.
4. A shopkeeper sells a pen for ₹50 after giving a discount of ₹15. Find the original price of the pen.

Answer Key

1. a) 3(x-2) = 2x+4
   - Expand: 3x−6 = 2x+4
   - Rearrange: 3x−2x = 4+6
   - Solve: x = **10**

   b) 5(2x−12) = 7(2x+10)
   - Expand: 10x−60=14x+70
   - Rearrange: 10x−14x=70+60
   - Solve: −4x = 130⇒ x = **−32.5**

   c) 2x-3 = 5x+6
   - Rearrange: 2x−5x=6+3
   - Simplify: −3x=9
   - Solve: x= 9/-3 = **-3**

2. a) $\frac{x}{2} - \frac{1}{4} = \frac{x}{5} + \frac{1}{3}$

   $\frac{x}{2} - \frac{x}{5} = \frac{1}{3} + \frac{1}{4}$

   $\frac{3x}{10} = \frac{7}{12}$

   $x = \frac{7}{12} * \frac{10}{3}$

   $x = \frac{35}{18}$

b) $\frac{y}{2} + \frac{3y}{5} + \frac{4y}{10} = 14$

$\frac{(10y+6y+4y)}{10} = 14$

$20y = 14 * 10$

$y = 7$

k+5/4=3k/2+2/3

c) $k - \frac{3k}{2} = \frac{2}{3} - \frac{5}{4}$

$-\frac{k}{2} = \frac{(8-15)}{12}$

$-k = -\frac{7}{6}$

$k = \frac{7}{6}$

3. Let the number be x

   According to the statement:

   $3x + 7 = 40$

   $x = \frac{(40-7)}{3} = \frac{33}{3} = 11$

4. Let the original price of the pen be x.

   Discount = 15

   Selling price =50

   $x - 15 = 50$

   $x = 50 + 15 = 65$

Learning Level Tracker

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Name of the School:	**UDISE:**
Block:	**District:**
Name of the Teacher:	**Assessment Date:**

Class: 8		Subject: Maths		
Roll No.	Name of the Student	Chapter: Linear Equations in One Variable		
		Level 1	Level 2	Level 3

Chapter 3 : Understanding Quadrilaterals

Activity 1 Secret Angle

35 mins

Instructions

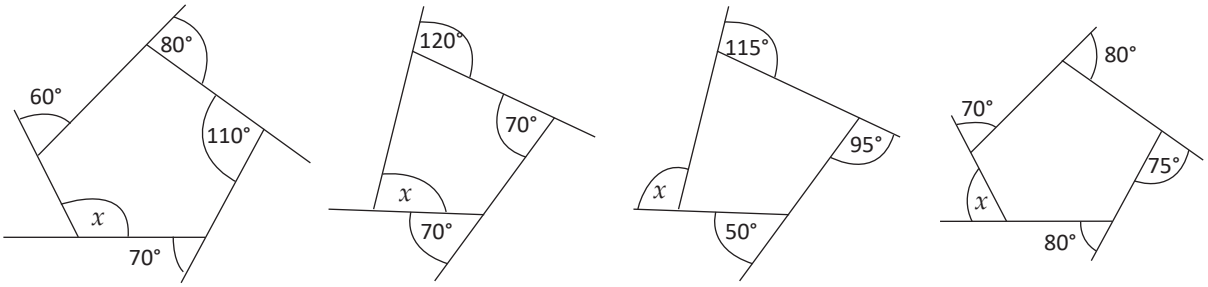
- Pair Up Students – Divide the class into pairs and provide each pair with a ruler, protractor, and paper. Assign one student as the drawer and the other as the checker.
- Instruct the drawer to draw any quadrilateral of their choice. Encourage them to create different types—square, rectangle, parallelogram, or irregular quadrilateral—to compare results.
- Ask the checker to use the protractor to carefully measure each of the four angles and record them. Emphasize the importance of accuracy.
- Have students work together to add the four measured angles. If the sum is not 360°, instruct them to double-check their measurements.
- To make it more challenging, ask each pair to repeat the activity with a different quadrilateral, but this time, they should swap roles—the previous checker now becomes the drawer, and vice versa.
- Before measuring, have students predict whether the angle sum of an irregular quadrilateral will still be 360°. Let them test their prediction by measuring and calculating again.
- Invite pairs to share their results and discuss if the angle sum was always 360°. Conclude by reinforcing the mathematical rule: The sum of the interior angles of any quadrilateral is always 360°!

Activity 2 Find the angle

35 mins

Instructions

- Draw the following figures in the blackboard.



- Instruct students to find the value of [x] in each figure. Encourage them to use their understanding of angle relationships, properties of triangles, or algebraic expressions to solve for [x].

- Highlight different methods that can be used to find the value of x, such as:
  - Sum of Exterior Angles: The exterior angles of any quadrilateral always add up to 360°, helping find unknown angles.
  - Interior-Exterior Relationship: Each interior and exterior angle pair sums to 180°, allowing one to be found if the other is known.
- Move around the classroom to assist students who need help. Guide them through the necessary steps, asking probing questions to help them think critically about their approach.
- Discuss the solutions as a class. Invite students to explain their reasoning, such as that can be used to find the value of [x].

Activity 3 Different Quadrilaterals

35 mins

Instructions

- Begin by organizing the students into pairs and provide each pair with sheets of paper and rulers. Instruct them to draw different types of quadrilaterals such as squares, rectangles, parallelograms, rhombuses, and trapeziums.
- Introduce a comparative table for quadrilateral properties. Explain that the students will fill in a table comparing different characteristics of their quadrilaterals. The table should include:
  - The number of sides
  - The number of vertices
  - The types of sides (equal, parallel)
  - The types of angles (right, acute, obtuse)
  - Whether the diagonals are equal or bisect each other
- Guide students through the activity. Ask them to carefully observe and measure their drawn quadrilaterals to complete the table accurately. Encourage them to use rulers to check side lengths and protractors to measure angles where needed.
- **Table For example:**

Quadrilateral	Number of Sides	Number of Vertices	Types of Sides	Types of Angles	Length of Diagonals
Square	4	4	All sides equal	All 90°	Equal diagonals
Rectangle	4	4	Opposite sides equal	All 90°	Equal diagonals
Parallelogram	4	4	Opposite sides equal & parallel	Opposite angles equal	Diagonals bisect each other
Rhombus	4	4	All sides equal	Opposite angles equal	Diagonals bisect at 90°
Trapezium	4	4	One pair of opposite sides parallel	Angles vary	Diagonals are not equal

- Invite students to share their observations, comparing the different properties of quadrilaterals. Encourage them to notice patterns, such as how diagonals behave differently in various shapes or how angles change in different quadrilaterals.
- Conclude by reinforcing key concepts. Summarize the properties of each quadrilateral, ensuring students understand the distinctions between them.

Assessment

35 mins

1. Which of the following is a property of a parallelogram?
   a) Opposite angles are equal
   b) All sides are equal
   c) Diagonals are equal
   d) All angles are right angles
2. What is the sum of the interior angles of a quadrilateral?
   a) 180°
   b) 360°
   c) 270°
   d) 720°
3. In a park, the boundary is a quadrilateral. Two opposite sides are parallel and equal, while the other two sides are unequal. Identify the type of quadrilateral the boundary forms and explain why.
4. In a quadrilateral ABCD, the angles are represented as 4x,3x+10°,2x+20°,and 5x-10°. Find the value of x and calculate all the angles.
5. In a rhombus, one of the angles is 120°. Find the other three angles.

Answer Key

1. a) Opposite angles are equal
2. b) 360°
3. Parallelogram – It has opposite sides that are equal and parallel, while the other two sides can be unequal.
4. x = 24°
   4x = 96°
   3x + 10° = 82°
   2x + 20° = 68°
   5x - 10° = 114°
5. 120°, 120°, 60°, 60

Learning Level Tracker

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Name of the School:	**UDISE:**
Block:	**District:**
Name of the Teacher:	**Assessment Date:**

Class: 8		Subject: Maths		
Roll No.	Name of the Student	Chapter: Understanding Quadrilaterals		
		Level 1	Level 2	Level 3

Chapter 4 : Data Handling

Activity 1 Bar and Pie

35 mins

Instructions

- Begin the activity by discussing the importance of a daily routine with students. Ask them to share common activities they do each day (e.g., studying, eating, playing, sleeping) and estimate how much time they spend on each.
- Ask students to sit in pairs and create a table listing their daily activities alongside the time spent on each.

Daily Activity	Time in minutes	Time in hours

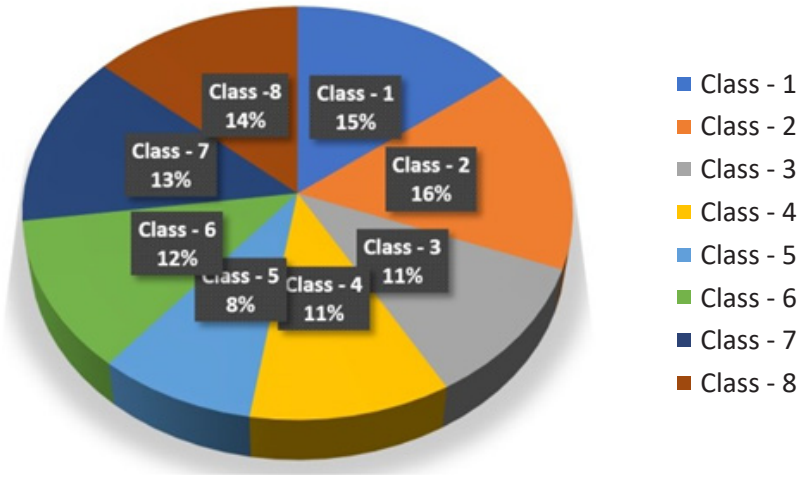
- Once the table is completed, instruct students to visually represent their data by creating:
  - o A bar graph to compare the time spent on different activities.
  - o A pie chart to show the proportion of time allocated to each activity.
- After completing their graphs, bring the class together for discussion and ask students to reflect on their daily schedules.
- Discuss what changes they would like to make and why (e.g., reducing screen time, increasing study time, or adding more physical activities) and conclude by emphasizing the importance of managing time effectively.

Activity 2 What does Pie say?

35 mins

Instructions

- Divide the class into 3-4 groups.
- Display the pie chart representing the number of students from Classes 1 to 8. Explain that the total number of students in the school is **295**.



- Ask each group to analyse the pie chart and answer the following questions:
  - What is the number of students in each class?
  - Which two classes have the same number of students?
  - Which class has the maximum number of students?
  - Which class has the least number of students?
- Encourage students to discuss their findings within their groups.

Activity 3 Toss and Roll

35 mins

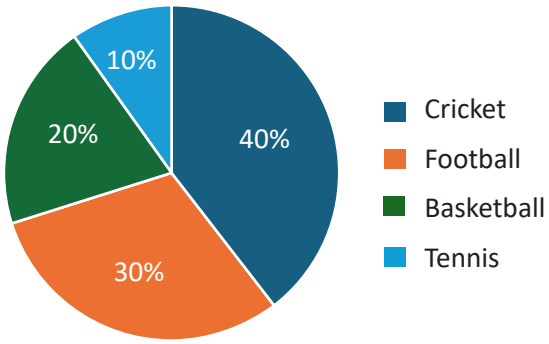
Instructions

- Ask students to sit in pairs.
- Distribute coins and dice to each pair.
- Instruct them to conduct the following experiments and list all possible outcomes:
  - Toss one coin.
  - Toss two coins together.
  - Roll one die.
  - Roll two dice together.
  - Toss one coin and roll one die.
- Once all pairs complete the experiments, bring the class together for a discussion and encourage students to compare their results, identify patterns, and discuss the concept of probability based on their findings.

Assessment

35 mins

1. Look at the pie chart below, which shows the distribution of favorite sports among a group of students.



Now answer the following questions:

a. What percentage of students like Football?

b. If there are 100 students in total, how many students like Basketball?

c. How many students like Cricket?

d. What fraction of the students like Tennis?

2. The following table shows the marks obtained by a student in 5 different subjects:

Subject	Marks
Maths	80
Science	70
English	90
History	60
Geography	50

Task: Draw a pie chart to represent the percentage of marks obtained in each subject. (Use a protractor to measure angles and ensure the total angle is 360°.)

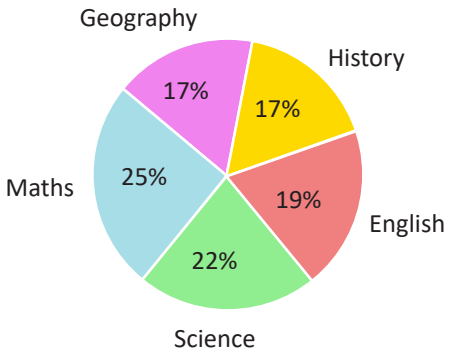
3. The table below shows the sales of mobile phones by different brands in a month:

Brand	Number of Phones Sold
Brand A	1000
Brand B	1200
Brand C	800
Brand D	950
Brand E	1050

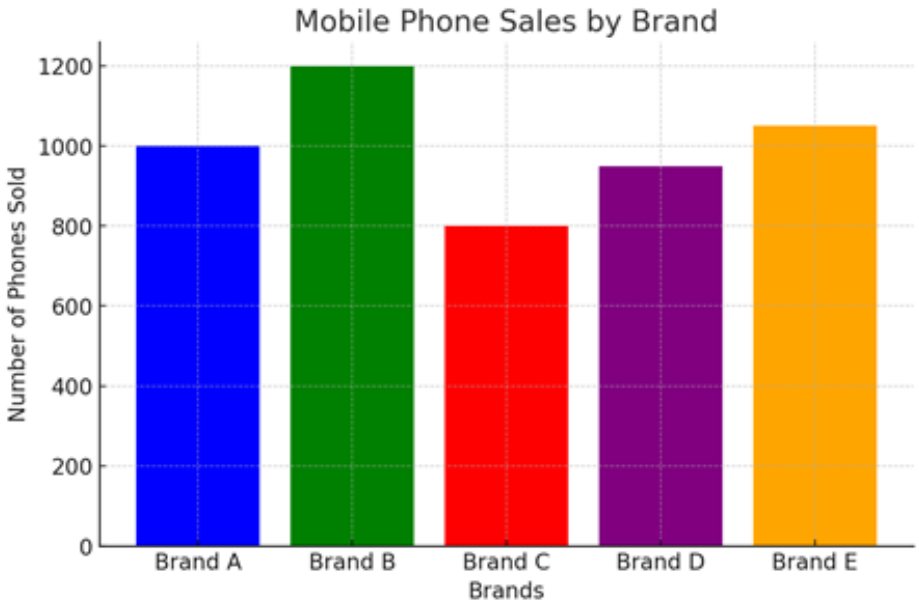
Task: Draw a bar graph to represent the number of phones sold by each brand.

Answer Key

1. a. 30%
   b. 20
   c. 40
   d. 1/10
2. Percentage Distribution of Marks in Different Subjects



Subject	Marks	Angle Calculation	Angle
Maths	90	(90/300) × 360	108°
Science	75	(75/300) × 360	90°
English	60	(60/300) × 360	72°
History	45	(45/300) × 360	54°
Geography	30	(30/300) × 360	36°



Learning Level Tracker

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Level 1: Not able to solve problems and having difficulty comprehending the problem

Level 2: Solves most of the problems with external support

Level 3: Solves problems independently

Name of the School:	**UDISE:**
Block:	**District:**
Name of the Teacher:	**Assessment Date:**

Class: 8		Subject: Maths		
Roll No.	Name of the Student	Chapter: Data Handling		
		Level 1	Level 2	Level 3

Chapter 5 : Square and Square Roots

Activity 1 Square Hopscotch

35 mins

Instructions

- Divide the class into small groups of 3-4 and have each group take turns playing the game.
- Draw large boxes on the ground and write the squares of numbers from 1 to 20 inside them.
- Gather one group of students in a line and explain the rules of the game. Only one student will step forward at a time.
- Call out a number between 1 and 20. The first student in line must quickly find and jump into the box containing the square of that number.
- For example, if you call out "9," the student should jump into the box labelled "81."
- If the student jumps into the wrong box or steps into an incorrect box, they go to the end of the line, and the next student gets a turn.
- Continue the activity until all numbers have been called out. Repeat with the next group, ensuring everyone participates.

Activity 2 Roots of the Square

35 mins

Instructions

- Pair up the students and ask each of them to secretly choose a number between 1 and 100.
- Instruct them to square their chosen number and give only the squared result to their partner.
- The partner must determine the square root of the given number using either the prime factorization method or the long division method.
- Once the square root is found, the student who originally chose the number verifies the answer.
- Encourage students to discuss their methods and check their calculations.
- Assist those who struggle to ensure everyone understands the concept of finding square roots.

Activity 3 Everyday Squares and Roots

35 mins

Instructions

- Ask students to sit in pairs.
- Write the following problems on slips of paper and place them in a container.
  - **Library:** A library has 625 books. The librarian wants to arrange them in square shelves where the number of rows equals the number of columns. How many rows and columns are required? If the library gets 50 more books, can the books still be arranged in a perfect square?
  - **School Seating:** A school has 900 students for an event. They need to sit in a square arrangement (rows = columns). How many students can be arranged this way? If 80 students are absent, how many will remain unseated?
  - **Square Garden:** A square garden has an area of 784 square meters.

    What is the length of each side of the garden? If the garden is expanded to 1,024 square meters, how much will each side increase?
  - **Chocolate Packing:** A company produces 361 chocolates and wants to pack them in square boxes (rows = columns). How many chocolates can be packed in one box? If they produce 50 more chocolates, can they still fit into square boxes?
  - **Tiling a Floor:** A room needs square tiles to cover the floor, and each tile has an area of 1 square meter. The floor is a perfect square with an area of 441 square meters. How many tiles are needed?

    If 60 tiles break, how many more tiles are required to complete the floor?
  - **Fencing Land:** A farmer has 576 square meters of land to fence for his animals in a perfect square. What will be the length of each side? If he increases the fenced area to 729 square meters, how much longer will each side become?
  - **Plot Division:** A plot of land with an area of 961 square meters needs to be divided into square sections. What is the side length of each square section? If the owner increases the area by 200 square meters, can the plot still be divided into perfect square sections?
- Once all pairs have completed their problems, discuss the solutions as a class.
- Allow students to explain their approach and reasoning for solving each problem.

Assessment

35 mins

1. Find the square root of 169.
2. Write the first five perfect squares.
3. If the square of a number is 196, find the number.
4. Find the square root of 225 by long division method.
5. If the square of a number is 625, what is the number? Also, verify your answer by squaring it.
6. The area of a square plot of land is 14400 square meters. How long is each side of the square? If a person walks around the plot, what is the total distance walked?
7. The area of a square playground is 784 square meters. Find the side of the square and the perimeter of the playground.

Answer Key

1. 13
2. 1, 4, 9, 16, 25
3. 14
4. 15
5. 25 (Verification: 25 × 25 = 625)
6. 120 meters (Side length), 480 meters (Perimeter/Total distance walked)
7. 28 meters (Side length), 112 meters (Perimeter)

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Name of the School:	**UDISE:**
Block:	**District:**
Name of the Teacher:	**Assessment Date:**

Class: 8		Subject: Maths		
Roll No.	Name of the Student	Chapter: Square and Square Roots		
		Level 1	Level 2	Level 3

Chapter 6 : Cubes and Cube Roots

Activity 1 Cube Hopscotch

35 mins

Instructions

- Use chalk to draw 30 large boxes on the ground. Inside each box, write a number. Include all cube numbers from 1^3 to 20^3 (e.g., 1, 8, 27, ..., 8000), some square numbers (like 4, 25, 49, 121, etc.), and some numbers that are neither squares nor cubes (e.g., 18, 45, 70).
- Call out a number between 1 and 20. Ask students to must mentally calculate the cube of that number and jump into the box with the correct cube. For example, if you call out "9," the correct jump would be to 729.
- Since the grid includes square and non-cube numbers, students must pay close attention and avoid false traps. If a student jumps into the wrong box (e.g., a square or random number), they are out for that round.
- Conclude the activity by reviewing all the correct cube numbers from 1^3 to 20^3. Ask students how they distinguished cubes from squares and other numbers. End with a quick explanation of why cube numbers are important, such as in volume calculations or real-world applications involving 3D space.

Activity 2 Cubes and Consecutives

35 mins

Instructions

- Create 10 slips of paper or chart strips, each containing a group of consecutive odd numbers and write the corresponding cube number (e.g. 1^3, 2^3, 3^3, etc.) on a separate slip and keep these in a separate pile.

Odd Numbers
1
3, 5
7, 9 ,11
13 , 15 , 17 , 19
21 , 23 , 25 , 27 , 29
31 , 33 , 35 , 37 , 39 , 41
43 , 45 , 47 , 49 , 51 , 53 , 55
57 , 59 , 61 , 63 , 65 , 67 , 69 , 71
73 , 75 , 77 , 79 , 81 , 83 , 85 , 87 , 89
91 , 93 , 95 , 97 , 99 , 101 , 103 , 105 , 107 , 109

Cube Numbers
1
8
27
64
125
216
343
512
729
1000

- Divide the class into small groups of 3–4 students each and hand each group one Odd Number Slip
- Instruct students to add the numbers as a team and calculate the sum.
- Once a group has added up the consecutive odd numbers on their slip and found the sum (e.g., 13 + 15 + 17 + 19 = 64), ask them to go to the Cube Answer Slip pile (Set B) and carefully search for the matching cube expression (e.g., "$64 = 4^3$").
- As the group finds what they think is the correct Cube Answer Slip, check if the sum of the odd numbers matches the cube expression correctly (e.g., $64 = 4^3$).
- If the answer is incorrect, return the slips to the group and ask them to recalculate their sum or check whether the cube they selected matches that sum.
- Once all groups have completed the task and had their matches verified, bring the class together to discuss the pattern observed — that the sum of consecutive odd numbers starting from 1 forms perfect cubes — and reinforce how patterns help us understand mathematical concepts more deeply.

Activity 3 Making Perfect Cubes

35 mins

Instructions

- Divide the students into 3–4 groups to encourage teamwork and collaboration.
- Write a mix of cube and non-cube numbers on the board, such as:

  243, 300, 375, 450, 1024, 1500, 2000, 2500, 3072.
- Ask each group to pick one number from the list.
- Instruct the groups to determine whether their chosen number is a perfect cube by performing prime factorisation and checking whether all prime factors occur in multiples of three.
  - Example: For 243 → prime factorisation is $3 \times 3 \times 3 \times 3 \times 3$.
- If a number is not a perfect cube, ask the group to find the smallest number by which it must be multiplied or divided to convert it into a perfect cube.
- Guide the discussion to ensure students understand that a number which is not a perfect cube can be adjusted by multiplying or dividing by specific factors to make it a perfect cube.
- Repeat the process for other numbers and have the groups share their findings with the class.

Assessment

35 mins

1. What is the cube root of 729?
2. Write the first five perfect cubes.
3. If the cube of a number is 512, find the number.
4. Find the cube root of 19683 by prime factorisation.
5. Find the smallest number by which 675 must be multiplied to make it a perfect cube.
6. The cube of a number is 5832. Find the number using prime factorisation.
7. A student calculates the cube of a number and gets 91125. Find the cube root of this number.

Answer Key

1. Cube root of 729:
   (729 = 3 × 3 × 3 × 3 × 3 × 3)
   Group the factors into sets of three: (3 × 3 × 3) × (3 × 3 × 3)
   Cube root = 9
2. First five perfect cubes:
   ($1^3 = 1$)
   ($2^3 = 8$)
   ($3^3 = 27$)
   ($4^3 = 64$)
   ($5^3 = 125$)
3. Find the cube root:
   Prime factorisation: (512 = 2 × 2 × 2 × 2 × 2 × 2 × 2 × 2 × 2)
   Group into sets of three: (2 × 2 × 2) × (2 × 2 × 2) × (2 × 2 × 2)
   Cube root = 8
4. Cube root of 19683 by prime factorisation:
   Find the prime factorisation: (19683 = 3 × 3 × 3 × 3 × 3 × 3 × 3 × 3 × 3)
   Group the factors into sets of three: (3 × 3 × 3) × (3 × 3 × 3) × (3 × 3 × 3)
   Cube root = 27
5. Find the smallest number by which 675 must be multiplied to make it a perfect cube.
   Prime factorisation of 675:
   (675 = 3 × 3 × 3 × 5 × 5)
   To make it a perfect cube, we need three of each prime factor.
   Since there are only two factors of 5, we need one more 5.
   Multiply 675 × 5 = 3375, which is a perfect cube.
   Answer: 5

6. Prime factorisation of 5832: (5832 = 2 × 2 × 2 × 3 × 3 × 3 × 3 × 3 × 3)

   Grouping into sets of three:

   ((2 × 2 × 2) × (3 × 3 × 3) × (3 × 3 × 3))

   Cube root = 18

7. A student calculates the cube of a number and gets 91125. Find the cube root of this number.

   Prime factorisation of 91125:

   (91125 = 3 × 3 × 3 × 5 × 5 × 5 × 3 × 3 × 3)

   Grouping into sets of three:

   ((3 × 3 × 3) × (5 × 5 × 5) × (3 × 3 × 3))

   Cube root = 45

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Name of the School:	**UDISE:**
Block:	**District:**
Name of the Teacher:	**Assessment Date:**

Class: 8		Subject: Maths		
Roll No.	Name of the Student	Chapter: Cubes and Cube Roots		
		Level 1	Level 2	Level 3

Chapter 7 : Comparing Quantities

Activity 1 Snack Elections

35 mins

Instructions

- Create a classroom election to vote for the best snack option: Chips, Cookies, or Fruit. Explain to the students that they will act as "voters."
- Provide the voters with a paper slip and instruct them to write their choice (Chips, Cookies, or Fruit) on the slip and drop it into the ballot box.
- Once all votes are cast, tally the votes aloud and write the total number of votes for each option on the board. For example:
  - Chips: 8
  - Cookies: 12
  - Fruit: 10
- Continue by asking students to calculate:
  - Question 1: "What's the ratio of Chips voters to Cookies voters?"
    E.g., Answer: 8:12, which simplifies to 2:3.
  - Question 2: "If 5 more students voted for Chips, what's the new ratio of Chips to Fruit?"
    E.g., Answer: 13:10 (new total for Chips is 13, Fruit remains 10).
- Calculate the total number of votes (e.g., 30) and ask students to find the percentages of the votes for each snack and if time permits, guide the students to draw a simple pie chart with rough estimates. Label each section to show percentages, for example, 40% for Cookies (~144°).
- Conclude by guiding the students to understand that ratios and percentages not only helps in making comparisons and solving mathematical problems, but it also plays a crucial role in everyday life, such as understanding election results, market trends, and even managing personal finances.

Activity 2 Smart Buying

35 mins

Instructions

- Divide students into groups of 3 or 4 and explain that they will act as "buyers" with a fictional budget of ₹10,000 each.
- Present a list of fictional products with their original prices, such as:
  - Bicycle: ₹5,000
  - Jacket: ₹1,500
  - Smartphone: ₹12,000

- Book Set: ₹750
- Bag: ₹1250
- Study Desk: ₹7500

- Prepare a set of discount cards with offers like:
  - Flat 40% off
  - 30% + 10% off
  - 60% + 15% off
  - Flat 55% off
- Ask each group to randomly pick a discount card and select a product they'd like to "buy." Have them calculate the final price after applying the discount and check if it fits their budget.
- Let each group decide how to spend their ₹10,000. They can buy multiple products if their calculations fit the budget.
- At the end of the activity, have each group present their "purchases" and explain why they chose the items and discounts they chose.
- Conclude by discussing how discounts work, focusing on the math behind percentage calculations, sequential discounts and the advantage of analysing offers before buying.

Activity 3 Simple and Compound Interest

35 mins

Instructions

- Explain to the class that they will be working with two types of interest:
  - Simple Interest (SI): Interest which is calculated only on the original amount (principal) for each year. It grows at a constant rate.
  - Compound Interest (CI): Interest which is calculated on both the original amount and the interest already earned. It grows exponentially over time
- Split the class into two groups:
  - Group 1 will track Bank SI (Simple Interest).
  - Group 2 will track Bank CI (Compound Interest).
- Explain to the groups that they will start the game with ₹100 and will calculate interest over three years.
- Calculations for Year 1:
  - Ask students to calculate 10% of ₹100 for both banks.
  - Instruct them to add the interest to the principal and note the total for each bank:
  - Bank SI: ₹100 + ₹10 = ₹110
  - Bank CI: ₹100 + ₹10 = ₹110
  - Highlight that in the first year, both banks give the same total.
- Calculations for Year 2
  - Guide Group 1 to compute 10% of the original ₹100 for Bank SI, which remains ₹10.
  - Ask Group 2 to calculate 10% of ₹110 (the previous year's total) for Bank CI, which is ₹11.
  - Now, Bank SI: ₹110 + ₹10 = ₹120
  - Bank CI: ₹110 + ₹11 = ₹121

- Emphasise that CI now slightly exceeds SI due to interest on the previous year's amount.
- Calculations for Year 3
  - Instruct students to add ₹10 again for Bank SI, since the interest remains fixed on the original ₹100.
  - For Bank CI, have them compute 10% of ₹121, which is ₹12.10.
  - Students should then record the new totals:
  - Bank SI: ₹120 + ₹10 = ₹130
  - Bank CI: ₹121 + ₹12.10 = ₹133.10
- Conclude this step by pointing out how the CI amount increases more quickly over time, compared to the steady growth of SI.
- After calculating the totals for both Bank SI and Bank CI over 3 years, summarise the differences with your students. Emphasise that:
  - Simple Interest (SI) adds a fixed amount each year, leading to linear growth.
  - Compound Interest (CI) adds interest on both the principal and the accumulated interest, resulting in exponential growth over time.
- Discuss how each method serves different purposes in real life. Explain that while SI might be simpler and used for short-term loans or fixed payment plans, CI is more beneficial for long-term savings and investments because of its accelerating effect. This understanding aids in making informed financial decisions based on the situation at hand.

Assessment

35 mins

1. If a product is available at a discount of 20% and its original price is Rs. 500, what is the discount amount?
   a) Rs. 50
   b) Rs. 100
   c) Rs. 150
   d) Rs. 200
2. A person bought an item for Rs. 800 and sold it for Rs. 960. What is the profit percentage?
   a) 15%
   b) 18%
   c) 20%
   d) 25%
3. A shopkeeper buys an item for Rs. 400 and sells it for Rs. 500. Find the profit percentage.
4. A car was bought for Rs. 3,50,000. After one year, its value decreased by 12%. What is the value of the car after one year?

Answer Key

1. 20% of Rs. 500 = (20/100) × 500 = Rs. 100
   Answer: b) Rs. 100
2. Cost Price = Rs. 800, Selling Price = Rs. 960
   Profit = 960 - 800 = Rs. 160
   Profit % = $\left(\frac{160}{800}\right) \times 100 = 20\%$
   Answer: c) 20%
3. Cost Price = Rs. 400, Selling Price = Rs. 500
   Profit = 500 - 400 = Rs. 100
   Profit % = $\left(\frac{100}{400}\right) \times 100 = 25\%$
   Answer: 25%
4. Original value = Rs. 3,50,000
   Depreciation = 12% of 3,50,000 = $\left(\frac{12}{100}\right) \times 3,50,000$ = Rs. 42,000
   Value after one year = 3,50,000 - 42,000 = Rs. 3,08,000
   Answer: Rs. 3,08,000

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Class: 8		Subject: Maths		
Roll No.	Name of the Student	Chapter: Comparing Quantities		
		Level 1	Level 2	Level 3

Chapter 8 : Algebraic Expressions and Identities

Activity 1 Addition using tiles

35 mins

Instructions

- Divide students into 4-5 groups.
- Before starting the activity, arrange some cut-outs of chart papers. Take green and red chart papers where green for positive and red for negative.
- Now ask each group to bring some green and red chart papers and a scissor.
- Instruct them to cut some long rectangle shapes from both coloured chart papers and small square shapes from both coloured chart papers. Long rectangle shapes mean Variable and Small square shapes mean Constant.
- Again, show the physical representation of the shapes:

  x → green rectangle

  –x → red rectangle

  1 → green square

  –1 → red square
- Now write an addition on the board. For example: Add 2x+3 and x-2
- Encourage each group to set up the first expression as 2 green rectangles and 3 green squares. Then set up the second expression as 1 green rectangle and 2 red squares.
- Now ask them to combine all the tiles- Rectangles: 2+1=3x and Squares: 3-2=1
- Ask them to write and verify the answer with classroom.
- Repeat this method for another set of addition from easy to complex.

Activity 2 Multiplication using grid method

35 mins

Instructions

- Write a simple algebraic multiplication problem on the board. For example: Multiply (x+2) and (x+5).
- Ask students to put x and 2 from (x+2) across the row and x and x and 5 from (x+5) across the column.

	X	2
X		
5		

- Ask students to multiply the items where the row and column meets.

	X	2
X	X^2	2x
5	5x	10

- Now ask the students to add the like terms and keep the single or unlike terms as it is from the red coloured portion.

  The answer will be: $X^2+5x+2x+10 = x^2+7x+10$
- Repeat this activity using different algebraic examples from easy to complex level.

Activity 3 Math your answers

35 mins

Instructions

- Divide classroom into two teams.
- Prepare some paper chits labelling with some problems on addition, subtraction & multiplication and answers. Keep the answer chits in a separate container and the problems in another container.
- Distribute each group some paper chits of problems as well answers.
- Now ask the group to match their problems with the answer chits and write down the solution in their copies.
- Share the results with the classroom.
- Each correct answer will get 1 point and based on that announce the winner.

Assessment

35 mins

1. Which of the following is the correct expansion of $(x+3)(x-5)$
   a) $x^2-2x-15$
   b) $x^2-15x+3$
   c) $x^2-2x+15$
   d) x^2-x-15
2. Expand and simplify: $(x+4)(x-3)$
3. Simplify the expression: $5x^2-3x+2-3x^2+4x-1$
4. The perimeter of a rectangle is expressed as 2(l+b), where l is the length and b is the breadth. If the length is $3x+2$ and the breadth is $2x+4$, find the perimeter of the rectangle in terms of x.
5. A shopkeeper sells two types of T-shirts, one costing $x+100$ rupees and the other costing $x+50$ rupees. If the shopkeeper sells 5 of the first type and 3 of the second type, write an expression for the total money earned and simplify it.

Answer Key

1. Correct Expansion of $(x + 3)(x – 5)$
   $(x + 3)(x - 5) = x^2 - 5x + 3x - 15 = x^2 - 2x - 15$
   Answer: (a) $x^2 - 2x - 15$
2. Expand and Simplify: $(x + 4)(x – 3)$
   $(x + 4)(x - 3) = x^2 - 3x + 4x - 12 = x^2 + x - 12$
   Answer: $x^2 + x - 12$
3. Simplify: $5x^2 - 3x + 2 - 3x^2 + 4x - 1$
   Group like terms:
   $(5x^2 - 3x^2) + (-3x + 4x) + (2 - 1) = 2x^2 + x + 1$
4. Perimeter of a Rectangle
   Length = 3x + 2, Breadth = 2x + 4
   Procedure:
   $P = 2(l + b) = 2((3x + 2) + (2x + 4)) = 2(5x + 6) = 10x + 12$
5. Total Money Earned by Shopkeeper
   First type T-shirt: x + 100, sold = 5
   Second type T-shirt: x + 50, sold = 3
   5(x + 100) = 5x + 500
   3(x + 50) = 3x + 150
   Total = 5x + 500 + 3x + 150 = 8x + 650

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Name of the School:	**UDISE:**
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Class: 8		Subject: Maths		
Roll No.	Name of the Student	Chapter: Algebraic Expressions and Identities		
		Level 1	Level 2	Level 3

Chapter 9 : Mensuration

Activity 1 Drawing and Understanding in 3D

35 mins

Instructions

- Pair up the students and provide each pair with a familiar 3D object, such as a cube, cylinder, cone, or sphere. One student in the pair will be the Drawer, and the other will be the Counter.
  - The Drawer selects a view—front, top, or side—and draws how the object looks from that perspective on paper. The students can rotate roles after each drawing if time permits.
  - The Counter observes the 3D object carefully and counts the number of vertices (V), edges (E), and faces (F). They should note these details as their partner draws.
- Guide students to draw keeping the following in mind:
  - For a cube, the top, front, and side views are all squares. Depth may be shown using overlapping lines or parallelograms.
  - For a cylinder, the top view is a circle; front and side views appear as rectangles with rounded ends.
  - For a cone, the top view is a circle; the front and side views are triangles.
  - For a sphere, all views are circles; shading can help suggest the roundness.
- Once both students complete their tasks, they should review each other's work—checking the accuracy of both the drawing and the count.
- Draw the following table on the board for each pair to fill in:

Shape	Vertices (V)	Edges (E)	Faces (F)
Cube			
Cuboid			
Pyramid			
Sphere			
Cone			

- Verify the answers and the drawing, encouraging students to collaborate, discuss, and double-check their answers.
- Ask students to think of real-world examples of each 3D shape, such as boxes, traffic cones, balls, or rooftops and conclude by explaining how this skill is useful in practical fields such as engineering, architecture, product design, and construction

Activity 2 Cubes as Squares

35 mins

Instructions

- Ask students to sit in pairs and hand each pair a piece of grid paper and show them a cube-shaped object (like a dice or box) for reference.
- Explain the concept visually, discuss how a cube has 6 identical square faces and that the area of one face is side × side. Thus, to find the total surface area, we calculate the area of one face and multiply it by 6.
- Ask each pair to cut out 6 equal-sized squares from grid paper, where each square should represent one face of the cube. If possible, allow them to tape it into a cube to see how the faces connect.
- Now, put it to use and provide students with a side length of the cube, for example: 4 cm.
  - Instruct them to calculate the area of one face using the formula: side × side ($4 \times 4 = 16$ cm²).
  - Remind students that a cube has 6 identical square faces.
  - Ask them to multiply the area of one face by 6 to get the total surface area ($6 \times 16 = 96$ cm²).
- Write different side lengths (e.g., 3 cm, 5 cm, 6.5 cm) on slips of paper and let each pair pick a slip and calculate the surface area of a cube with that side length.
- Verify the answers of each group and guide students who are struggling, until all groups have the correct answer.
- Conclude with a class discussion on how understanding surface area is useful in real-life scenarios such as packaging, wrapping gifts, or designing containers.

Activity 3 Dimensions and Volumes

35 mins

Instructions

- Pair students up and ask each pair to identify 3D shapes like cubes, cuboids, and cylinders within the classroom environment. Examples could include:
  - A cube-shaped dice or storage box.
  - A cuboid-shaped table or chalkboard eraser.
  - A cylinder-shaped pencil holder or water bottle.
- Encourage them to select one of these classroom items and measure its dimensions—length, breadth, height, or radius as applicable. Using the appropriate formulas:
  - Cube: ($V = l^3$)
  - Cuboid: ($V = l \times b \times h$)
  - Cylinder: ($V = \pi r^2 h$)
- Each pair measures the dimensions of the assigned shapes (length, breadth, height, or radius). They calculate the volume using the appropriate formulas and record their results in their notebooks.
- Once all groups have completed their work, bring the class together to discuss their findings. Highlight how the measurements and formulas connect to their applications in our surroundings, such as storage, packing, or manufacturing. Encourage students to share insights on why volumes are measured in cubic units.

Assessment

35 mins

1. The volume of a cube with side length 4 cm is:
   a) 16 cm^3
   b) 64 cm^3
   c) 24 cm^3
   d) 12 cm^3
2. The area of a triangle is calculated as:
   a) $\frac{1}{2} \times base \times height$
   b) $base \times height$
   c) $side^2$
   d) πr^2
3. The total surface area of a cube with side length 5 cm is:
   a) 150 cm^2
   b) 100 cm^2
   c) 25 cm^2
   d) 30 cm^2
4. Find the area of a right-angled triangle with base 15 cm and height 20 cm.
5. A cylinder has a radius of 5 cm and height 10 cm. Find the total surface area of the cylinder. (Use π=3.14)
6. The internal measures of a cuboidal room are 12 m × 8 m × 4 m. Find the total cost of whitewashing all four walls of a room, if the cost of whitewashing is 5 per m2. What will be the cost of whitewashing if the ceiling of the room is also whitewashed.
7. The radius of a circle is 6 cm. Find the circumference and area of the circle.

Answer Key

1. The volume of a cube with side length 4 cm
   Formula: Volume = side³
   Calculation: $4 \times 4 \times 4 = 64$ cm³
   Answer: (b) 64 cm³
2. The area of a triangle is calculated as:
   Answer: (a) $\frac{1}{2} \times$ base × height
3. Total surface area of a cube with side length 5 cm
   Formula: Total Surface Area = 6 × side²
   Calculation: $6 \times (5 \times 5) = 6 \times 25 = 150$ cm²
   Answer: (a) 150 cm²
4. Area of a right-angled triangle with base 15 cm and height 20 cm
   Formula: Area = $\frac{1}{2} \times$ base × height
   Calculation: $\frac{1}{2} \times 15 \times 20 = 150$ cm²
5. Total surface area of a cylinder (radius = 5 cm, height = 10 cm, $\pi = 3.14$)
   Formula: Total Surface Area = $2\pi r(h + r)$
   Calculation: $2 \times 3.14 \times 5 \times (10 + 5) = 2 \times 3.14 \times 5 \times 15 = 471$ cm²
6. Room dimensions = 12 m × 8 m × 4 m
   Cost of whitewashing = ₹5 per m²
   Cost of whitewashing four walls:
   Area = 2 × height × (length + breadth)
   $= 2 \times 4 \times (12 + 8) = 160$ m²
   Cost = $160 \times 5 =$ ₹800
   Cost including ceiling:
   Ceiling area = $12 \times 8 = 96$ m²
   Extra cost = $96 \times 5 =$ ₹480
   Total cost = ₹800 + ₹480 = ₹1280
7. Radius of circle = 6 cm — Find circumference and area
   Formulas:
   Circumference = $2\pi r = 2 \times 3.14 \times 6 = 37.68$ cm
   Area = $\pi r^2 = 3.14 \times 6 \times 6 = 113.04$ cm²

Learning Level Tracker

Keep a record of unit assessment results in the tracker.

As you conduct assessments based on the activities suggested, put a tick mark as per the following:

Level 1: Not able to solve problems and having difficulty comprehending the problem

Level 2: Solves most of the problems with external support

Level 3: Solves problems independently

Name of the School:	**UDISE:**
Block:	**District:**
Name of the Teacher:	**Assessment Date:**

Class: 8		Subject: Maths		
Roll No.	Name of the Student	Chapter: Mensuration		
		Level 1	Level 2	Level 3

Chapter 10 : Exponents and Powers

Activity 1 Powers and Bases

35 mins

Instructions

- Divide the class into small teams of 3–4 students.
- Write the following expression on the board:
  - $2 \times 2 \times 2 \times 2 = ?$
  - Ask the class how many times is two multiplied here. Since the answer is 4, then write: $2^4 = 16$
- Add that, in the expression 2^4, the base is 2, which is the number being multiplied, and the power or exponent is 4, indicating that the base (2) is used as a factor 4 times in the multiplication ($2 \times 2 \times 2 \times 2$).
- Explain that as the exponent increases, the value grows rapidly because the exponent acts as a "repeat multiplier," increasing the number of times the base is multiplied.
- Divide the class into teams of 3 or 4 and write the following problems on cards:
  - Convert to Exponent Form:
    Write $4 \times 4 \times 4 \times 4$ in exponent form.
    Write $7 \times 7 \times 7 \times 7 \times 7$ in exponent form.
    Express $2 \times 2 \times 2 \times 2 \times 2 \times 2$ in exponent form.
  - Evaluate Exponent Expressions:
    What is the value of 3^3?
    What is the value of 5^2?
    What is the value of 4^4?
    What is the value of 10^3?
  - Compare Exponents:
    Which is greater: 6^2 or 3^3?
    Which is greater: 2^6 or 3^5?
    Which is greater: 5^4 or 4^5?
- Provide each team with a problem card and encourage each team to work together to solve the problems on their "Power Puzzle Card."
- After the team has solved all the problems, they will pass their card to another team for review. If the second team finds the answers correct, the first team earns 1 point.
- After a few rounds of card exchange, reinforce the concept:
  - a^2 means $a \times a$ (explaining that exponent 2 represents the number being multiplied by itself once).
  - a^3 means $a \times a \times a$ (explaining that exponent 3 represents the number being multiplied by itself twice).
  - a^4 means $a \times a \times a \times a$ (explaining that exponent 4 represents the number being multiplied by itself three times).
- Conclude by discussing that that the exponent form simplifies repeated multiplication by representing it concisely (e.g., $2 \times 2 \times 2$ as 2^3), making calculations easier, and to compare different exponents, we calculate their values (e.g., $2^3 = 8$ and $3^2 = 9$), allowing direct comparison of results.

Activity 2 Seekers and Keepers

35 mins

Instructions

- Prepare two sets of cards with one set containing expressions and the other containing corresponding simplified form:

Expression	Simplified
$x^4 \times x$	x^5
$y^6 \div y^2$	y^4
$(3^2)^2$	3^4
$(2a)^3$	$2^3 \times a^3$
$(5b)^0$	1
$a^5 \times b^5$	$(ab)^5$
$(x \div y)^2$	$x^2 \div y^2$
$(4x^3)^2$	$16 \times x^6$
$m^7 \div m^4$	m^3
$(z^2 \times z^3)^2$	z^{10}
$10^3 \times 10^2$	10^5

- Divide the class into two and assign each group the roles of:
  - Power Seekers who must find their matching Solution Keeper
  - Solution Keepers who hold the answers
- Shuffle and place all cards face up in two piles and ask the seekers and keepers to pick up cards from their respective piles.
- Ask the Seekers to walk around the room, and search for their matching Solution Keeper.
- Once a match is found, both students explain which exponent law they used. Verify the match and explanation.
- After one round, swap roles and reshuffle cards for continued practice.
- To wrap up, gather the class and highlight how using exponent laws helps simplify complex expressions quickly and accurately, making math faster, easier, and more fun to work with in real-life problem-solving.

Activity 3 Simplifying Large Numbers

35 mins

Instructions

- Prepare 3–4 sets of exponent law question slips (write them on small cards or paper).
- Each set should include different types of problems applying the laws of exponents

Problem	Law Applied
$7^3 \times 7^2$	Product of Powers (add exponents)
$9^5 \div 9^3$	Quotient of Powers (subtract exponents)
$(2^2)^4$	Power of a Power (multiply exponents)
$(a^3)(a^2)$	Product of Powers
$(b^6)/(b^4)$	Quotient of Powers
$(5 \times 4)^2$	Power of a Product
$(6/3)^3$	Power of a Quotient
8^0	Zero Exponent
$(x^2)^3$	Power of a Power
$3^2 \times 5^2$	Product with Different Bases
$(y^4 \times z^4)$	Apply exponent to both bases
$(10^2) \times (10^3)$	Product of Powers
$(m^5)/(m^2)$	Quotient of Powers
$(2^3)^2$	Power of a Power
$(p \times q)^3$	Power of a Product
$(a^2b^3)^2$	Power to a Product (apply to both)
$(2^4 \times 2^0) \div 2^2$	Combined laws (product + quotient)
$(x^0 + y^0)$	Zero Exponent + Simplification

- Divide the class into teams of 3-4 and have each team stand in a single line at the starting point on one side of the classroom.
- Explain the rules:
  - On the signal “Go!”, the first student from each team runs to the question table.
  - They pick one slip, solve the problem immediately on their notebook, and bring it to for checking.
  - If the answer is correct, the student must run back to tag the next teammate.
  - If incorrect, the teacher sends the student back to revise their answer before they can tag the next person.
  - The relay continues until every team member has completed one correct problem. The team that finishes first with all correct answers wins.
- While the game is underway, stand at the table with the slips to check answers immediately and guide students who struggle after a second attempt. Keep the atmosphere encouraging and ensure all students participate actively.
- Conclude by asking students to share which laws they found easiest or hardest and how identifying the correct law helped solve problems quickly.

Assessment

35 mins

1. Simplify:
   $2^3 \times 2^4 =$ _____
   a) 27
   b) 212
   c) 8
   d) 128
2. Find the value of the following exponential expressions:
   i. $(5^3)^2 =$ _____
   ii. $2^4 \times 2^2 =$ _____
   iii. $(3^2)^3 = 3^6 =$ _____
   iv. $4^2 \times 4^3 =$ _____
3. Express the following in exponential form:
   i. $5 \times 5 \times 5 \times 5 =$ _____
   ii. $(-3) \times (-3) \times (-3) =$ _____
4. Write the following numbers in standard form:
   i) 700,000 = _____
   ii) 9,800,000 = _____
   iii) 425,000,000 = _____
   iv) 320,000 = _____

Answer Key

1. Simplify:
   1. 23 × 24
   2. 23 × 24 = 2(3+4) = 27 = 128 (d).
2. Find the value of the following exponential expressions:
   a. $(5^3)^2$
      $(5^3)^2 = 5(3\times2) = 56 = 15625.$
   b. 24 × 22
      2(4+2) = 26 = 64.
   c. (32)3
      = 3(2×3) = 36 = 729.
   d. 42× 43
      = 4(2+3) = 45 = 1024.

3. Express the following in exponential form:
   a. $5 \times 5 \times 5 \times 5$
      $5 \times 5 \times 5 \times 5 = 54$.
   b. $(-3) \times (-3) \times (-3)$
      $(-3) \times (-3) \times (-3) = (-3)3$.
4. Write the following numbers in standard form:
   a. 700,000
      $700,000 = 7 \times 105$
   b. 9,800,000
      $9,800,000 = 9.8 \times 106$
   c. 60,000
      $60,000 = 6 \times 104$
   d. 425,000,000
      $425,000,000 = 4.25 \times 108$
   e. 320,000
      $320,000 = 3.2 \times 105$

Learning Level Tracker

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Level 3: Solves problems independently

Name of the School:	**UDISE:**
Block:	**District:**
Name of the Teacher:	**Assessment Date:**

Class: 8		Subject: Maths		
Roll No.	Name of the Student	Chapter: Exponents and Powers		
		Level 1	Level 2	Level 3

Chapter 11 : Direct and Inverse Proportions

Activity 1 The Jam Production

35 mins

Instructions

- Make a scenario,

  "In the hills of Ri-Bhoi, villagers prepare homemade Khasi pineapple jam. If 4 pineapples make 8 bottles of jam, how many bottles can 6 pineapples make?"

  You are now the **Jam Production Team of Ri-Bhoi** and must help calculate ingredients and bottle requirements.
- Divide the class into 4–5 groups of **"Jam Experts"**.
- Before the class prepare **paper cards** with the following proportion-based questions. Each team should receive 2-3 of these cards:
  - **Card A:** "If 4 pineapples make 8 bottles of jam, how many bottles can 6 pineapples make?"
  - **Card B:** "A recipe calls for 5 kg of sugar to make 10 bottles of jam. How much sugar is needed if you want to make 15 bottles?"
  - **Card C:** "If a jam-making machine can process 20 pineapples in 10 minutes, how many pineapples can it process in 15 minutes?"
  - **Card D:** "To prepare 12 bottles of jam, it takes 3 hours. How many hours would be required to prepare 8 bottles of jam at the same rate?"
- Ensure each team has **notebooks or plain paper, pencils, and rulers** for their calculations.
- Begin by explaining to the class: "Today, we'll focus on **Direct Proportion**. This means that as one quantity increases, the other quantity increases at the same rate, and vice versa. For example, if you use *more* pineapples, you will get *more* bottles of jam. We can use this rule to solve our problems." You can demonstrate a simple example on the board.
- Each team will receive 2–3 "Jam Production" cards. Teams should read each question carefully to identify the two quantities that are directly proportional.
- Teams will work together to solve each problem on their cards. They should use the Direct Proportion Rule (e.g., setting up equivalent ratios or finding the unit rate) to find their answers. Encourage them to show their working steps clearly.
- Once teams have solved their problems, they will come up to the board. For each question, they should **write down the problem, their simplified answer, and briefly explain the method** they used to solve it (e.g., "We found that 1 pineapple makes 2 bottles, so 6 pineapples make 12 bottles").
- **Wrap-up discussion:**
  - "What did you observe about the number of bottles of jam when we increased the number of pineapples?"
  - "Based on our activities today, when do we say two quantities are in **direct proportion**, and how is that different from the **inverse proportion** example we saw?"
  - Emphasis how direct proportion helps in scaling up recipes, planning production, and understanding relationships in various real-world scenarios, especially in businesses like those in Meghalaya.

Activity 2 The Sumo Timekeepers

35 mins

Instructions

- Start the class with a scenario,

  "During a local fair in Sohra, a sumo match is arranged. The event organiser notices that if 2 wrestlers take 10 minutes to finish a round, 4 wrestlers will finish it in less time. They need your help to calculate the time and manage the schedule efficiently!"

  Tell the students that you are the **Timekeepers**, helping organise the wrestling schedule.
- Divide students into 4–5 groups of "Event Managers" (3–4 students per group).
- Before the activity, prepare **"Schedule Cards"** with the following real-life inverse proportion questions:
  - **Card A (Sumo Match):** "If 2 sumo wrestlers take 10 minutes to complete a round, how long will it take if 4 wrestlers are competing in the same type of round?"
  - **Card B (Painting Job):** "3 painters can paint a community hall in 8 days. How many days would it take 6 painters to paint the same hall, assuming they work at the same rate?"
  - **Card C (Food Supply):** "A relief camp has enough food to feed 10 people for 15 days. If 5 more people join the camp, how many days will the same amount of food last?"
  - **Card D (Building a Wall):** "If 4 masons can build a wall in 9 hours, how long would it take 12 masons to build the identical wall?"
- Ensure each team has **notebooks or plain paper, pencils, and rulers** for their calculations.
- Begin by explaining to the class: "Today, we're exploring **Inverse Proportion**. This means that as one quantity increases, the other quantity *decreases* proportionally, and vice versa. Think of our sumo match: if you have *more* wrestlers, the time to finish a round will be *less*. We can use this rule to solve our problems." You can demonstrate a simple inverse proportion example on the board (e.g., speed and time for a fixed distance).
- Each team will receive 2–3 "Schedule Cards." Teams must work collaboratively to solve each inverse proportion problem. They should clearly show their working steps, demonstrating how they applied the inverse proportion rule.
- Once teams have solved their problems, they will come up to the board. For each question, they should **write the problem, their calculated answer, and briefly explain the method** they used to arrive at their solution (e.g., "We used the rule that (Number of Workers 1 x Time 1) = (Number of Workers 2 x Time 2)").
- **Bonus Challenge:** Identify the Proportion!
  - Provide teams with one new problem and challenge them to first **identify if it's an example of direct proportion or inverse proportion**, and then solve it.
  - Example Bonus Question: "If a baker uses 2 cups of flour to make 12 cookies, how many cookies can they make with 3 cups of flour?" (This will test their understanding of both concepts).
  - Encourage teams to justify *why* they classified it as direct or inverse.
- Wrap-up discussion as:
  - "Why did the time taken for the sumo round reduce when we increased the number of wrestlers?"
  - "Can we relate the concept of inverse proportion to other everyday chores or tasks, like a group cleaning project or preparing for a school event?"
  - Emphasis how understanding inverse proportion is vital for effective teamwork, resource allocation, and time management in various real-life situations.

Activity 3 Rainwater Collection in Rooftops

35 mins

Instructions

- Start the class with a scenario,

  "In Shillong, locals use rainwater harvesting during monsoon. A roof of 5 m² collects 100 litres in 1 hour. How much will a 10 m² roof collect?"

  Tell the students that they are now **Monsoon Water Scientists**, helping households plan their water storage.
- Form the teams of 4-5 students into groups of **"Water Technicians"**.
- Before the activity:
  - Prepare **problem cards** with direct proportion questions related to rainwater harvesting (e.g., relating roof area to water collected, or rainfall duration to litres stored).
  - Ensure each team has **notebooks or plain paper, pencils, and rulers** for their calculations and table creation.
- Now, each "Water Technician" team will receive a set of problem cards. Teams will work collaboratively to solve these direct proportion questions, calculating quantities like how much water is collected based on different roof areas or varying rainfall durations. They should clearly show their working steps.
- For one of their solved problems (or a new scenario provided by the teacher, e.g., using the initial scenario of 5 m² collecting 100 litres), teams will **create a small table**. This table should demonstrate the direct proportional relationship by showing how the amount of water collected **increases** as the roof area (or rainfall duration) **increases**. For example:

Roof Area (m²)	Water Collected (litres)
5	100
100	200
15	300

- Teams will discuss and prepare to share how understanding direct proportion (specifically in water collection) can be applied in other environmental contexts, such as calculating resource consumption, waste generation, or plant growth based on specific conditions.
- **Bonus Challenge:** Challenge each team to **estimate the total water collected from their school's roof** during a hypothetical 3-hour rain event, using the principles of direct proportion learned. They should make reasonable assumptions for the school's roof size if exact dimensions aren't known.
- Wrap up the discussion as:
  - "Why is water collection directly proportional to the size of the roof?"
  - "How can understanding these proportional relationships help us in designing sustainable homes or planning for better water conservation in our communities?"
  - Emphasis how proportion helps in water conservation, urban planning, and making informed decisions about resource management.

Assessment

35 mins

Answer the following questions:

1. Two quantities are said to be in **direct proportion** if:
   a) One increases and the other decreases
   b) Both increase or decrease together
   c) One remains constant
   d) Both quantities are unrelated
2. If x and y are in **inverse proportion**, then:
   a) $\frac{x}{y}$ is constant
   b) x + y is constant
   c) x × y is constant
   d x − y is constant
3. If 5 workers can build a wall in 6 days, how many days will 10 workers take (assuming inverse proportion)?
   a) 3
   b) 6
   c) 9
   d) 12
4. If 3 litres of paint can cover 150 square metres, how much area will 6 litres cover (direct proportion)?
   a) 150 m^2
   b) 200 m^2
   c) 250 m^2
   d) 300 m^2
5. Which of the following is an example of inverse proportion?
   a) Number of pens and cost
   b) Number of people and work completed
   c) Speed and time for fixed distance
   d) Cost and quantity purchased
6. Explain with an example when two quantities are said to be in direct proportion.
7. Describe a real-life situation of inverse proportion and explain why it is inverse.
8. A car travels 120 km in 2 hours. Assuming direct proportion, how much distance will it cover in 5 hours? Also, explain how the relation of direct proportion is used here.

Answer Key

1. Both increase or decrease together
2. $x \times y$ is constant
3. 3
4. 300 m^2
5. Speed and time for a fixed distance
6. Two quantities are in **direct proportion** when an increase in one leads to a proportional increase in the other. For example, if the cost of 1 pen is Rs. 5, then the cost of 2 pens is Rs. 10, 3 pens are Rs. 15, and so on. The ratio between the number of pens and total cost remains constant, indicating a direct proportion.
7. A real-life example of **inverse proportion** is time taken to complete a task with varying number of workers. For instance, if 4 workers complete a task in 8 days, then 8 workers will take only 4 days to complete the same task. As the number of workers increases, the time taken decreases, showing inverse proportion.
8. Speed = $\frac{120 \text{ km}}{2 \text{ hrs}}$ = 60 km/hr

   In 5 hours, distance = $60 \times 5 = 300$ km

   This is a case of **direct proportion**, where the speed remains constant and distance increases with time. As time increases, the distance covered also increases proportionally.

Learning Level Tracker

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Name of the School:	**UDISE:**
Block:	**District:**
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Class: 8		Subject: Maths		
Roll No.	Name of the Student	Chapter: Direct & Inverse Proportions		
		Level 1	Level 2	Level 3

Chapter 12 : Factorisation

Activity 1 The Shillong Spice Lab Puzzle

35 mins

Instructions

- Begin the session by giving a scenario,

  "Long ago, in the scientific hub of Shillong, a grand Spice Laboratory was built to test and analyse rare spice mixtures. These mixtures are represented using algebraic expressions on coded labels. One day, due to a thunderstorm, the labels of many bottles were damaged and now only the combined expressions are visible. The ingredients (factors) must be identified again to restore the lab's functioning."
- Tell the students that **they are the trusted Spice Chemists** of the Shillong Scientific Guild. Their job is to restore the labels by breaking down these coded expressions using the power of factorisation.
- Divide the class into 4–5 teams of "Spice Chemists."
- **Distribute "Label Cards":** Give each team a few "Label Cards" with combined algebraic expressions. These might include: $6x + 9$, $15a^2 - 10a$, $4x^2 - 25y^2$, etc.
- Analyse and Factorise: For each "Label Card," teams need to follow these steps:
  - **Identify Common Factors:** First, look for the **greatest common factor (GCF)**. This means finding the largest number that divides into all terms and any variables that appear in every term.
  - **Factorise the Expression:** Once the common factor is identified, divide each term by it and write the expression as a **product** of the GCF and the remaining expression in parentheses.
  - **Apply Identities (if applicable):** For expressions like 4x2−25y2, recognise if they fit specific algebraic identities, such as the **difference of squares**

    (a2−b2) = (a + b) (a − b)).
- Each team will write their original expression, their step-by-step factorisation, and their final answer on the board. They should also provide a **brief explanation** of the method they used (e.g., "We took out the common factor 3," or "We used the difference of squares identity").
- Each team earns "Restored Label Points" for every correct solution and clear explanation, contributing to the lab's restoration.
- To help your students, remind them of these powerful factorisation techniques:
  - Look for a number and/or variable that can be divided out of *every* term in the expression.

    Example: For 6x+9, the common factor is 3. So, 6x+9 = 3(2x + 3).
  - If you see an expression with two perfect square terms separated by a minus sign, it can be factored using the pattern $a^2-b^2 = (a + b) (a - b)$.

    Example: For 4x2−25y2, recognise that $4x^2=(2x)^2$ and $25y^2=(5y)^2$.

    So, $4x^2-25y^2 = (2x + 5y) (2x - 5y)$.
- Wrap up the discussion as:
  - Ask: "Why do we factorise algebraic expressions instead of keeping them in their longer, combined form?"
  - Emphasise how identifying common factors and using algebraic identities help simplify expressions and uncover their hidden structure.
  - Relate this to real-life applications like simplifying scientific data, breaking down complex formulas, or decoding mathematical codes.

Activity 2 The Sohra Plantation Tokens

35 mins

Instructions

- Begin the class with a scenario,

  "In Sohra, a green village near Shillong, a special plantation drive is underway! Trees are being planted in organised rows and patterns. Each row's total number of trees can be described by an **algebraic expression**. However, the **labels indicating how many trees should go in each *smaller* section within a row have become mixed up!** Your job is to figure out the correct number of trees for these sections."

  Tell students that they are **Tree Pattern Planners**, responsible for decoding and simplifying these expressions to assist in organising the plantation.
- Now divide the class into 4–5 teams of "Plantation Planners."
- Before the activity, prepare a set of "Row Expression Cards" for each team. These cards will feature quadratic expressions that can be factorised by middle-term splitting, such as $x^2 + 7x + 12$, $x^2 + 5x + 6$, $x^2 - 3x – 10$

  Just ensure each team has **chart paper, markers, and scratch paper/notebooks** for their work.
- **Introduction to Middle-Term Splitting:** As a teacher, explain the method of "middle-term splitting" clearly. "Today, we're going to learn how to break down special algebraic expressions, like the ones on your cards, into their 'factors.' This is like figuring out the length and width of a rectangle if you only know its area." "We'll focus on expressions that look like $x^2 + bx + c$. Our goal is to find two numbers that when you **add** them, you get the middle term 'b' (the coefficient of x), and when you **multiply** them, you get the last term 'c' (the constant).":

  Use an example like $x^2 + 7x + 12$:
  - "Look at $x^2 + 7x + 12$. Here, b=7 and c=12."
  - "We need two numbers that add up to 7 and multiply to 12."
  - "Let's list factors of 12: (1, 12), (2, 6), (3, 4)."
  - "Which pair adds up to 7? Yes, 3 and 4!"
  - "So, we 'split' the middle term 7x into 3x + 4x. The expression becomes x2+ 3x + 4x + 12."
  - "Now, group the terms and factor by grouping: $(x^2 + 3x) + (4x + 12)$"
  - "Take out common factors from each group: x (x + 3) + 4(x + 3)"
  - "Notice that (x + 3) is common. So, the factors are (x + 3) (x + 4)."
  - "This means a row of trees could be (x + 3) sections long, with (x + 4) trees in each section!"
- Each "Plantation Planner" team will receive their "Row Expression Cards." For each card, they must:
  - **Apply the middle-term splitting method** to factorise the given expression.
  - **Identify the two binomial factors** (e.g., (x + 3) and (x + 4)).
  - **Explain the planting logic:** On their chart paper, for each solved expression, they should write the original expression, their factorisation, and a sentence explaining what the factors represent in terms of planting (e.g., "For $x^2 + 7x + 12$, the row can be thought of as having (x + 3) sections, with (x + 4) trees in each section").
- Once all teams have completed their tasks, they will present their chart papers to the class, explaining their solutions and their "planting logic" for each expression.
- Wrap up the discussion as:
  - "How does the middle-term splitting method help us simplify these algebraic expressions and figure out the 'sections' for our tree rows?"

- "In what other areas of math or real life do you think recognising patterns and product pairs (like we did with the numbers for 'b' and 'c') can be useful?"
- Emphasise the usefulness of recognising patterns and product pairs in both mathematics and nature, such as in scientific formulas or even biological growth patterns.

Activity 3 The Grand Festival Distribution

35 mins

Instructions

- Start the class with a scenario:

  "In the vibrant festivals of Meghalaya, communities prepare grand feasts and distribute resources for various stalls or performances. Imagine the total quantity of a special festival dish, or the total amount of decorations, is represented by a complex **algebraic expression**. This needs to be divided equally among the different village groups or stalls, whose numbers are also represented by an algebraic expression. Your task is to figure out the exact share each group receives!"

  Tell the students that they are the **Festival Coordinators**, entrusted with ensuring fair and accurate distribution of resources by mastering the division of algebraic expressions.
- Divide the class into 4–5 teams of "Festival Coordinators."
- **Before the activity, prepare Cards with various division problems**. These cards should cover:
  - **Monomial by Monomial:** Simple division of terms.
  - **Polynomial by Monomial:** Dividing each term of a polynomial by a monomial.
  - **Polynomial by Polynomial (Factorisation Method):** Cases where the numerator can be factored (e.g., using common factor or middle-term splitting) and then cancelled by the denominator.
- Some examples of distribution cards:
  - **Card A**: "Total Feast Rice: $18x^5$. Number of Families: $3x^2$. What is the share per family?" (Mon / Mon)
  - **Card B:** "Total Decoration Lights: $(20y^3–10y^2)$. Number of Stalls: 5y. What is the share per stall?" (Poly / Mon)
  - **Card C:** "Total Cultural Performance Time (minutes): $(a^2 + 7a + 12)$. Number of Performance Slots: $(a + 3)$. What is the duration of each slot?" (Poly / Poly using factorisation)
  - **Card D:** "Total Budget for Crafts: $(9p^4 – 6p^3 + 12p^2)$. Number of Artisans: $3p^2$. What is the budget share per artisan?" (Poly / Mon)
  - **Card E:** "Total Festival Area (sq. units): $(z^2 – 49)$. Length of one section: $(z – 7)$. What is the width of each section?" (Poly / Poly using Difference of Squares)

  Just ensure each team has **notebooks or plain paper, pencils, and rulers**.
- Begin by explaining: "Just like we divide numbers to find out how much each person gets or how many groups can be formed, we can also divide **algebraic expressions**. This is especially useful when dealing with quantities that involve variables."
  - **Demonstrate Monomial by Monomial:** Use an example like 10x4 ÷ 5x2. Explain dividing coefficients and subtracting exponents for variables.
  - **Demonstrate Polynomial by Monomial:** Use (6y3 + 9y2) ÷ 3y. Emphasise dividing *each term* of the polynomial by the monomial.
  - **Demonstrate Polynomial by Polynomial (using factorisation):** Explain that for many problems, if the numerator (dividend) can be factored, and one of its factors matches the denominator (divisor), they can be cancelled out. This is a direct application of their previous factorisation knowledge. Use an example like $(x^2 + 6x + 9) ÷ (x + 3)$. Show factoring $x^2 + 6x + 9$ into $(x + 3)(x + 3)$ and then cancelling one $(x + 3)$.

- Each "Festival Coordinator" team will receive 2-3 "Distribution Cards." Teams must work together to **solve each division problem**, applying the appropriate method learned (monomial by monomial, polynomial by monomial, or polynomial by polynomial using factorisation). They should clearly show all their steps.
- Once teams have solved their problems, they will come up to the board. For each card, they should **write the original problem, their step-by-step solution, and the final simplified expression**. They should also briefly explain which method they used and what their answer represents in the context of the festival distribution scenario.
- Wrap up the discussion as:
  - "Why is it important to know how to divide algebraic expressions in real-life situations, like fair resource distribution or engineering calculations?"
  - "How did your knowledge of factorisation help you in dividing polynomials?"
  - Emphasise how dividing algebraic expressions helps in fair distribution, understanding rates, and simplifying complex formulas in various fields, from resource management to science.

Assessment

35 mins

Answer the following questions:

1. Which of the following is a factor of both 12 and 18?
   a) 3
   b) 5
   c) 7
   d) 11
2. Factorise: $x^2 + 5x + 6$
   a) (x + 2) (x + 3)
   b) (x - 2) (x - 3)
   c) (x + 1) (x + 6)
   d) (x - 1) (x – 6)
3. Factorise the expression: $2x^2 + 4x$
4. Explain how to factorise $a^2 + 5a + 6$ using middle term splitting.
5. Factorise the expression using identity: $x^2 - 10x + 25$
6. Divide 9x4 – 4x2 + 4 by 3x2 – 4x + 2.
7. Divide $15y^4 + 16y^3 + \left(\frac{10}{3}\right) y - 9y^2 - 6$ by 3y – 2. Write down the coefficients of the terms in the quotient.

Answer Key

1. 3
2. (x + 2) (x + 3)
3. We take out the common factor:
   = 2x (x + 2)
4. We split 5a into 2a and 3a:
   $a^2 + 2a + 3a + 6 = a(a + 2) + 3(a + 2) = (a + 2)(a + 3)$
5. This is a perfect square: $x^2 – (2\times5)\, x + 5^2 = (x - 5)2$
6. Quotient = $3x^2 + 4x + 2$
   Remainder = 0

$3x^2 + 4x + 2$

$3x^2 – 4x + 2$ | $9x^4 – 4x^2 + 4$

$9x^4 + 6x^2 - 12x^3$

$12x^3 - 10x^2 + 4$

$12x^3 - 16x^2 + 8x$

$6x^2 - 8x + 4$

$6x^2 - 8x + 4$

0

7. We must divide $15y^4 + 16y^3 + \left(\frac{10}{3}\right) y – 9y^2 – 6$ by $3y – 2$
   So by using long division method we get
   Quotient = $5y^3 + \left(\frac{26}{3}\right) y^2 + \left(\frac{25}{9}\right) y + \left(\frac{80}{27}\right)$
   Remainder = $\left(\frac{-2}{27}\right)$
   Co-efficient of y^3 is 5
   Co-efficient of y^2 is $\frac{26}{9}$
   Coefficient of y is $\frac{25}{9}$ and,
   Constant term = $\frac{80}{27}$

$5y^3 + (26/3)y^2 + (25/9)y + (80/27)$

$3y – 2$ | $15y^4 + 16y^3 – 9y^2 + (10/3)\, y – 6$

$15y^4 - 10y^3$

$26y^3 – 9y^2 + (10/3)\, y – 6$

$26y^3 – 52/3y^2$

$25/3y^2 + (10/3)\, y – 6$

$25/3y^2 - 50/9\, y$

$80/9\, y – 6$

$80/9\, y – 160/27$

$-2/27$

Learning Level Tracker

Keep a record of unit assessment results in the tracker.

As you conduct assessments based on the activities suggested, put a tick mark as per the following:

Level 1: Not able to solve problems and having difficulty comprehending the problem

Level 2: Solves most of the problems with external support

Level 3: Solves problems independently

Name of the School:	**UDISE:**
Block:	**District:**
Name of the Teacher:	**Assessment Date:**

Class: 8		Subject: Maths		
Roll No.	Name of the Student	Chapter: Factorisation		
		Level 1	Level 2	Level 3

Chapter 13 : Introduction to Graphs

Activity 1 Wildlife Tracking in the Meghalaya Sanctuaries

35 mins

Instructions

- Start the session with a scenario:

  "In the lush, biodiverse forests of Meghalaya, brave wildlife conservationists are monitoring the movements of rare and elusive animals, like the Clouded Leopard, the Hoolock Gibbon, and the Indian Pangolin. They use a special grid system to track the animals' positions throughout the day, noting their initial spots and then how they shift. Your crucial job is to analyse these movements, predict their next locations, and ensure these magnificent creatures stay within safe zones on the sanctuary map!"

  Tell the students that they are **Wildlife Trackers**, key members of Meghalaya's conservation team, using coordinate geometry to map and understand animal movements.
- Divide the class into 4 –5 "Wildlife Tracking Teams."
- Before the activity: Teacher's Preparation for the "Sanctuary Grid Map"
  - **Create a Large Sanctuary Grid Map:** Draw a large Cartesian plane on the board or floor, clearly marking X and Y axes and quadrants.
  - **Prepare "Animal Tracking Cards":** For each team, create 3-4 cards. Each card will list an animal's initial coordinates and describe its movements (translations).

    Example 1: Clouded Leopard: Initial: (2, 3). Moves 4 units West, then 1 unit North.

    Example 2: Hoolock Gibbon: Initial: (-5, 1). Moves 3 units East, then 4 units South.
- Prepare "Safe Zone Cards": Create a separate card for each team with coordinates that form a polygon for a 'Safe Zone'.
  - *Example*: Plot A (-3, 6), B (2, 6), C (2, 3), D (-3, 3) for a 'Rare Orchid Protected Zone'.
- Briefly explain **translation** as shifting a point on a coordinate plane. Demonstrate how to calculate new coordinates by adding/subtracting units to X (East/West) and Y (North/South).
- Teams plot and label the **initial position** of each animal from their "Animal Tracking Cards" on their graph paper.
- Teams calculate the **new coordinates** after each animal's described movement. They then plot this new position and draw an arrow from the initial to the final spot.
- Teams plot all coordinates from their "Safe Zone Card," connect them to outline the zone, and identify its geometric shape.
- Teams determine if their animals entered or stayed within a safe zone after their movements.
- Teams present their maps, showing animal movements and safe zones, explaining their calculations and observations to the class.
- Bonus Challenge: Decoding the Movement Rule!
  - Present a bonus problem where teams are given an animal's starting and ending coordinates. They must **determine the exact translation rule** (e.g., "moved X units East/West and Y units North/South") that occurred.
  - Example: “A bird started at (1, -2) and was later spotted at (-3, 4). Describe its movement."

- Wrap up the discussion:
  - o "How does coordinate geometry help in wildlife tracking and conservation?"
  - o "What other real-world applications involve tracking movements using coordinates?"
  - o Emphasis its use in GPS, weather forecasting, robotics, and logistics.

Activity 2 Mapping Meghalaya's Natural Wonders

35 mins

Instructions

- Begin the session with a scenario:

  "The Meghalaya Tourism Board needs your help! They're creating an interactive map of the region's waterfalls, caves, and root bridges using a **coordinate system**. Sometimes, locations are reflections of each other, or new paths require distance calculations. Your mission as Eco-Cartographers is to bring this map to life!"

  Students are **Meghalaya Eco-Cartographers**, precisely plotting and analysing the coordinates of natural treasures.
- Divide the class into 4–5 "Eco-Cartographer Teams."
- Before the class draw or project a large Cartesian plane on the board or floor, clearly marking axes and quadrants.
- **Prepare "Landmark Coordinate Cards":** For each team, create 3-4 cards listing coordinates for "natural wonders" include variety in all four quadrants and on axes, say for examples:
  - o **Waterfalls:** Nohkalikai Falls: (4, 3), Elephant Falls: (-2, 5)
  - o **Caves:** Mawsmai Cave: (5, -1), Arwah Cave: (-3, -6)
  - o **Root Bridges:** Double-Decker Bridge: (-5, 2), Balancing Rock: (0, 0)
- Briefly review the Cartesian plane, including axes, origin, and quadrants, explaining how (x, y) coordinates pinpoint locations.
- Each team receives "Landmark Coordinate Cards." Students must **carefully plot and label each point** (e.g., "Nohkalikai Falls (4, 3)") on their graph paper.
- Pose these challenges for teams to solve and explain:
  - o **Reflection Challenge:** "If Elephant Falls (-2, 5) reflected across the **X-axis**, where would the 'Secret Twin Cave' be located?" (Answer: (-2, -5))
  - o **Distance Challenge:** "How many units away vertically is Elephant Falls (-2, 5) from Arwah Cave Viewpoint (-3, -6)?" (Answer: $|5-(-6)|=11$ units)
  - o **Forming Regions:** Ask teams to connect a sequence of 3-4 landmarks on their map and identify the geometric shape formed (e.g., a triangle for a 'Trekking Circuit').
- Teams will present their maps, showing plotted landmarks and explaining solutions to the challenges.
- Wrap up the discussion as:
  - o "How did coordinate geometry help us map and understand relationships between Meghalaya's natural wonders?"
  - o "Where else are coordinate systems essential in the real world?"
  - o Emphasis its use in GPS, mapping, and planning.

Activity 3 Graph Café of Shillong – Order on the Grid

35 mins

Instructions

- Set the class with a scene & Assign role:

  "Welcome, everyone, to the Quirky Graph Café, Shillong's most unique eatery! In this café, food items are served on a special grid shelf, and customers place their orders using precise coordinates. Today, you'll either be a **Coordinate Waiter**, responsible for locating and serving dishes, or a **customer**, placing your order and verifying its delivery."
- **Divide the class into teams of 4-5 students.** Within each team, assign initial roles (e.g., 2 Waiters, 2 Customers, 1 Order Taker). Encourage rotating roles during the activity to give everyone a chance to experience both sides.
- **The Café's Unique System (Scenario):** "In our café, traditional menus are out! 'Customers' don't just say 'I want a burger.' Instead, they place orders by stating the food item along with its exact **food coordinates** on the grid shelf (e.g., 'Burger at (2,1)'). It's up to our diligent 'Waiters' to correctly plot these coordinates on our large 'Grid Shelf' and serve the dish. 'Customers' then check if their order has been delivered to the correct spot!"
- Before the activity, prepare the **"Menu Cards"**: Create several "Menu Cards" for each team. Each card should clearly list food items with their corresponding coordinates. Ensure a variety of coordinates covering all four quadrants and axes.
  - Burger: (2, 1), Coffee: (−1, 2), Sandwich: (0, −2), Juice: (3, -1), etc.
- **Set up the "Grid Shelf":** Draw a large Cartesian plane (graph grid) on the classroom floor using tape, or clearly draw one on a large whiteboard/blackboard.
  - **Ensure the axes are well-marked** (X-axis and Y-axis) and **units are clear** (e.g., numbers 1, 2, 3... along both axes).
  - Make sure there's enough space for students to physically move around and "serve" or "check" orders.
- Provide **small paper cutouts or markers** that can represent the food items to be placed on the large grid.
- "Customers" within each team will take turns placing orders. They will clearly state the food item they want and its exact coordinates (e.g., "I'd like a Coffee, please! That's at coordinates (-1, 2).").
- The assigned "Waiter" from the team will then go to the large "Grid Shelf" (on the floor or board). They must **carefully plot the given coordinates** and **place/label the corresponding food item** at that precise spot. Remind them to start from the origin (0,0) and move along the X-axis first, then the Y-axis.
- Once the "Waiter" has placed the order, the "Customer" who placed the order (and their team members) will **observe from their "table" to verify if the "Waiter" has placed their food item correctly**. If it's wrong, the "Customer" should politely guide the "Waiter" to the correct location, explaining the mistake.
- To add more challenge, the teacher can give "Waiters" a sequence of multiple items to plot (e.g., "First, serve the Burger, then the Sandwich, and finally the Coffee!"). As the "Waiters" move from one item to the next, they can **visually trace or connect the dots** with their finger or a marker, showing their "delivery path" across the grid.
- **Waiter's Quick Guide (Hints for Plotting):** To assist the "Waiters" in their service, remind them of these key points:
  - **Positive X, Positive Y (e.g., (2, 1)):** Located on the "Upper-right shelf" (Quadrant I).

- **Negative X, Positive Y (e.g., (-1, 2)):** Located on the "Upper-left shelf" (Quadrant II).
- **Negative X, Negative Y (e.g., (-2, -3)):** Located on the "Lower-left shelf" (Quadrant III).
- **Positive X, Negative Y (e.g., (3, -1)):** Located on the "Lower-right shelf" (Quadrant IV).
- **Points on Axes:** Remember that if one coordinate is zero, the point lies on an axis! (e.g., (0, -2) is on the Y-axis; (4, 0) is on the X-axis).

- Wrap up the discussion as:
  - "How did using coordinates and plotting help us organise the café space logically and ensure correct deliveries?"
  - "Beyond our Quirky Graph Café, where else do you see this 'coordinate system' being used to organise spaces, manage inventory, or find locations in the real world?"
  - Emphasise how plotting and coordinates are crucial tools for organising spaces, managing warehouses, creating seating charts, and are fundamental to technologies like GPS and mapping.

Assessment

35 mins

Answer the following questions:

1. From the given options, which point lies on the negative side of the x-axis?
   a) (-4, 0)
   b) (0, -4)
   c) (3, 2)
   d) (5, 7)
2. A point having coordinates (0, 5) lies on the:
   a) x-axis
   b) y-axis
   c) origin
   d) none of these
3. In a Cartesian plane, the horizontal axis is called the:
   a) y-axis
   b) vertical axis
   c) x-axis
   d) diagonal
4. The coordinates of the origin are:
   a) (1, 1)
   b) (0, 1)
   c) (1, 0)
   d) (0, 0)
5. Determine in which quadrant the given points (-5,2) and (2,-5) will lie in:
   a) I and III quadrants respectively
   b) I and IV quadrants respectively
   c) II and IV quadrants respectively
   d) In the same quadrants
6. Explain how you would locate the point (3, 4) on a graph paper.
7. Draw a line graph for the following data and explain the trend:
   Time (in hours): 1, 2, 3, 4, 5
   Distance (in km): 10, 20, 30, 40, 50
8. Plot the points (2, 3), (4, 5), and (6, 7) and state the type of line formed.

Answer Key

1. (-4, 0)
2. y-axis
3. x-axis
4. (0,0)
5. II and IV quadrants respectively
6. To locate point (3, 4), start at the origin (0, 0). Move 3 units to the right along the x-axis, then move 4 units up along the y-axis. Mark the point where these coordinates meet.
7. To draw the graph, plot the points (1,10), (2,20), (3,30), (4,40), and (5,50) on the Cartesian plane. Join the points with a straight line. The trend shows that distance increases uniformly with time — indicating a constant speed.
8. When these points are plotted and joined, they form a straight line, showing a linear relationship between x and y.

Learning Level Tracker

Keep a record of unit assessment results in the tracker.

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Level 1: Not able to solve problems and having difficulty comprehending the problem

Level 2: Solves most of the problems with external support

Level 3: Solves problems independently

Name of the School:	**UDISE:**
Block:	**District:**
Name of the Teacher:	**Assessment Date:**

Class: 8		Subject: Maths		
Roll No.	Name of the Student	Chapter: Introduction to Graphs		
		Level 1	Level 2	Level 3

Meghalaya Learning Enhancement Programme

SCIENCE

UNIT : 1

Chapter 1 : Crop Production and Management

Activity 1 Types of Irrigation Systems

35 mins

Materials Required

A plastic bottle with small holes (drip irrigation model), a glass of water (traditional irrigation), a tray filled with soil or sand

Instructions

- Invite a few student volunteers to come forward for this activity.
- Ask a student to pour water from a glass over the soil tray and ask the rest of the students to observe how much water spreads and is absorbed.
- Give a student a plastic bottle filled with water and let the water slowly drip through small holes made in the bottle's cap, onto the soil. You can invite more students to perform both tasks.
- Give students some time to think about which method uses less water. Ask them to share the reasons for their choice.
- Explain to students how drip irrigation helps in water conservation.
- Relate this to real-life farming, asking students how farmers in their region irrigate their fields.
- If time allows, ask students to draw diagrams of the experiment conducted in the class and their observations on each type of irrigation system.

Activity 2 Farming Calendar

35 mins

Materials Required

Chart papers, coloured pencils, textbook

Instructions

- Begin the class by asking students a quick question - *Why do farmers grow different crops in summer and winter? Write their answers on the board*.

- Explain to students why different crops have different requirements to germinate, grow and mature fruitfully to be able to be harvested.
- Divide students into small groups.
- Assign each group either Rabi crops or Kharif crops.
- Ask them to create a crop calendar on the chart papers, including:
  - Sowing season
  - Climatic conditions required
  - Harvesting time
- Each group will present their calendar to the class.
- Encourage the rest of the students to ask questions about the calendars being presented. Clarify the doubts that may arise.

Activity 3 The Nitrogen Cycle

35 mins

Materials Required

A ball or a waste paper ball (to represent nitrogen), blackboard

Instructions

- Start the activity with a quick question: *Why do farmers use fertilisers or grow pulses like beans and peas?* Explain that plants need nitrogen for growth, but they cannot take nitrogen directly from the air.
- On the blackboard, draw a simple nitrogen cycle.
- Divide students into four groups and label them as: Air, Soil, Plants and Animals
- Explain to students the rules of the game:
  - The "Air" group starts with the ball (representing nitrogen).
  - They pass it to Soil (since nitrogen is fixed into the soil by bacteria and lightning).
  - The "Soil" group passes it to Plants, which absorb nitrogen.
  - "Plants" pass it to Animals, since animals get nitrogen by eating plants.
  - "Animals" return nitrogen to the soil through waste and decomposition.
  - The cycle continues!
- Invite one member from each group to come forward and act out their role. Repeat the cycle 2-3 times with different students to ensure everyone understands the concepts.
- Ask students the following questions and conclude the activity:
  - Why do farmers grow pulses like peas and beans? *(They have nitrogen-fixing bacteria in their roots)*.
  - What happens if the soil lacks nitrogen? *(Crops won't grow well, so farmers use manure or fertilisers)*.

Assessment

35 mins

Choose the correct option

1. Farmers plough their fields before sowing seeds. What is the main reason for this?
   a) To remove excess water from the soil
   b) To allow proper air circulation in the soil
   c) To add more insects to the soil
   d) To dry out the soil completely
2. Why do farmers add manure or fertilisers to the soil?
   a) To remove weeds from the field
   b) To improve soil fertility and provide nutrients
   c) To prevent soil erosion
   d) To increase the number of earthworms in the soil
3. Why is crop rotation practised by farmers?
   a) To increase soil fertility and prevent nutrient loss
   b) To grow only one type of crop in a season
   c) To avoid irrigation in fields
   d) To remove harmful insects from the soil

Answer the following questions

4. Why do farmers prefer using organic manure over chemical fertilisers in the long run?

   _____
   _____

5. Why should excessive irrigation be avoided in fields?

   _____
   _____

6. Why is weeding important for healthy crop growth?

   _____
   _____

7. A farmer notices that his crop yield is decreasing every year despite using chemical fertilisers. What could be the reason for this? Suggest two sustainable farming practices that could help improve soil health.

   _____
   _____
   _____
   _____
   _____
   _____

Answer Key

1. (b) To allow proper air circulation in the soil
2. (b) To improve soil fertility and provide nutrients
3. (a) To increase soil fertility and prevent nutrient loss
4. Organic manure improves soil fertility naturally, enhances soil structure, and does not cause soil degradation like excessive chemical fertilisers.
5. Excess irrigation can cause waterlogging, leading to root rot and depletion of oxygen in the soil.
6. Weeds compete with crops for nutrients, sunlight, and water, reducing crop yield and making plants weak.
7. Reason for decreasing yield: Overuse of chemical fertilisers can reduce soil fertility, kill beneficial microbes, and lead to soil degradation.

   Sustainable farming practices:
   - Crop rotation (growing different crops in alternate seasons to restore soil nutrients).
   - Using organic manure or compost (to maintain natural soil fertility and structure).

Learning Level Tracker

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Name of the School:	**UDISE:**
Block:	**District:**
Name of the Teacher:	**Assessment Date:**

Class: 8		Subject: Science		
Roll No.	Name of the Student	Chapter: Crop Production and Management		
		Level 1	Level 2	Level 3

Chapter 2 : Microorganisms: Friend and Foe

Activity 1 What Are Microorganisms?

35 mins

Instructions

- Begin the class with the question – *Can you see everything around you? Do you know that some living organisms are crawling around your eyelashes?* (Microorganisms called Demodex mites live in our eyelashes. They are a normal part of the skin's microbiome).
- Explain to students what microorganisms are – they are tiny living organisms that are invisible to the naked eye but exist everywhere!
- Write four categories on the board: air, water, soil and inside our bodies.
- Ask students: Where do you think microorganisms exist? Write their answers under the correct category.
- Draw five boxes on the board and write the names of microorganisms inside (Bacteria, Fungi, Viruses, Protozoa, Algae).
- Give students clues and ask them to guess the microorganism. Example Clues:
  - *I am used to make curd but can also cause diseases like tuberculosis. (Bacteria)*
  - *I cause the common cold and flu but am so tiny that even normal microscopes can't see me. (Virus)*
  - *I help in making bread fluffy but can also grow on stale food as mould. (Fungi)*
  - *I live in water and cause malaria. (Protozoa)*
  - *I am found in ponds and make my own food like plants. (Algae)*
- Ask students: Can microorganisms be both good and bad? Have you ever seen fungi on bread or fruit? Why do we fall sick if we drink dirty water?
- Discuss how various microorganisms are everywhere, and they can be useful (e.g., making curd, medicines, cleaning the environment) or harmful (e.g., causing diseases, spoiling food).

Activity 2 How Vaccines Work

35 mins

Materials Required

Small paper slips with roles written on them: Virus (2-3 students), White Blood Cells (3-4 students), Vaccines (1-2 students) and Host (1 student as the human body)

Instructions

- Begin the class by asking: *Have you ever taken a vaccine? Why do we take them?* Briefly explain how vaccines train our immune system to fight diseases without making us sick.
- Inform students that we will do this activity in 2 scenarios. Assign students the roles of the Host, White Blood Cells and the Vaccines.
- First Scenario – Without a Vaccine
  - Tell students that a virus has attacked a healthy host. There is no vaccine in the current scenario. Let students enact the scenario and observe them.
  - The Viruses (2-3 students) try to "attack" the Host by lightly tapping them. As the Viruses attack the Host, the White Blood Cells (WBCs) have to try to stop the virus but fail because they don't recognise it. The Host falls "sick" (acts weak or sits down).
  - Discuss with the students: Why did the body fail to stop the virus? (WBCs did not know how to fight it).
- Second Scenario – With Vaccine
  - Introduce Vaccines (1-2 students) who pretend to "train" the WBCs.
  - Tell students that a virus has attacked a healthy host, who is vaccinated against it. Let students enact the scenario and observe them. When Viruses try to attack again, the WBCs now recognise and fight them off quickly. The Host remains healthy.
  - Discuss with the students: Why did the body fight the virus faster this time? How do vaccines help our body "remember" the virus?
- Relate the role-play to real vaccines like polio, COVID-19, or measles.

Activity 3 Fermentation

35 mins

Materials Required

Paper slips with names of local fermented foods: Jadoh, Tungrymbai, Bamboo Shoot, Sohra Pitha and some non-fermented foods: Rice, Fresh Fish, Vegetables, Roti

Instructions

- Begin the class by asking students: Have you eaten Jadoh or Tungrymbai? *Why do some foods in Meghalaya have a strong flavour or smell?*
- Explain to students that the strong flavour and smell come from the process of fermentation.
- Ask students: *Why do people ferment food? Possible answers:*
  - Helps preserve food longer.
  - Enhances taste and aroma.
  - Adds nutrients and makes food easier to digest.
- Prepare flashcards/slips with names of foods (some fermented, some not).
  - Examples of fermented foods: Tungrymbai, Bamboo Shoot, Fermented Fish, Sohra Pitha.
  - Examples of non-fermented foods: Rice, Fresh Fish, Vegetables, Roti.
- Divide students into small groups and give each group a mix of cards. Each group is to sort the cards into "Fermented" and "Not Fermented" categories.
- Conclude the class with a discussion on the following questions:
  - Why do we store fermented food carefully? (To prevent over-fermentation.)
  - Why do people in Meghalaya ferment food? *(For food preservation in winter)*
- End the class with a thought: "Fermentation is not just science – it's a part of Meghalaya's rich culture!"

Assessment

35 mins

Choose the correct option:

1. Why should cooked food be stored in a refrigerator?
   a) To increase the taste of the food
   b) To slow down the growth of microorganisms
   c) To make the food softer
   d) To completely kill all microorganisms
2. Why do farmers grow leguminous plants like peas and beans in the soil?
   a) To make the soil fertile by nitrogen fixation
   b) To prevent soil erosion
   c) To increase water content in soil
   d) To reduce the number of earthworms

Answer the following questions:

3. A student forgot to close the lid of a jam bottle. After a few days, he saw a layer of fungi on the jam.
   - Why did fungi grow on the jam?
   - How can food spoilage like this be prevented?

_____
_____
_____
_____
_____
_____

4. A farmer notices that his crops are getting infected with pests and diseases frequently.
   - What could be the reason for this?
   - Suggest two ways to control this problem.

_____
_____
_____
_____
_____
_____

Answer Key

1. (b) To slow down the growth of microorganisms
2. (a) To make the soil fertile by nitrogen fixation
3. Reason for fungal growth:
   - The jam contains sugar and moisture, which provide ideal conditions for fungal growth.
   - The bottle was left open, allowing spores from the air to settle and grow.

   Prevention:
   - Always close the lid tightly after use.
   - Store jam in a cool, dry place or refrigerate it.
4. Possible reasons for frequent pest attacks:
   - Overuse of chemical fertilisers or pesticides, leading to soil degradation.
   - Lack of crop rotation, which allows pests to thrive.
   - Improper irrigation, leading to plant diseases.

   Solutions:
   - Use organic manure and crop rotation to maintain soil fertility.
   - Use natural predators or biopesticides to control pests safely.

Learning Level Tracker

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As you conduct assessments based on the activities suggested, put a tick mark as per the following:

Level 1: Not able to solve problems and having difficulty comprehending the problem

Level 2: Solves most of the problems with external support

Level 3: Solves problems independently

Name of the School:	**UDISE:**
Block:	**District:**
Name of the Teacher:	**Assessment Date:**

Class: 8		Subject: Science		
Roll No.	Name of the Student	Chapter: Microorganisms - Friend and Foe		
		Level 1	Level 2	Level 3

Chapter 3 : Coal and Petroleum

Activity 1 Classifying Our World

35 mins

Materials Required

A collection of everyday objects (e.g., leaves, stones, water bottle, plastic bag, wooden spoon, glass, cotton fabric, metal spoon – the products can be chosen as per the availability around you), newspaper and small slips of paper

Instructions

- Place all the objects in a box or on a table. Take 2 newspapers and label one: natural and the other: human-made.
- Ask one student to come forward, pick one object at a time, observe it, and decide if it is natural or human-made.
- Ask the student to place the object on the respective newspaper, write its name on a small slip of paper and stick it under the object. Invite more students to do the same activity for other objects.
- Once all items are sorted, discuss the difference between natural and human-made resources. Encourage students to share more examples from their surroundings and explain why each example is classified as natural or human-made.
- Write the following questions on the board and discuss them with the whole class:
  - Can a resource be both natural and man-made? Give examples.
  - Why do we rely on both these types of resources?
  - What are the advantages and disadvantages of using human-made resources?
- End the activity by asking students to share what they learnt about natural and human-made resources.

Activity 2 Disappearing Resources

35 mins

Materials Required

Old newspapers, a box or a bowl

Instructions

- Before the activity, make 50 paper balls with old newspapers and put them in a bowl/box. The number of these paper balls can increase or decrease depending on the students present in the class.

- Begin the activity by introducing the meaning of exhaustible natural resources (coal, petroleum, natural gas, etc.).
- Ask students: "What happens if we keep using them without replacement?"
- Show students the bowl/box with 50 newspaper balls, explaining that this represents Earth's limited supply of coal (you can also use any other resource).
- Divide students into 3-4 groups. Each group represents a generation of people using the resource.
- A student from each group takes turns removing newspaper balls from the bowl, representing resource usage. Play 3 such rounds with all the groups.
- After the third round, stop and count the remaining newspaper balls.
- Discuss the following questions with students:
  - How did the resource level change over time?
  - How much is left for future generations?
  - What will happen when nothing is left?
  - What could we have done to make the resources last longer?
- In the end, introduce conservation strategies like using renewable energy, recycling, and efficient consumption to save non-renewable resources (to be addressed in the next class).

Activity 3 Saving Petrol

35 mins

Materials Required

A ball or a waste paper ball (to represent nitrogen), blackboard

Instructions

- Begin the activity with a question: *"Can you share 3 examples of petrol being used around you?"* (Expected answers: transport, generators, machines, etc.)
- Ask a follow-up question: *"What happens if all the petrol runs out?"*
- Explain that petrol is an exhaustible natural resource and needs conservation.
- Divide the class into small groups (4–5 students per group). Assign each group a real-life situation where fuel is being wasted or saved:
  - Group 1: A family using a car for short distances instead of walking.
  - Group 2: A driver keeping the engine on while waiting.
  - Group 3: A person riding a motorcycle with under-inflated tyres.
  - Group 4: A person using a bicycle to drop her child off at the bus stop.
- Each group discusses the scenario given to them, thinking about whether petrol is being wasted or saved. After the group discussion, the whole class discusses:
  - How was petrol wasted?
  - What could have been done differently?
- Ask students to think of simple actions they can take to conserve petrol. Write their ideas on the board.
- Together, create a 'Petrol Conservation Pledge' (e.g., "I will walk for short distances, use public transport, and turn off my engine when not needed") on a chart paper.

Assessment

35 mins

Choose the correct option:

1. Which of the following is not a fossil fuel?
   a) Coal
   b) Petroleum
   c) Natural Gas
   d) Biogas
2. What is the primary use of petroleum?
   a) Making jewellery
   b) Producing fuel for vehicles
   c) Manufacturing bricks
   d) Generating hydroelectricity

Answer the following questions:

3. Why is the excessive use of fossil fuels harmful to the environment? Suggest two ways to reduce dependence on them.

   _____
   _____
   _____
   _____

4. LPG and CNG are considered better fuels than coal and petrol. Give two reasons to support this statement.

   _____
   _____
   _____

5. Coal is said to be formed from dead vegetation. Explain how this process takes place over millions of years.

   _____
   _____
   _____
   _____

Answer Key

1. d) Biogas – Biogas is a renewable energy source, while coal, petroleum, and natural gas are fossil fuels.
2. b) Producing fuel for vehicles – Petroleum is refined to obtain petrol and diesel, which are used in transportation.
3. Harmful effects of fossil fuels: They cause pollution and contribute to global warming. Ways to reduce dependence: Use renewable energy sources (solar, wind) and promote fuel-efficient transport.
4. LPG & CNG as better fuels: They produce less pollution and burn efficiently without leaving residue.
5. Formation of coal: Dead plants buried under layers of soil undergo decomposition under heat and pressure over millions of years, turning into coal.

Learning Level Tracker

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Level 1: Not able to solve problems and having difficulty comprehending the problem

Level 2: Solves most of the problems with external support

Level 3: Solves problems independently

Name of the School:	**UDISE:**
Block:	**District:**
Name of the Teacher:	**Assessment Date:**

Class: 8		Subject: Science		
Roll No.	Name of the Student	Chapter: Coal and Petroleum		
		Level 1	Level 2	Level 3

Chapter 8 : Force and Pressure

Activity 1 Effect of Force on Objects

35 mins

Materials Required

Rubber bands, balloons (2), sponge (2), small pieces of newspaper (to make small paper balls) per group

Instructions

- Before the activity, collect all the materials required.
- Ask a pair of students to come forward, give them a rubber band and ask them to stretch it from both ends. Ask the pair, "What happens to its shape when you pull it?" Invite another pair and ask them to repeat the activity.
- Release the rubber band and observe if it returns to its original shape.
- Explain to students that elastic materials change shape when force is applied but return to their original shape when the force is released.
- Divide students into 4 groups. Distribute 2 sponges and 2 balloons to each of the groups. You can increase the number of groups based on the materials in hand.
- Ask the groups with the sponge, to press it with their fingers and observe how it changes shape. Then ask the rest of the groups to inflate the balloon they have and press it gently—its shape changes too. Direct the rest of the students' attention to the balloons.
- Ask the students: "Does the balloon return to its original shape when you stop pressing?" Explain to students that some materials (like sponges) are compressible, but return to their original form when pressure is removed.
- Take a small piece of newspaper and fold and crumple it. Explain to students that some materials (like paper, flour and water) are compressible, and do not return to their original form even after pressure is removed.
- Ask students: "What real-life examples can you think of where force changes shape?" (Expected answers: kneading dough, crushing a can, crushing flowers)
- Conclude the activity by explaining that force can cause temporary or permanent changes in shape depending on the material on which the force is being exerted.

Activity 2 Understanding Pressure with a Magic Bottle

35 mins

Materials Required

A plastic bottle with a lid, some water and a nail or a sharp pin

Instructions

- Before the activity, take a plastic bottle and make three small holes at different heights on one side.
- Tell students that today they will experiment with a magic bottle.
- Show students the holes you made in the bottle. Ask students: “If I fill this bottle with water, which hole will throw water the farthest?” Ask students to justify their answers.
- Fill the bottle with water and quickly close the lid.
- Open the lid slowly and observe how water flows out of the holes.
- Ask students: "Which hole is throwing water the farthest?"
- In the end, discuss how pressure increases with depth, making the bottom hole throw water the farthest.
- Ask students to share some such examples that they can think of, from their surroundings (for example dams, water tanks etc.)

Activity 3 Understanding Gravity!

35 mins

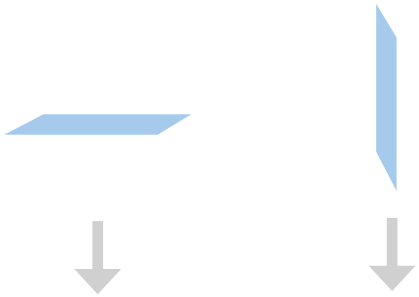
Materials Required

A small ball (or crumpled paper), a flat sheet of paper, a plastic bottle (empty and filled with water), a stopwatch (or mobile timer) and a chair or table for height variation

Instructions

- Begin the activity by asking students some questions – What happens when you drop a pen? Why doesn’t it stay in the air? Why do we stay on the ground instead of floating in air?
- Introduce gravity as the force that pulls objects towards the Earth.
- Hold a ball and a crumpled paper at the same height. Ask students: If I throw both these things together, which one would reach the ground first?
- Drop both things at the same time. Explain that gravity pulls both objects downward, but air resistance can affect how they fall.
- Next, drop an empty plastic bottle and a filled plastic bottle from the same height.
- Ask students: Would they fall at the same speed? (They should, but students may feel the heavier one falls faster.)

- Explain: Gravity pulls all objects equally, but air resistance and shape can make it seem different.
- To make the students understand air resistance, take two similar thin books or two similar cardboards and drop them from the same height as shown in the figure below:



- Ask them which one took more time to reach ground and discuss the possible reason for it.
- Explain air resistance as a force that slows down objects moving through air. It acts in the opposite direction of motion. It depends on the shape of the object.
- Conclude the activity with the following key takeaways:
  - Gravity is a force that pulls objects towards the Earth.
  - All objects fall at the same rate in the absence of air resistance.
  - Gravity affects everything around us, from falling objects to planetary orbits.

Assessment

35 mins

Read the cases given and answer the questions that follow:

Case – 1: A farmer walks on soft mud and notices his feet sink in. However, when he uses a wooden plank under his feet, he doesn't sink as much.

1. Why does the farmer's foot sink when he stands directly on the mud?

   _____

2. How does using a wooden plank reduce sinking?

   _____

3. What concept of pressure does this situation demonstrate?

   _____

Case – 2: A football is lying on the ground. Antony kicks the ball, and it starts rolling. It eventually stops after some time.

4. What force did Antony apply to make the ball move?

   _____

5. Why does the ball stop after rolling for a while?

   _____

6. If there were no friction, what would happen to the ball?

   _____

7. How can Antony make the ball move faster?

   _____

8. Identify 1 other real-life situations where a force is needed to change the state of motion of an object.

   _____

Answer Key

Case – 1

1. The farmer's foot sinks because his weight is applied over a small area, increasing pressure.
2. The wooden plank distributes its weight over a larger area, reducing pressure and preventing sinking.
3. This demonstrates the relationship between pressure and area — the pressure is inversely proportional to the contact area.

Case – 2

4. Antony applied a muscular force to move the ball.
5. The ball stops due to friction between the ball and the ground.
6. Without friction, the ball would keep moving indefinitely.
7. Antony can apply more force to make the ball move faster.
8. Other examples:
   - Pushing a bicycle to start moving.
   - Hitting a cricket ball with a bat.

Learning Level Tracker

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Level 1: Not able to solve problems and having difficulty comprehending the problem

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Name of the School:	**UDISE:**
Block:	**District:**
Name of the Teacher:	**Assessment Date:**

Class: 8		Subject: Science		
Roll No.	Name of the Student	Chapter: Force and Pressure		
		Level 1	Level 2	Level 3

Chapter 9 : Friction

Activity 1 Feeling Friction!

35 mins

Materials Required

A bottle cap, a smooth newspaper, a piece of cloth/crumbled newspaper, a scale (if available)

Instructions

- Ask students to share their predictions: *"What happens when you push a bottle cap on a smooth surface like paper vs. a rough surface like a piece of wood or cloth?"* Write their predictions on the board.
- Take a bottle cap and ask a student to flick it/push it gently on a fresh newspaper. Measure the distance it moves, using a scale or a handspan if a scale is not available.
- Repeat on different surfaces (crumbled newspaper, cloth, wood etc.)
- Record the distance the cap travels on each surface.
- Ask the following questions and discuss the answers:
  - Which surface allows the bottle cap to travel farthest?
  - Which surface stops the bottle cap quickly? Why does this happen?
- Explain to students the meaning of friction and how the type of surface contributes to a higher or lower force of friction.
- Ask students to share examples of, *"Where do we need more friction? Where do we reduce it?" (Examples: shoes have treads for grip, roads need rough surfaces etc.)*
- Conclude the class by giving students 5 minutes to write the meaning of friction on a small piece of paper before exiting the class (exit tickets).

Activity 2 Slide vs. Roll

35 mins

Materials Required

A small wooden box, a bottle cap and a smooth surface (table/floor)

Instructions

- Begin by revising the concept of friction and introducing its types: static, sliding, and rolling friction. Use simple real-life examples like moving a heavy cupboard (static), sliding a book (sliding), and rolling a suitcase (rolling).

- Take the wooden box on a flat surface. Ask a student volunteer to try pushing the box on the flat surface without moving it. Discuss how this represents static friction, which keeps objects stationary until enough force is applied.
- Next, ask a student to apply some force and slide the box across the surface. Encourage them to compare the effort required to keep the block moving versus starting the motion. Explain that sliding friction is lower than static friction.
- Now, ask the students to place a bottle cap (or pencil) under the box and roll it across the surface. Encourage them to observe how much easier it is to move the block. Relate this to rolling friction.
- Facilitate a discussion using guiding questions:
  - Why is it harder to start moving the block compared to keeping it sliding?
  - Why does the block move more easily when rolling on round objects?
  - Why are wheels and rollers commonly used in transportation and moving heavy objects?
- Conclude by asking each group to summarise their observations and discuss the advantages and disadvantages of each type of friction in daily life.

Assessment

35 mins

Choose the correct option:

1. Which of the following statements about friction is true?
   a) Friction always opposes motion.
   b) Friction helps objects slide indefinitely.
   c) Friction is always harmful.
   d) Friction does not depend on the surface type.
2. Which type of friction is the least?
   a) Static friction
   b) Sliding friction
   c) Rolling friction
   d) Fluid friction
3. Ball bearings are used in machines because they:
   a) Increase friction
   b) Convert rolling friction into sliding friction
   c) Reduce friction by converting sliding friction into rolling friction
   d) Make surfaces rougher

Answer the following questions:

4. Why do cars and bicycles have treaded tyres instead of smooth tyres?

   _____
   _____

5. If a book is pushed on a table, it eventually stops. Why does it not keep moving forever?

   _____
   _____

6. Explain how friction can be both helpful and harmful in everyday life. Give two examples for each.

   _____
   _____
   _____
   _____

Answer Key

1. a) Friction always opposes motion
2. c) Rolling friction
3. c) Reduce friction by converting sliding friction into rolling friction
4. Treaded tyres provide better grip by increasing friction between the tyre and the road, preventing skidding, especially on wet or uneven surfaces.
5. The book stops due to friction between its surface and the table. This force opposes motion and gradually reduces the book's speed to zero.
6. Friction is helpful in:
    - Walking (prevents slipping)
    - Writing (pen/pencil grip on paper)

    Friction is harmful in:
    - Wear and tear of machine parts
    - Wastage of energy in the form of heat

Learning Level Tracker

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Name of the School:	**UDISE:**
Block:	**District:**
Name of the Teacher:	**Assessment Date:**

Class: 8		Subject: Science		
Roll No.	Name of the Student	Chapter: Friction		
		Level 1	Level 2	Level 3

Chapter 10 : Sound

Activity 1 Feeling the Sound

35 mins

Materials Required

Rubber band, box, steel plate, spoon

Instructions

- Begin the activity by clapping your hands loudly and ask students to also clap their hands. Then, ask students:
  - What did you hear?
  - What do you think caused the sound?
- Introduce the term vibration: *Vibration is a rapid back-and-forth movement of an object around a central position (or equilibrium point). In simpler words, when something moves quickly to and fro or shakes repeatedly, it is said to be vibrating.*
- Explain to students that vibration is essential for sound to be produced.
- Keep the following things at three designated areas:
  - Area 1: A note on a wall with instructions: Place your ear on the wall and knock on the wall with your fingers. Can you hear anything?
  - Area 2: Stretch a rubber band over a pencil box. Students are to pluck it and observe the movement and sound.
  - Area 3: A bowl filled with water and a spoon. Students are to stir the water gently and observe the vibrations.
- Once the students have visited all the areas, have a discussion with the whole class with the following questions:
  - What did you feel when you touched the object?
  - Could you see or feel something moving?
  - When did the sound stop? (When vibration stopped)
- Conclude the activity by explaining to students that sound is produced when objects vibrate. If there is no vibration, there is no sound.

Activity 2 Sound under Water

35 mins

Materials Required

A large bowl, or bucket filled with clean water, a small metal object (like a spoon) or two small stones

Instructions

- Begin the activity with a question: "Can you hear sounds under water?"
- Explain briefly that sound needs a medium to travel.
- Fill a bucket or large bowl with water.
- Ask a few students to come forward, put their ear close to (but not inside) the water surface.
- Ask another student to tap a stone or a spoon against the wall of the bowl.
- Students to listen carefully and observe: Is the sound louder, softer, sharper, or duller?
- Ask students:
  - Was the sound louder or softer underwater compared to in air?
  - Was the sound clearer or muffled?
  - Does sound travel faster in water than in air?
- Explain to students that in water, particles are closer together, allowing sound waves to pass through faster and making the sound appear louder and clearer.

Activity 3 Noise Mapping

35 mins

Materials Required

Notebook, coloured pens/pencils

Instructions

- Begin the activity with a short discussion on what noise pollution is, its sources, and effects on health (e.g., stress, hearing issues, sleep disruption).
- Divide the students into groups and assign each group an area (canteen, playground, classroom, corridor, near the main road, etc.). If these are not available/accessible, you can assign other areas around (like a park, a house, a main road, a shop etc.) Please ensure the safety of all the students.
- Give groups 10 minutes to observe the area and note:
  - Main sources of sound
  - Whether the sound is continuous, intermittent, or sudden

- After coming back to class, ask groups to make a map of the area and mark their findings using colour codes:
  - Green = quiet
  - Yellow = moderate
  - Red = noisy
- End the activity with a discussion on the following questions:
  - Which areas are the noisiest?
  - How can noise be reduced in those areas?
  - What changes would make the school a quieter, healthier place?

Assessment

35 mins

Choose the correct option:

1. Sound cannot travel through:
   a) Solid
   b) Liquid
   c) Gas
   d) Vacuum
2. The number of vibrations per second is called:
   a) Pitch
   b) Amplitude
   c) Frequency
   d) Loudness
3. The unit of loudness is:
   a) Hertz
   b) Decibel
   c) Newton
   d) Metre

Write T for True and F for False:

4. Sound travels faster in liquids than in solids.
5. Human voice is produced by the vocal cords.
6. The higher the frequency, the lower the pitch.
7. Sound can be produced only through vibrations.
8. Noise pollution can affect human health.

Answer the following questions:

9. Why do we see lightning before we hear thunder during a storm?

   _____
   _____
   _____
   _____

10. A metal plate is struck and immediately held tightly—why does the sound stop?

    _____
    _____
    _____
    _____

Answer Key

1. d) Vacuum
2. c) Frequency
3. b) Decibel
4. T
5. T
6. F
7. T
8. T
9. Light travels faster than sound. Hence, we see the lightning first, then hear the thunder.
10. Holding the plate stops its vibration, so it stops producing sound.

Learning Level Tracker

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Level 1: Not able to solve problems and having difficulty comprehending the problem

Level 2: Solves most of the problems with external support

Level 3: Solves problems independently

Name of the School:	**UDISE:**
Block:	**District:**
Name of the Teacher:	**Assessment Date:**

Class: 8		Subject: Science		
Roll No.	Name of the Student	Chapter: Sound		
		Level 1	Level 2	Level 3

Chapter 4 : Combustion and Flame

Activity 1 Combustion Sorting

35 mins

Materials Required

Blackboard, chalk

Instructions

- Begin the activity by asking: *"What happens when a candle burns? Why doesn't a stone burn?"*
- Explain to students the meaning of combustion.
- Divide the students into groups.
- Draw a table on the board with names of some combustible and non-combustible items (for example: paper, wood, metal spoon, candle, stone, plastic, matchbox, glass).
- Start with one item in the table and ask a group to predict whether it is combustible or not. Write their answer in front of the item. Invite the rest of the groups to challenge the answer if they feel it is incorrect. If the answer is incorrect, the team that made the guess loses a point and the team that challenged it wins a point.
- Conclude the class by discussing: What makes a substance combustible? Why are some materials like stone and glass non-combustible?

Activity 2 Understanding Acid Rain

35 mins

Materials Required

Two clear cups, chalk pieces, water, vinegar or lemon juice (to simulate acid rain)

Instructions

- Begin the activity by informing students that today we will be learning about acid rain.
- Fill both cups halfway with water.
- In Cup A, add a few drops of vinegar or lemon juice (this simulates acid rain).
- In Cup B, leave plain water (acts as normal rain).
- Drop one chalk piece in each cup.
- Ask students to observe the changes after 5–10 minutes (chalk in vinegar will fizz or dissolve faster).

- Ask students to record:
  - Which cup showed more bubbling/fizzing?
  - What does this tell us about how acid rain affects buildings/statues made of marble (like the Taj Mahal)?
- Extend the discussion to its effects on soil, water bodies, and plants.
- Conclude the activity by discussing the following questions and giving explanations:
  - What causes acid rain in real life?
  - What can we do to reduce it?

Activity 3 Two Corners – True or False

35 mins

Materials Required

List of true/false statements

Before the activity

Label two corners of the classroom, one as "TRUE" and the other as "FALSE"

Instructions

- Explain the rules of the game to the students:
  - You will read a statement from the chapter.
  - Students have 5 seconds to decide if it is true or false.
  - They must walk/run to the corner they believe is correct.
- Read each statement aloud. Once all students have chosen a corner, reveal the correct answer and explain briefly.
- Sample Statements:
  - Paper is a non-combustible material. → (False)
  - Combustion always produces a flame. → (False)
  - LPG is an example of a gaseous fuel. → (True)
  - A fuel catches fire only when it reaches its ignition temperature. → (True)
  - Water is a good extinguisher for oil fires. (False)
  - Glass can burn if heated enough. (False)
  - Incomplete combustion produces carbon monoxide. (True)
  - The outermost zone of a flame is the hottest. (True)
  - Spontaneous combustion needs a matchstick to start. (False)
  - Hydrogen has a very high calorific value. (True)
- Play this activity for fun, along with explaining important aspects to students or conduct it to assess students' understanding of the concepts.
- Conclude the activity by asking students the following:
  - Which statements surprised you?
  - What did you learn about combustion and fire safety?

Assessment

35 mins

Choose the correct option:

1. Which of the following is a combustible substance?
   a) Glass
   b) Iron rod
   c) Paper
   d) Stone
2. Which fuel has the highest calorific value?
   a) Kerosene
   b) Wood
   c) Cow dung cake
   d) Hydrogen
3. The hottest zone of a candle flame is the:
   a) Outer zone
   b) Middle zone
   c) Innermost zone
   d) Yellow zone
4. A fire in an electrical appliance should be extinguished using:
   a) Water
   b) Oil
   c) Petrol
   d) CO_2 extinguisher

Answer the following questions:

5. Why should water not be used to extinguish a fire caused by petrol?

   _____
   _____

6. Why do some substances burn with flames while others don't?

   _____
   _____

7. A piece of paper burns easily, but a log of wood does not catch fire easily. Explain why.

   _____
   _____

8. Why does a candle not burn when covered with a glass jar?

   _____
   _____
   _____

Answer Key

1. c) Paper
2. d) Hydrogen
3. a) Outer zone
4. d) CO_2 extinguisher
5. Water is heavier than petrol and sinks below it; petrol keeps floating and burning on top.
6. Some substances burn with flames because they produce combustible vapours, while others that do not vaporise on heating burn without flames.
7. Paper has a low ignition temperature, so it burns easily. Wood has a higher ignition temperature and requires more heat to start burning.
8. A candle needs oxygen to burn. Covering it with a glass jar cuts off the oxygen supply, so the flame goes out.

Learning Level Tracker

Keep a record of unit assessment results in the tracker.

As you conduct assessments based on the activities suggested, put a tick mark as per the following:

Level 1: Not able to solve problems and having difficulty comprehending the problem

Level 2: Solves most of the problems with external support

Level 3: Solves problems independently

Name of the School:	**UDISE:**
Block:	**District:**
Name of the Teacher:	**Assessment Date:**

Class: 8		Subject: Science		
Roll No.	Name of the Student	Chapter: Combustion and Flame		
		Level 1	Level 2	Level 3

Chapter 5 : Conservation of Plants and Animals

Activity 1 Vanishing Forests

35 mins

Materials Required

Blackboard, chalk, books to represent a mini forest

Instructions

- Begin the activity with a question: “What do you think a forest gives us?” Let students respond freely — shade, animals, oxygen, food, shelter, rain, etc.
- List all the answers students give on the board under “Benefits of Forests”. Then ask, “What would happen if these trees disappeared?”
- Turn a part of your classroom into a "mini forest". Place books in an area in the class. Tell students that each book represents a tree, and we will listen to a story related to it.
- Now begin the story: “Imagine yourselves as the animals and people living in this mini forest. It is full of life. Everyone lives in harmony. But now, someone wants to cut trees for farming, roads, and buildings.”
- Ask a student to remove the corresponding number of trees when the related instructions are given:
  - A road is being built → 6 trees removed
  - Wood is needed for furniture → 2 trees gone
  - City is expanding → more trees gone
- You can give the instructions more number of times to make the trees disappear.
- After 60% of the mini forest has disappeared, discuss with students its effects: animals lose shelter, tribal people lose their homes, soil is left bare etc.
- And then ask the following questions:
  - “How did it feel when your trees were taken away?”
  - “What problems did the people and animals face?”
  - “Why is deforestation harmful?”
- List students’ answers under “Effects of Deforestation” on the board, next to its benefits and ask students to read them all once again.

Activity 2 Paper Rescue

35 mins

Materials Required

Old newspapers or used paper from notebooks, rough sheets, or worksheets, colours or sketch pens

Instructions

- Begin the activity with a question: “Do you throw away paper with just one or two lines written on it?” Record students’ answers on the board.
- Explain to students that, “Today, we’ll learn how to reuse paper instead of throwing it — and help save trees!”
- Divide students into pairs and ask them to take out a used sheet of paper for this activity. If this is not possible, you can also consider bringing newspapers for this activity.
- Challenge the pairs to turn it into something useful or creative. You can give them some ideas such as:
  - A bookmark
  - A small paper bag/envelope
  - A reminder card
  - A mini notepad (by stapling cut pieces)
- Ask them to decorate it with drawings or positive messages like: I saved a tree today, think before you toss etc.
- Let a few students show what they made and how they reused paper. Display their creations in a corner of the classroom.
- This activity will help students understand the value of reusing paper and reflect on how small actions can protect the environment.

Activity 3 Guess the Place

35 mins

Materials Required

List of statements, blackboard, chalk

Before the activity

Label three corners of the classroom as wildlife sanctuary, national park and biosphere reserve

Instructions

- Briefly explain the three types of places where animals are protected:
  - Wildlife Sanctuary – Animals are protected, limited human activity is allowed
  - National Park – Protection of animals and plants; no human activity allowed
  - Biosphere Reserve – Large area with wildlife, forests, and even people living in buffer zones
- Read aloud a clue to all the students. Example:
  - "This area protects wild animals, and local people can graze cattle here."
  - "This place allows no cutting of trees or human settlement."
  - "It includes zones for research, farming, and tourism."
- Some sample clues:
  - "You can find core, buffer, and transition zones here." → Biosphere Reserve
  - "Kaziranga is one." → National Park
  - "It allows some human activities like collecting firewood." → Wildlife Sanctuary
  - "Strictly protected; no hunting or grazing allowed." → National Park
- After the activity, ask students to share what they learnt about the three places. Draw a table on the board highlighting the key differences. A sample is given below:

Feature	Sanctuary	National Park	Biosphere Reserve
Human activity	Limited allowed	Not allowed	Allowed in some zones
Area type	Moderate	Larger	Largest
Focus	Animals	Animals + Plants	Full ecosystems

Assessment

35 mins

Choose the correct option:

1. Which of the following is not a natural cause of deforestation?
   a) Forest fire
   b) Drought
   c) Building roads
   d) Cyclone
2. Which of the following areas is the largest in terms of protection?
   a) Zoo
   b) Wildlife Sanctuary
   c) National Park
   d) Biosphere Reserve
3. Which species is found only in a particular area and nowhere else?
   a) Endangered
   b) Extinct
   c) Endemic
   d) Migratory
4. The Red Data Book contains:
   a) Medicinal plant data
   b) Wildlife sanctuary records
   c) Endangered species lists
   d) National park maps

Answer the following questions:

5. Explain how deforestation can lead to frequent floods and droughts.

_____
_____
_____
_____

6. Why is biodiversity important for maintaining ecological balance?

_____
_____
_____
_____
_____
_____

Answer Key

1. c) Building roads
2. d) Biosphere Reserve
3. c) Endemic
4. c) Endangered species lists
5. Deforestation disturbs the natural water cycle. Trees absorb water from the soil and release it into the atmosphere through transpiration, which helps in cloud formation and rainfall. When trees are removed, less moisture is released, leading to reduced rainfall and droughts.

   At the same time, without trees to hold the soil and absorb rainwater, heavy rain results in faster surface runoff, which causes soil erosion and flooding. Thus, deforestation increases the chances of both droughts and floods.
6. Biodiversity refers to the variety of living organisms, including plants, animals, and microorganisms, in an ecosystem. It is essential because each species has a specific role — for example, plants produce food, herbivores consume plants, and predators control the herbivore population.

   Loss of any one species can disrupt food chains and affect the survival of others, leading to an imbalance in the ecosystem. Biodiversity also ensures resilience to environmental changes, promotes pollination, seed dispersal, and nutrient cycling, and provides resources like medicine and food for humans.

Learning Level Tracker

Keep a record of unit assessment results in the tracker.

As you conduct assessments based on the activities suggested, put a tick mark as per the following:

Level 1: Not able to solve problems and having difficulty comprehending the problem

Level 2: Solves most of the problems with external support

Level 3: Solves problems independently

Name of the School:	**UDISE:**
Block:	**District:**
Name of the Teacher:	**Assessment Date:**

Class: 8		Subject: Science		
Roll No.	Name of the Student	Chapter: Conservation of Plants and Animals		
		Level 1	Level 2	Level 3

Chapter 6 : Reproduction in Animals

Activity 1 Match the Mode

35 mins

Materials Required

Paper slips with the names of organisms written on them

Instructions

- Introduce the concept of sexual and asexual reproduction or internal and external fertilisation in animals.
- Divide the class into groups.
- Give each group a set of paper slips with names of organisms (e.g., Human, Frog, Amoeba, Hydra, Hen, Dog).
- Students have to write the name of their groups on the slips. Then, sort and paste them under the correct categories on the board:
  - Sexual / Asexual reproduction
  - Internal / External fertilisation
- Discuss the answers with the groups and ask them to justify their sorting.

Activity 2 Egg or Baby?

35 mins

Materials Required

Old newspapers, a box or a bowl

Instructions

- Write a few names of animals on the board that give birth like humans and others that lay eggs. Write them in a jumbled manner.
- Ask students to pick any animal of their choice and say whether they lay eggs or give birth like humans. Based on their answers, make a table on the board.
- After all students are done, ask students: “Do all animals give birth to babies like humans?”
- Explain that some animals give birth to babies (viviparous), while others lay eggs (oviparous).
- After the explanation, go back to the table made based on students’ answers, go through each and correct mistakes through discussion.

- Ask students the following while referring to the table:
  - Which group had more animals?
  - Do all egg-laying animals care for their young ones?
  - Which group mostly shows internal fertilisation?
- Conclude the activity by summarising what students learnt: “Viviparous animals give birth to live young ones. Oviparous animals lay eggs. Both types ensure survival of the species in different ways.”

Activity 3 Pick and Match!

35 mins

Materials Required

Two bowls, chits with prompts/questions (e.g., "Hydra reproduces by...", "Fertilisation produces...") and chits with answers (e.g., "Budding", "Zygote")

Before the activity

Prepare around 10–15 prompts for Bowl 1 based on the main points of the topic and corresponding answers for Bowl 2. Ensure each prompt has one unique, correct answer to maintain clarity.

Instructions

- Begin the activity by dividing students into small teams (groups of 4–5 students).
- A volunteer from each team takes turns to pick:
  - One chit from Bowl 1 (prompt)
  - One chit from Bowl 2 (answer)
- After picking, the team reads the chits aloud and discusses within 30 seconds if the prompt and answer match correctly.
- If correct, the team explains the concept to the class in one or two sentences.
- If incorrect, the chits are returned to the respective bowls, and the next team takes their turn.
- Continue the activity until all prompts are matched correctly or the time limit (say 30 minutes) is reached.
- After the activity, quickly summarise the key concepts covered in the activity, to reinforce learning.
- Example prompts and answers:

Prompts (Bowl 1)	Answers (Bowl 2)
"Hydra reproduces by..."	Budding
"Fertilisation produces..."	Zygote
"The type of fertilisation in frogs is..."	External fertilisation
"Internal fertilisation occurs in..."	Humans
“Organism that gives birth to young ones..."	Viviparous
“Asexual reproduction does not involve..."	Gametes

Assessment

35 mins

Write T for True and F for False:

1. The zygote is a single cell. (____)
2. Amoeba reproduces by budding. (____)
3. Sperm and egg are both gametes. (____)
4. In external fertilisation, the embryo develops inside the female body. (____)
5. A foetus can be identified by its body parts. (____)
6. Internal fertilisation takes place in humans, cows, and hens. (____)
7. In budding, the new individual grows as an outgrowth from the parent. (____)
8. A sperm is larger in size than an ovum. (____)
9. The embryo gets embedded in the uterus for development. (____)
10. Only viviparous animals undergo fertilisation. (____)

Answer the following questions:

11. What is metamorphosis? Give one example.

_____
_____
_____

12. Describe the function of the uterus in the female reproductive system.

_____
_____
_____

13. Why do frogs and fish lay hundreds of eggs while hens lay only one or two at a time?

_____
_____
_____
_____

14. Explain why all the eggs laid by animals during external fertilisation do not develop into new individuals.

_____
_____
_____
_____

Answer Key

1. T
2. F (Amoeba reproduces by binary fission)
3. T
4. F
5. T
6. T
7. T
8. F (Sperm is much smaller than ovum)
9. T
10. F (Oviparous animals also undergo fertilisation)
11. Metamorphosis is a biological process in which an animal undergoes a drastic change in body form during its development from larva to adult.

    An example is a butterfly, which changes from an egg to caterpillar, then pupa, and finally into an adult butterfly.
12. The uterus is the site where the fertilised egg (zygote) gets embedded and develops into an embryo.

    It provides nutrition and protection to the growing embryo until birth.
13. Frogs and fish lay many eggs because external fertilisation occurs in water where many eggs and sperms are lost to water movement and predators.
14. Eggs and sperms released in water can be washed away or eaten by other animals, so not all fertilised eggs survive.

Learning Level Tracker

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Level 1: Not able to solve problems and having difficulty comprehending the problem

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Name of the School:	**UDISE:**
Block:	**District:**
Name of the Teacher:	**Assessment Date:**

Class: 8		Subject: Science		
Roll No.	Name of the Student	Chapter: Reproduction in Animals		
		Level 1	Level 2	Level 3

Chapter 7 : Reaching the Age of Adolescence

Activity 1 Life's Journey – Mapping Human Development

35 mins

Materials Required

Chalk

Instructions

- Ask participants to silently reflect on the following questions:
  - *Think about yourself when you were a baby, then a young child. How are you different now?*
  - *What changes do you see in older people you know?*

  Encourage them to note down their thoughts.
- Ask them to turn to the person next to them and share their reflections. Encourage them to listen carefully to each other's experiences and examples.
- Invite a few pairs to share key points from their discussion with the whole group.

  You may want to list some common themes or interesting insights on the board/chart paper as they share.
- Accept the responses and explain that human life is a journey through different stages.
- Now, draw the following table on the blackboard.

Stages of life	Changes observed
Infancy	
Childhood	
Adolescence	
Adulthood	
Aged	

- Ask them to write down changes according to the stages of life when they occur, from birth to old age.
- Record their responses directly on the blackboard.

  (Note for the teacher: If students need help, offer examples to initiate the activity:
  - **Infancy:** Growth in height, learning to talk, and learning to walk.
  - **Childhood:** Going to school, losing milk teeth.
  - **Adolescence:** Menarche, getting a beard, voice breaking, becoming shy, acne.
  - **Adulthood:** Becoming responsible, being economically independent.
  - **Aged:** Osteoporosis (weakening of bones), menopause, hair turning grey.)

- Write the following questions on the blackboard and discuss them with students:
  - Which life stage shows the most rapid or noticeable changes?
  - Why is understanding these changes, especially during adolescence, important for you?
  - Are all these changes the same for everyone, or do they vary?
- Conclude the activity by discussing the concept of continuous human development and the unique significance of adolescence as a transition phase.

  (Note for the teacher: Encourage students to think about physical, mental, and emotional changes for each stage.)

Activity 2 Height Tracker

35 mins

Materials Required

Chalk, measuring tape, notebook, and pencil

Instructions

- Divide the students into small groups of 4-5.
- Provide each group with a measuring tape and chalk.
- Ask each student in the group to measure and record the height of their peers using a measuring tape and chalk.

  (Note for the teacher: You can also conduct this activity using a string instead of a measuring tape.)
- Tell them to note down their age and current height in their notebook.
- Ask them to calculate their likely adult height using the following formula and table mentioned in their science textbook on page number 80.

Calculation for full height (cm)

$$\frac{\text{Present height (cm)}}{\text{\% of full height at this age (as given in the chart)}} \times 100$$

- Ask them to tabulate the observation in the table after discussing the observation with their group members.
- Encourage them to compare the calculated final height with peers and discuss the variations.

S.no	Name of the student	Present height (cm)	Full height (cm)

- Conclude the activity by discussing the following points with students:
  - Height increases during adolescence due to the elongation of long bones, influenced by hormones like growth hormone from the pituitary gland.
  - There is a variation seen among students, especially differences between boys and girls.

Activity 3 The Food Plate Challenge

35 mins

Materials Required

Two pencils, grains, beans, a cardboard, pebbles, newspaper, glue, and scissors.

Instructions

- Divide students into small groups of 4-5.
- Initiate the activity by simply asking them, "What comes to your mind when I say, 'balanced diet'?"
- Accept the responses and ask them to create a "Balanced Diet Plate" using the materials to represent different food groups.

  (Note for the teacher: Motivate students to use their creativity while creating the Balanced diet plate and use the material: pebble, grains, beans to represent the food items in the plate.)
- Ask them to ensure their Balanced Diet plate contains the following:
  - Grains
  - Pulses
  - Vegetables
  - Fruits
  - Dairy/ other proteins
- Ask them to write the name of each item on their plate and the main nutrient it provides next to it. For example, Rice- carbohydrates, Dal-proteins.
- Also, tell them to represent 1-2 common junk food items on a small corner of their plate by simply writing their name and why it's unhealthy.
- Ask each group to present their plate by briefly explaining the following points:
  - Items included in their balanced diet plate
  - Nutrients present in their food items
  - Junk food, they mentioned, and the reasons to avoid it.

  (Note for the teacher: Make sure that each member of the group gets involved and performs the activity.)
- Encourage them to share their observations with other groups.
- Write the following questions on the blackboard and discuss them with students:
  - Why is a balanced diet especially important for you now, as you are growing? (Connect to energy, focus, strong bones/muscles).
  - From today, what's one small change you could make in your daily food choices?
- Conclude the activity by discussing the concept of a balanced diet and its importance with students.

  (Note for the teacher: Inform students in advance to bring these materials for the classroom activity or arrange the materials yourself if needed.)

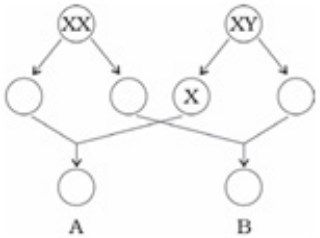
Assessment

35 mins

1. Name the hormone which is released when a person is frightened?
   a) Insulin
   b) Thyroxine
   c) Adrenaline
   d) Growth hormone
2. Which hormone is responsible for the development of tadpoles into frogs?
   a) Insulin
   b) Thyroxine
   c) Adrenaline
   d) Growth hormone
3. Match the following.

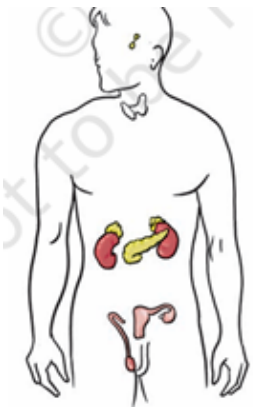
Hormone	Their functions
I. Testosterone	i. Help in the development of the breast
II. Estrogen	ii. Produce insulin
III. Pancreas	iii. Helps the body adjust to stress
IV. Adrenalin	iv. Growth of facial hair

4. Which two male sex organs develop completely at puberty?
5. How can adolescent girls take special care of their hygiene during menstruation?
6. Why do young people get acne?
7. Fill in the blank circles in the given image and identify the sex of child A and child B.

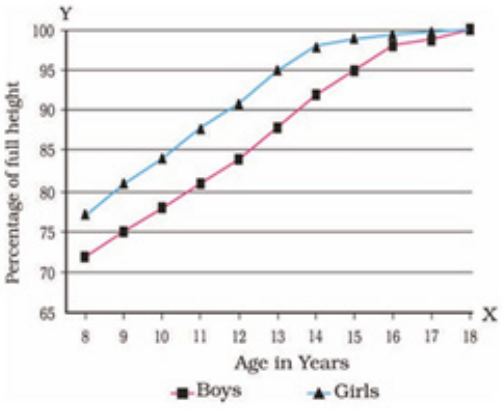


8. What are sex hormones? Why are they named so? State their function.
9. In the given image, mark the positions of the endocrine glands that release the hormones that:

   (a) controls the release of sex hormones.
   (b) is responsible for the secondary sexual characteristics in boys.
   (c) prevents diabetes.
   (d) maintains the correct salt balance in the blood.



10. Observe the chart and graph given in the image carefully and answer the following questions.



Age in Years	% of full height	
	Boys	Girls
8	72%	77%
9	75%	81%
10	78%	84%
11	81%	88%
12	84%	91%
13	88%	95%
14	92%	98%
15	95%	99%
16	98%	99.5%
17	99%	100%
18	100%	100%

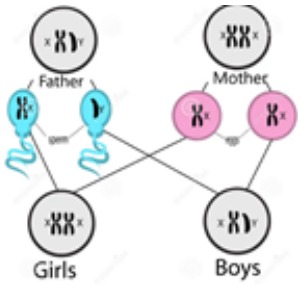
a) Which of the lines represents the height of boys?

b) Which line represents the height of girls?

c) What is the difference between the pattern of increase in the height of boys and girls? d) Is this pattern true for each individual?

Answer Key

1. The correct option is (c)
2. The correct option is (b)
3. I- iv, II- i, III- ii, IV- iii
4. At puberty, male sex organs like the testes and penis develop completely. The testes also begin to produce sperm.
5. Adolescent girls should keep track of their menstrual cycle and stay prepared for its onset. They should use sanitary napkins or clean homemade pads and change them every 4–5 hours as needed.
6. During puberty, the secretion of sweat glands and sebaceous glands (oil glands) increases. Many young people get acne and pimples on the face at this time because of the increased activity of these glands in the skin.
7. Child A is a girl and Child B is a boy.



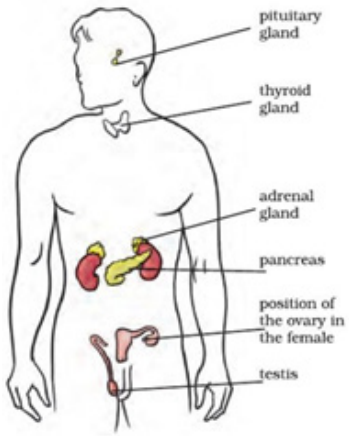
8. Sex hormones are chemical substances produced by a sex gland or other organ. For example, the testes make a male sex hormone called testosterone, and the ovaries make a female sex hormone called Estrogen. These hormones affect the sexual features of an organism. Hence, they are called sex hormones.

   Functions

   Testosterone – It produces male secondary sexual characteristics in boys such as a deeper voice, growth of moustache and beard, broad shoulders and chest, Adam's apple, more muscles, development of reproductive organs, etc.

   Estrogen – It produces female secondary sexual characteristics in girls, such as the development of breasts, broader hips, development of reproductive organs etc.

9. a) Pituitary gland
   b) Testis
   c) Pancreas
   d) Adrenal gland



10. a) The red line represents the height of boys.
    b) The blue line represents the height of girls.
    c) At the onset of puberty, girls grow faster in height than boys, and by the age of 18 years, both reach their maximum height.
    d) No, the rate of growth in height varies among individuals. Some may grow in height suddenly at puberty and then slow down, while others may grow gradually.

Learning Level Tracker

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Level 1: Not able to solve problems and having difficulty comprehending the problem

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Level 3: Solves problems independently

Name of the School:	**UDISE:**
Block:	**District:**
Name of the Teacher:	**Assessment Date:**

Class: 8		Subject: Science		
Roll No.	Name of the Student	Chapter: Reaching the Age of Adolescence		
		Level 1	Level 2	Level 3

Chapter 11 : Chemical Effects of Electric Current

Activity 1 Testing the Conductivity of Local Liquids

35 mins

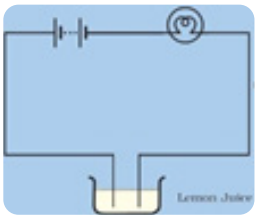
Materials Required

LED/bulb from the discarded torch, wires, cell, beaker, and local liquids: tap water, lemon juice, salt solution, vegetable oil, distilled water, and local herbal juice.

Instructions

- Divide the students into small groups of 4-5.
- Provide each group with the materials required.
- Guide them to make an electric circuit using a cell, an LED, and connecting wires.
- Tell them to take the glass beaker and fill it with tap water.
- Ask them to immerse the two free ends of the wires in a beaker containing water.

  (Note for the teacher: If beakers are not available in the school, you can also conduct this activity using plastic bottle caps or a glass jar.)
- Instruct them to take care that the ends of wires are not more than 1 cm apart, but at the same time, do not touch each other.



- Ask them to observe whether the LED will glow or not while doing the previous step.
- Tell them to repeat the activity with different liquids and check whether the LED glows or not in each case.

  (Note for the teacher: Make sure that each member of the group gets involved in the procedure and performs the activity.)
- Ask them to tabulate the observation in the table after discussing the observation with their group members.

S.No	Liquids	LED glows or does not glow	Good / Poor conductor

- Write the following questions on the board and discuss them with students:
  - Which local liquids conducted electricity best?
  - Why did lemon juice conduct electricity?
- Conclude the activity by discussing the following points with students:
  - The glow indicates whether the liquid allows an electric current to pass.
  - Acidic or saline liquids enhance conductivity due to free ions.

  (Note for the teacher: Inform students in advance to bring these materials for the classroom activity, or arrange the materials yourself if needed.)

Activity 2 Seeing Electricity in Action

35 mins

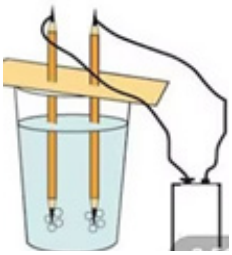
Materials Required

Two pencils, a piece of cardboard, a plastic bowl, water, salt, wires, and a battery.

Instructions

- Divide students into small groups of 4-5.
- Ask them to sharpen two pencils from both sides.
- Now, instruct them to wrap the wires around one end of each pencil. Make sure that wires are wrapped tightly on the lead of the pencil.
- Ask them to connect the other ends of these wires to a battery. These two pencils now act as electrodes.
- Tell them to take the plastic bowl and pour a cupful of water into it.
- Ask them to add a teaspoonful of salt to it and stir gently to mix. This will make the water more conductive.
- Instruct them to carefully fix the pencils in the cardboard as shown in the image and immerse them in the solution.

- Ask them to ensure that the wrapped ends of the pencils (where the wires are attached) stay above the water level.
- Ask them to wait 3-4 minutes and observe the electrodes.



(Note for the teacher: Make sure that each member of the group gets involved in the procedure and performs the activity.)

- Encourage them to share their observation with other groups.
- Write the following questions on the blackboard and discuss them with students:
  - What does the formation of bubbles infer in the activity?
- Conclude the activity by discussing the concept of the chemical effect of electric current with students.

(Note for the teacher: Inform students in advance to bring these materials for the classroom activity, or arrange the materials yourself if needed.)

Activity 3 Potato Detectives: Spotting the Positive Terminal

35 mins

Materials Required

Potato, wires, an LED, and a battery

Instructions

- Divide students into small groups of 4-5.
- Ask students to take a potato and cut it in half.

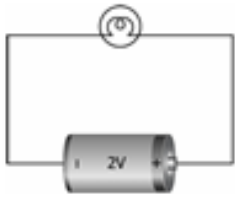
  (Note for the teacher: Ensure your direct supervision while students are cutting the potato, or provide them with the pre-cut potato halves.)
- Distribute materials to each group: one LED, three wires, one battery, and one potato (cut in half).
- Instruct each group to take two wires. Connect one wire to the positive terminal of the battery and the second wire to the negative terminal of the battery.
- Now, connect the free end of the positive wire to one terminal of the LED.
- Take a third wire and connect it to the other terminal of the LED. At this stage, the LED should have two wires connected: one going to the battery and the other free.
- Instruct students to take the two free ends of the wires (one coming from the battery and one from the LED) and carefully insert them into the cut surface of the potato.
- Emphasise that the wire ends should be pushed deep enough to stay in place, but they must not touch each other inside the potato.
- Ask the students to wait for 15–20 minutes and then carefully remove the wires from the potato.
- Encourage each group to share their observations with others.
- Lead a class discussion with questions such as:
  I. What did you observe on the ends of the wires after removing them from the potato?
  II. What does this tell us about the effect of electric current on different materials?
- Conclude the activity by discussing the following points with students:
  - The current passing through the potato causes chemical changes.
  - The greenish-blue colour indicates the movement of ions and chemical reaction, helping identify the positive terminal.

  (Note for the teacher: Inform students in advance to bring these materials for the classroom activity, or arrange the materials yourself if needed.)

Assessment

35 mins

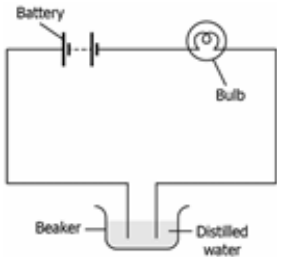
1. A student makes an electric circuit as shown.



Even though the circuit is complete, the student observes that the bulb is not glowing. His friend suggests replacing the bulb with an LED. What makes an LED a better choice for the circuit?

a) LEDs are brighter than bulbs.
b) LEDs consume more energy than a bulb.
c) LEDs eliminate the use of the battery in the circuit.
d) LEDs can glow even when a weak current flows in the circuit.

2. A student makes a circuit as shown.



He notices that the bulb does not glow. What changes in the circuit will help the bulb glow?

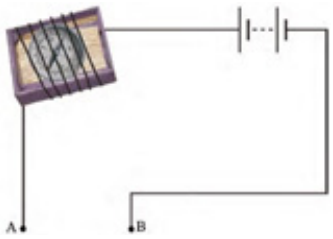
a) Add a pinch of sugar to the beaker
b) Cool the water present in the beaker
c) Heat the water present in the beaker
d) Add a pinch of common salt to the beaker

3. Which of the following solutions will not conduct electricity?

a) vegetable oil
b) lemon juice
c) tap water
d) vinegar

4. Which properties of chromium metal make it suitable for electroplating?
5. Is it safe for the electrician to carry out electrical repairs outdoors during heavy rain? Explain.
6. What are the chemical effects of an electric current?
7. What is the advantage of using a magnetic compass to test the conduction of electric current?
8. Why do you think electroplated jewellery is in demand?
9. Why is tin electroplated on iron to make cans used for storing food?
10. You are provided with a magnetic compass, an empty matchbox, a battery of two cells, and connecting wires. Using these objects, how will you make a tester for testing an electric circuit? Draw the necessary circuit diagram and explain

Answer Key

1. The correct option is (d)
2. The correct option is (d)
3. The correct option is (a)
4. The properties of chromium metal that make it suitable for electroplating are:
   a) It has a shiny appearance.
   b) It does not corrode.
   c) It resists scratches.
5. It is not safe for the electrician to carry out electrical repairs outdoors during heavy downpour because rainwater being a conductor of electricity may cause electrocution of the electrician.
6. When an electric current flows through a conducting solution, it causes the following chemical change:
   a) Bubbles of gas near the electrodes formed.
   b) Deposit of metals may form on electrodes.
   c) Changes in colour of solutions may occur.
7. Sometimes, when the current passing through a conductor is so small that filament of the bulb does not get heated up and the bulb does not glow. In this case, we need magnetic compass to test the conduction of current.
8. Electroplated jewellery is popular because it offers the luxurious look of precious metals like gold and silver at a more affordable price. It is durable, resistant to tarnishing, and allows for intricate designs while being lightweight and comfortable to wear.
9. Tin cans used for food storage are created by electroplating tin onto iron. Since tin is less reactive than iron, it acts as a protective barrier, preventing food from direct contact with iron and safeguarding it from spoilage.
10. 

    Magnetic compass needle shows deflection when current flows through the circuit. This is due to magnetic effect of current.

Learning Level Tracker

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Level 1: Not able to solve problems and having difficulty comprehending the problem

Level 2: Solves most of the problems with external support

Level 3: Solves problems independently

Name of the School:	**UDISE:**
Block:	**District:**
Name of the Teacher:	**Assessment Date:**

Class: 8		Subject: Science		
Roll No.	Name of the Student	Chapter: Chemical Effects of Electric Current		
		Level 1	Level 2	Level 3

Chapter 12 : Some Natural Phenomena

Activity 1 Static Electricity Detective

35 mins

Materials Required

Plastic items (e.g. rulers and pen refills), small paper pieces, woollen cloth (optional)

Instructions

- Conduct the activity in pairs so that students can observe and assist each other.
- Instruct each pair to tear paper into small pieces and place them on their desks.
- Ask them to take a pen refill or plastic ruler and rub it on their hair or a woollen cloth for about 30 seconds.
- Tell them to slowly bring the rubbed item close to the paper pieces, without actually touching them.


- Encourage them to observe what happens to the paper pieces and note their observations.
- Now, give two new pen refills to each pair and ask them to bring the uncharged refills close to each other.

  (Note to teacher: Ensure students use two different, uncharged refills for this step.
- Ask them to observe if there's any noticeable force or movement between the refills.
- Next, instruct them to rub both refills with hair or wool for 30 seconds.
- Tell students to hold each refill by its uncharged end and bring the rubbed ends close to each other—without touching the ends together or touching them with their hands.

- Encourage them to observe the two refills and share their observation with the whole class.
- Write the following questions on the board and discuss them with students:
  - What caused the paper pieces to move toward the refill?
  - Why did the refills repel each other after being rubbed with the same material?

- Conclude the activity by discussing the following points with students:
  - o Rubbing certain materials creates static charges.
  - o Opposite charges attract, which pulls the paper to the charged object.
  - o Like charges repel, as seen when two similarly charged refills push each other away.

  (Note for the teacher: Inform students in advance to bring these materials for the classroom activity or arrange the materials yourself if needed.)

Activity 2 Make Your Seismograph

35 mins

Materials Required

A medium-sized shoe box, a plastic or paper cup, thread or jute string (2 pieces, slightly longer than the box), small weights (like pebbles), a sketch pen, paper (cut and taped into a long strip), tape or cooked rice (to stick paper), scissors and sharp pencil.

Instructions

- Divide students into small groups of 4-5.
- Ask them to predict what kind of line their seismograph might draw when the box is shaken gently or forcefully. Write their predictions in their notebook.
- Now, instruct them to cut off the flaps of the shoe box. Stand the box vertically on one of its smaller sides.
- Now ask them to take the cup and poke two holes on opposite sides near the rim of the cup.
- Ask them to tie a string to each hole on the cup.
- Ask them to poke two holes on the top of the cardboard box, keeping them the same distance apart as those on the cup.
- Push the two strings through the holes on top of the box and tie them together, allowing the cup to hang freely inside. The bottom of the cup should hang about 1 inch above the base of the box.
- Poke a small hole in the centre of the bottom of the cup. Insert a sketch pen (without its cap) through the hole so that the tip barely touches the bottom of the box.
- Fill the cup with pebbles to keep the sketch pen vertical and steady.
- Cut a sheet of paper into four strips. Tape them end-to-end to make a long strip.
- Cut small slots on the bottom edges of the box's two opposite sides and slide the paper strip through these slots, so it lies flat under the hanging marker.
- Ask one student to pull the paper slowly through the slots, and another to gently shake the box side to side to simulate an "earthquake."

- Encourage them to observe the line drawn by the marker on the paper.
- Instruct them to repeat the shaking with more force and observe the change in the pattern.

- Ask them to check the prediction they have made at the beginning with the observation they have made.
- Write the following questions on the blackboard and discuss them with students:
  - What happened to the shape of the line when you shook the box harder? What does this tell you about earthquake strength?
  - How is this model similar to the instruments scientists use to detect earthquakes?
- Conclude the activity by discussing the seismograph with students.

  (Note for the teacher: Inform students in advance to bring these materials for the classroom activity or arrange the materials yourself if needed.)

Activity 3 Make Your Own Charge Detector

35 mins

Materials Required

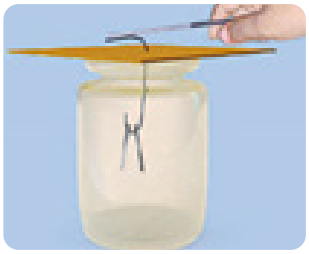
A transparent plastic glass or container, 2 strips of aluminium foil (can be taken from used chocolate or food wrap), a piece of copper wire, a refill, scissors, and a compass.

Instructions

- Divide students into small groups of 4-5.
- Ask students to take an empty transparent plastic container and keep it upside down.
- Instruct them to carefully pierce a hole at the bottom of the glass so that the copper wire can be inserted into it.
- Ask them to twist one end of the wire into a shape of coil and bend the other end to hang the aluminium foil.
- Ask them to cut two strips of aluminium foil about 3cm × 1cm and hang them as shown in the image.

  (Note for the teacher: Ensure your presence and students' safety while they are working with scissors and a compass.)
- Tell them to take a refill and rub it for 30 seconds on their hair.
- Ask students to bring the charged refill near the copper wire without letting it touch the wire and tell them to observe the aluminium foil.
- Encourage them to share their observations with other groups.
- Discuss the following questions with them:
  - What did you observe when you brought the charged object near the electroscope?
  - Why do the foil leaves move apart?
- Conclude the activity by discussing the following points with students:
  - The electroscope detects static electric charge.
  - When a charged object is brought near the wire, charges are repelled or attracted, causing a redistribution of charge in the foil strips.
  - Like charges repel, so the foil leaves move apart.

  (Note for the teacher: Inform students in advance to bring these materials for the classroom activity or arrange the materials yourself if needed. If students don't have a plastic glass, simply conduct this activity using a transparent glass jar (jam jar) or a cardboard.)

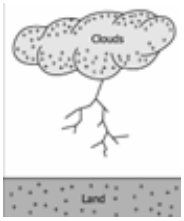


Assessment

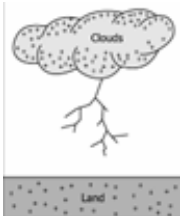
35 mins

1. Which of these images explains the discharge of charges that result in the occurrence of lightning?

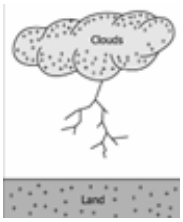
a)



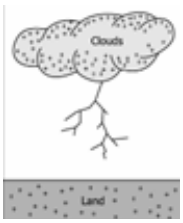
b)



c)



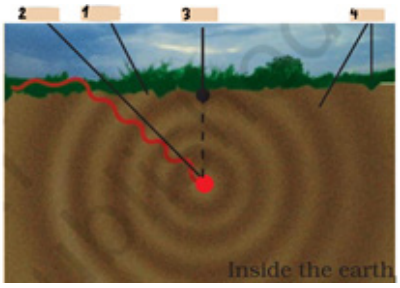
d)



2. Which of the following is responsible for the production of lightning?
   a) Discharge of static electricity
   b) Water vapour in clouds
   c) Movements of clouds
   d) Wind pressure
3. Which of these phenomena is likely to result in an earthquake?
   a) condensation of the water vapour
   b) uneven heating of the Earth's surface
   c) accumulation of charges on the clouds
   d) disturbances occurring deep inside the Earth’s crust
4. Match the following

Column A	Column B
I. Richter Scale	(a) Detects charge
II. Electroscope	(b) Ground safety
III. Like charge	(c) Measures earthquake
IV. Earthing	(d) Repel each other

5. Riya intends to identify the charge in an unidentified object. How does he determine the charge? Which principle does the instrument operate on?
6. What causes the crackling sound when we take off synthetic clothes in dry weather?
7. Explain how lightning is formed during a thunderstorm.
8. Explain how does lightning conductor protects a building from being struck by lightning.
9. Observe the following diagram and answer the following questions:



   a) Label 1, 2, 3, and 4
   b) What are the causes of earthquakes? Explain briefly.
   c) Which zone in India is highly prone to earthquakes?
10. Imagine you are in a school building during an earthquake. List five steps you should take immediately to stay safe. Justify your answer in the context of earthquake safety measures.

Answer Key

1. The correct option is c)
2. The correct option is (a)
3. The correct option is (d)
4. I-c, II-a, III-d, IV-b
5. Riya must use an electroscope to detect the charge in an unknown body. An electroscope is a device that detects the charge in the body. It follows the principle of like charges repel each other.
6. The crackling sound is caused by tiny electric sparks produced when the static electric charges (accumulated due to friction) discharge suddenly when the clothes are removed.
7. During a thunderstorm, air currents move water droplets and ice crystals, causing friction that separates electric charges. Positive charges build up at the top of the cloud and negative charges at the bottom. When the charge difference becomes large, a discharge occurs as lightning, which rapidly heats the air and produces thunder.
8. A lightning conductor does not allow the charge to accumulate on a building and transfers all the charges to the earth, protecting the building from being struck by lightning.
9. a) Labelling: 1- Earth's surface, 2- Focus, 3- Epicentre, 4- Seismic waves
   b) Earthquakes are caused by the sudden release of energy in the Earth's crust due to the movement of tectonic plates. This release of energy creates seismic waves that shake the ground.
   c) Seismic or fault zone
10. Any five correct steps: hide under the desk, avoid windows, no elevators, stay calm, go to an open space.

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Name of the School:	**UDISE:**
Block:	**District:**
Name of the Teacher:	**Assessment Date:**

Class: 8		Subject: Science		
Roll No.	Name of the Student	Chapter: Some Natural Phenomena		
		Level 1	Level 2	Level 3

Chapter 13 : Light

Activity 1 Measuring Angles of Light Reflection

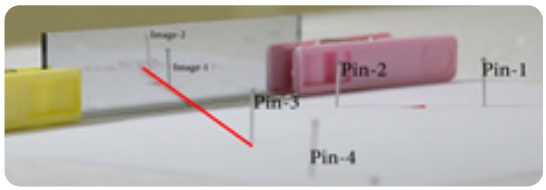
35 mins

Materials Required

Mirror, protractor, 4 pins, pencil, scale, clothespin, and plain sheet of paper.

Instructions

- Divide the students into small groups of 3-4.
- Instruct them to draw a straight line near the centre of their sheet of paper.
- Tell them to carefully place the mirror vertically along this line using a clothespin.
  (Note for the teacher: If students happen to be using small pieces of discarded mirrors, ensure there are no sharp edges. You can cover the edges with tape before conducting the activity.)
- Ask them to draw an incident ray approaching the mirror at an angle.
- Instruct them to fix two pins along the incident ray so they form a straight line.
  (Note for the teacher: You can also conduct this activity using paperclips or matchsticks instead of pins.)
- Now, ask them to look into the mirror and place two more pins so they appear to be in a straight line with the image of the first two pins.



- Tell them to remove all pins and mark small dots where each was placed.
- Ask students to join the dots with a scale to draw the incident ray and the reflected ray.
- Ask them to use the protractor to draw a normal line (perpendicular to the mirror) at the point where the incident ray meets the mirror.
- Ask them to measure the angle of incidence and the angle of reflection using the protractor.
- Write the following questions on the board and discuss them with students:
  - Are the angle of incidence and angle of reflection the same?
  - What do you notice about the direction of the rays before and after reflection?
  - How does changing the angle of the incident ray affect the reflected ray?
- Conclude the activity by discussing the following points with students:
  - The angle of incidence is equal to the angle of reflection.
  - The rays and the normal all lie in the same plane.
  - The path of light changes direction at the mirror surface.

  (Note for the teacher: Inform students in advance to bring these materials for the classroom activity, or arrange the materials yourself if needed.)

Activity 2 Mirror Magic: Exploring Reflections

35 mins

Materials Required

Protractor, two identical small mirrors, clay, a small object (stone, eraser), a strip of paper, a pen, and tape

Instructions

- Divide the students into small groups of 4–5.
- Instruct each group to take two mirrors and place them so that their reflective surfaces face each other, forming a right angle (90°).
- Ask them to tape the mirrors together along one edge so they can open and close like a book.
- Instruct them to leave a small gap at the taped edge to allow the mirrors to move easily like a hinge.

- Provide each group with a sheet of paper and a protractor. Ask them to mark various angles (e.g. 45°, 60°, 90°, 120°, 180°) on the paper.
- Ask them to place the joined mirrors along the lines of the marked angles, aligning the hinge with the centre of the angle.
- Begin the activity with the mirrors set at an angle of 180°.
- Instruct them to place a small object (such as an eraser or a coin) in between the mirrors and observe the reflections.
- Now ask them to adjust the angle of the mirrors to different values such as 120°, 90°, 60°, and 45°, and observe the number of images formed each time.
- Encourage students to record their observations in their notebooks, including the angle and the number of images seen.
- Ask each group to share their findings with others.
- Conclude the activity by leading a class discussion on the concept of multiple reflections and how the angle between mirrors affects the number of images formed.

  (Note for the teacher: Inform students in advance to bring these materials for the classroom activity, or arrange the materials yourself if needed.)

Activity 3 Locating Your Blind Spot

35 mins

Materials Required

A white sheet of paper and a pen.

Instructions

- Conduct the activity in such a way that students perform it individually.
- Ask students to draw a cross and a dot about 6-8cm apart on a white sheet of paper.
- Instruct them to hold the sheet at their arm's length from their eye.

- Ask them to close their left eye and look continuously at the cross.
- Ask them to slowly move the sheet towards themselves, keeping their focus on the cross.
- Tell them to observe what happens to the dot. At a certain distance, the dot will disappear.
- Ask students to close their right eye.
- Ask them to look at the round mark and again move the sheet slowly towards themselves while focusing on the dot.
- Ask them to observe what happens to the cross. It will also disappear at a certain distance.
- Encourage them to share their observations with their peers.
- Conclude the activity by discussing the concept of blind spot with students.

Assessment

35 mins

1. The image represents the human eye. It marks a few parts of the eye as P, Q, R, and S.

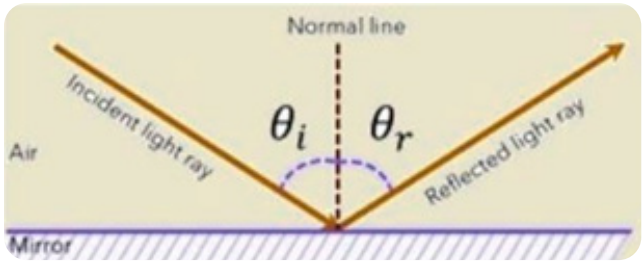
Which part of the eye protects the interior of the eye from accidents?

a) P
b) Q
c) R
d) S

2. A student notices that when using a kaleidoscope, multiple patterns appear inside the tube. What is responsible for the formation of these patterns in the kaleidoscope?

a) repeated reflection of light
b) thickness of the reflecting surface
c) roughness of the reflecting surface
d) a greater amount of light falling on the reflecting surface.

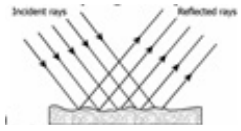
3. Riya traced a ray of incident on a plane mirror. He also plotted the normal to the surface and calculated the angle of incidence to be 80 degrees. What is the angle of reflection?



a) 100°
b) 80°
c) 40°
d) 10°

4. Which of these ray diagrams represents the path of light falling on a rough surface?

a)



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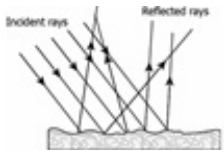
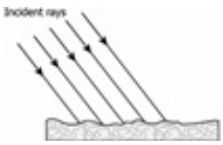
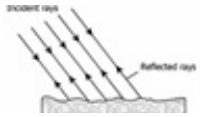


c) 

d) 

5. The angle between the incident ray and reflected ray is 100°. What is the value of the angle of incidence?
6. What kind of lens is there in our eyes? Where does it form the image of an object?
7. What are rods and cones in the retina of an eye?
8. What happens when a ray of light falls perpendicularly on the surface of a plane mirror?
9. Observe the given image. Can the child's image in it be captured on a screen? Explain.

10. How does the eye adjust itself to deal with light of varying intensity?
11. Explain how you can take care of your eyes.

Answer Key

1. The correct option is b)
2. The correct option is (a)
3. The correct option is (b)
4. The correct option is (b)
5. The angle of reflection is equal to the angle of incidence. Since the Angle of the incident ray + the Angle of the reflected ray is 100°.The angle of incidence is 50°.
6. Our eyes contain a convex lens, which helps in focusing light onto the retina at the back of the eye.
7. There are two kinds of light-sensitive cells on the retina.
   a) cones, which are sensitive to bright light and
   b) rods, which are sensitive to dim light.
8. The angle of incidence for such a ray of light is zero. Since the angle of incidence is zero, according to the law of reflection, the angle of reflection should also be zero. This means that the reflected ray will also travel back from the mirror along the normal.
9. a) No, the child's image in the given picture cannot be captured on a screen. This is because the image formed is virtual, meaning it cannot be projected onto a physical surface
10. The iris controls the amount of light entering the eye by automatically adjusting the size of the pupil according to the intensity of the light that the eye receives. If the amount of light is high, the iris contracts the pupil and reduces the amount of light entering the eyes. If the amount of light is less, the iris expands the pupil so that more light can enter the eye and things can be viewed clearly.
11. It is necessary that we take proper care of our eyes. If there is any problem, we should go to an eye specialist. Have a regular checkup.
    a) If advised, use suitable spectacles.
    b) Do not look at the Sun or a powerful light directly.
    c) Never rub your eyes. If particles of dust go into your eyes, wash your eyes with clean water. If there is no improvement, go to a doctor.

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Level 2: Solves most of the problems with external support

Level 3: Solves problems independently

Name of the School:	**UDISE:**
Block:	**District:**
Name of the Teacher:	**Assessment Date:**

Class: 8		Subject: Science		
Roll No.	Name of the Student	Chapter: Light		
		Level 1	Level 2	Level 3

Government of Meghalaya
Education Department

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DIRECTORATE OF EDUCATIONAL
RESEARCH & TRAINING

Reach to Teach
FOUNDATION