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Education Department

DERT
DIRECTORATE OF EDUCATIONAL
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 07

Achieving grade-appropriate learning levels

info@reach-to-teach.org | Tel: 0124 6687881 | Mobile: +91 9099714652

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dertmegh@gmail.com | Tel: 0364-22233248

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Class 7

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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 : Three Questions

Activity 1 Finding Myself

35 mins

Instructions

- 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.
- Read out the passage for the students once and if required explain the passage in the local language.
- Next, ask the students to read the passage on their own and answer the questions below.

Finding Myself

Daisy was a young girl who lived in a small village in Meghalaya. She was always busy helping her parents with household chores and studying for school. But Daisy often felt lost. She would see her friends playing games, and sometimes she would wish she could be like them—carefree and happy.

One day, while walking home from school, Daisy met an old woman sitting by the road. The woman smiled at her and said, "You look worried, dear. Is something bothering you?"

Daisy sat down next to the woman and shared her feelings. "I don't know what I want in life. I feel like I'm always doing things for others but never for myself."

The old woman thought for a moment and then said, "It's important to know who you are and what makes you happy. Self-realisation is when you understand yourself better and find peace with who you are. You don't need to be like anyone else. Be yourself, and your happiness will follow."

Daisy thought about what the old woman had said. The next day, she took some time to sit quietly by the river and think. Slowly, she started to realise that what made her happy was helping others, learning new things, and spending time with her family. She no longer felt lost. Daisy understood that finding herself was about appreciating her strengths and being content with who she was.

A. What did Daisy often feel?
   a) Happy
   b) Confused and lost
   c) Angry
   d) Excited

B. What did the old woman teach Daisy?
   a) To study harder
   b) To be like her friends

c) The importance of self-realisation and being yourself
d) How to play games

C. What did Daisy do the next day?
a) She played with her friends
b) She ignored the old woman's advice
c) She sat quietly by the river to think
d) She went shopping

D. What did Daisy learn about herself after thinking by the river?

_____
_____
_____
_____

E. What is the meaning of 'self-realisation' as taught by the old woman?

_____
_____
_____
_____

Activity 2 Tenses

35 mins

Instructions

- Begin the class by revising the concept of Tenses (make sure you give them enough examples) and write the two paragraphs given below on the board.

Sally wakes up at 7 a.m. every day. She brushes her teeth, makes a cup of tea, and enjoys breakfast. After breakfast, she walks to the bus stop and catches the 8 a.m. bus to her office. She works as a video designer in a small company. Sally is always busy with her projects, but she enjoys the challenge.

Yesterday, however, was different. Sally overslept. She missed the bus and had to take a taxi to work. When she arrived at the office, she realised that she had forgotten an important document at home. She felt stressed but managed to prepare a new one in time for the meeting. By the end of the day, she was exhausted, but she was happy that everything turned out well.

- Ask the students to read the paragraphs and spot the differences between the two by focusing on the verbs used in the two paragraphs.
- As students identify the differences, write them on the board.
- Ask them to identify the verbs in the first paragraph and second paragraph.
- Explain to them that by changing the form, verbs take the shape of Past Tense.
- Invite students one by one to the board and ask them to underline the verbs in Present Tense and circle the verbs in Past Tense.
- Give the students a few minutes to look at the verbs in Present Tense and Past Tense.

- Next, write the following sentences on the board and ask the students to copy the sentences in their notebooks and do the given activity.

Choose the correct verb form (present or past tense) to complete the sentences:

A. Sally _____ (wake/wakes) up at 7 a.m. every day.
B. Yesterday, Sally_____ (oversleep/overslept) because her alarm didn't go off.
C. After breakfast, she _____ (walks/walked) to the bus stop.
D. She _____ (catch/caught) the 8 a.m. bus today.
E. She _____ (forget/forgot) her presentation at home yesterday.

Activity 3 My Meghalaya

35 mins

Instructions

- Begin by asking students, **"What makes Meghalaya special to you?"**
- Discuss some of the unique aspects of Meghalaya, such as its natural beauty (e.g., living root bridges, waterfalls, forests), its rich cultural heritage (e.g., traditional festivals, Khasi, Garo, and Jaintia cultures), and its people.
- Divide the class into pairs or small groups.
- Ask each group to come to a consensus of one thing they love most about Meghalaya—whether it is a festival, a place, a traditional activity, or a family custom. Give them a few minutes to prepare points on the chosen topic, to share with the whole class.
- A representative from the groups will then speak for 2-3 minutes about their chosen topic, explaining why it is important to them and how it makes them feel connected to their roots.
- After the speaking session, ask the students to write a short essay (about 100-150 words) on the following topic: **"My Meghalaya"**. (If there is less time, the writing part can also be given as a homework assignment).
- In their writing, students should include their personal experiences and things they love about their community.
- They should mention the specific aspects of Meghalaya that make them proud.

Chapter : The Squirrel

Activity 1 The Clouded Leopard

35 mins

Instructions

- 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.
- Read out the passage for the students once and if required explain the poem in the local language.
- Ask the students to read the poem and answer the questions below.

The Clouded Leopard

In the misty hills so high,
Where the clouds kiss the sky,
Lives the clouded leopard, sleek and shy,
With a coat of spots, a silent sigh.

It leaps through trees with silent grace,
A ghost in the jungle, leaving no trace,
With eyes that gleam in the night's embrace,
It roams the forests, its secret place.

In Meghalaya's shadows, wild and free,
It hides in the mist, as you can't see,
The clouded leopard, a mystery to be,
A symbol of nature's quiet decree.

A. Where does the clouded leopard live?
   a) In the deserts
   b) In the forests of Meghalaya
   c) In the plains of India
   d) In the cities

B. How is the clouded leopard's coat described in the poem?
   a) Solid black with stripes
   b) Golden with spots
   c) A coat of spots with a sleek texture
   d) White with red patches

C. How does the clouded leopard move through the forest?

a) By flying
b) By running loudly
c) Leaps through trees with silent grace
d) By crawling on the ground

D. What characteristic of the clouded leopard is highlighted in the poem?

_____
_____
_____
_____

E. What is the clouded leopard's role in the poem?

_____
_____
_____
_____

Activity 2 Adverbs

35 mins

Instructions

- Write a few sentences on the board, such as:
  - She sings beautifully.
  - He ran quickly to catch the bus.
  - The baby cried loudly.
- Ask the students to identify the verbs and the words that modify the verbs in the sentences.
- Discuss the concept of adverbs briefly.
- Write the following sentences on the board and ask the students to identify the adverbs by underlining them:

  Yesterday, the dog barked loudly at a passing car. He often waits patiently by the gate, eagerly hoping for someone to come home.
- Write the activity on Adverbs given below on the board and ask students to complete it:

Fill in the blanks with correct adverbs-

A. She speaks English _____.
(fluently / fast / loudly)

B. They completed the project _____.
(quickly / careful / suddenly)

C. He _____ finishes his homework every day.
(always / rarely / soon)

D. The children played _____ in the park yesterday.
(outdoors / outside / happily)

E. I have _____ visited the museum before.
(never / ever / rarely)

F. My father _____ tells me stories before bed.
(usually / quick / slowly)

G. The sky is _____ clear today.
(extremely / deeply / happily)

H. They arrived _____ at the train station.
(early / loud / softly)

I. The dog ran _____ across the field.
(quickly / rarely / never)

J. The students listened _____ to the teacher's Instructions.
(carefully / slowly / loud)

Activity 3 Skit Writing

35 mins

Instructions

- Begin the class with a discussion on what a skit is.
- Print out the following example of a skit and distribute it. If you are unable to print it, you may write it on the board.

Squirrel: *(happily)* "Look at all the acorns I've collected! Winter's coming soon, and I want to be ready. What are you guys doing for winter?"
Rabbit: *(worriedly)* "Oh, I don't know if I've gathered enough food yet. I've been busy hopping around and eating carrots, but what if it snows early?"
Fox: *(confidently)* "I don't worry about that. I'll find food when I need it. But my den is all set up. A cosy spot for a long nap through the winter!"
Owl: *(calmly, perched on a branch)* "Winter's just a season. We all have our ways of preparing. I'll be watching over the forest, as usual, hunting at night."
Squirrel: *(excitedly)* "I like to stay busy, collecting as much as I can. But maybe I'll take a nap soon too."

Rabbit: *(hopping nervously)* "Maybe I should start gathering more. Just to be safe. I can't run around if there's too much snow."
Fox: *(with a sly grin)* "Don't worry too much, Rabbit. You'll be fine. Just stay sharp!"
Owl: *(wisely)* "Remember, each of us has our own way to adapt. No need to rush. The forest will guide us."

- Divide the students in groups and ask them to create a conversation on the given situation: Four animals — a squirrel, rabbit, fox, and owl — meet in a peaceful forest clearing during the early days of spring. The snow has just melted, and the animals are starting to notice the changes in their environment. They're excited to talk about the new season, the food they find, and the challenges they face as the weather warms up.
- Once the groups have written the conversation, ask them to now prepare a short skit to present to the class.

_____
_____
_____
_____
_____
_____
_____
_____
_____

UNIT: 1 Assessment

35 mins

Section A (Literature)

Choose the correct answer from the given options-

1. Why did the king want to know the answers to the three questions?
   a) To make his kingdom prosperous
   b) To help him make better decisions
   c) To gain power over his enemies
   d) To become a wise ruler
2. Who gave the king the answers to his three questions?
   a) A wise man
   b) A hermit
   c) A soldier
   d) A merchant
3. What is the main theme of the poem "The Squirrel"?
   a) The beauty of nature
   b) The habits of a squirrel
   c) The importance of trees
   d) The relationship between humans and animals

Answer the following questions-

4. Why was the King advised to go to the magicians?

_____
_____
_____
_____
_____

5. How is the squirrel described in the poem?

_____
_____
_____
_____
_____

6. What were the hermit's answers to the three questions? Write each answer separately.

_____
_____
_____
_____
_____
_____
_____
_____
_____

Section B (Grammar)

Circle the adverbs that modify the verbs in the sentences.

1. She always plays the piano beautifully.
2. They were running quickly towards the finish line.
3. I will study harder for the next test.

Section C (Writing)

Write a short paragraph about your first day in the new class at school in 100-150 words. Describe the subjects you enjoyed, the activities you did, and how you felt by the end of the day. Make sure to include at least one fun or interesting moment from your day.

Structure your paragraph:

- **State the day:** Mention that it was your first day in the new grade.
- **New classroom:** Describe the new classroom and how it looked.
- **New classmates:** Mention whether you knew anyone or if you met new people.
- **New teacher:** Briefly mention the teacher and their approach to welcoming students.
- **What you did in class:** Mention any ice-breaker activities or introductions.
- **First lesson:** Briefly describe the first lesson or topic you learned.
- **Challenges faced:** Talk about any difficulties you faced, like remembering the schedule or making new friends.

UNIT: 1 Answer Key

Section A (Literature)

1. b) To help him make better decisions
2. b) A hermit
3. b) The habits of a squirrel
4. The King was advised to go to the magicians because he wanted answers to three important questions. He believed that if he knew the answers to these questions, he would be able to rule his kingdom wisely and make the best decisions. The magicians were thought to have the knowledge to provide the answers.
5. In the poem "The Squirrel," the squirrel is described as small, playful, and lively. The poet describes its grey fur and its "striped coat" which gives it a neat appearance. The squirrel is also portrayed as energetic, hopping and moving swiftly. The poet's playful tone highlights the squirrel's cute and mischievous nature, especially with the description of its tail that resembles a "question mark."
6. In the story "Three Questions," the hermit's answers to the king's three questions are as follows:
   - The most important time is the present. The hermit explains that the present moment is the only time we can do something to help others or make a difference.
   - The most important person is the one you are with. The hermit emphasises that the person you are interacting with at that moment is the most important, as that is the person who needs your attention and care.
   - The most important task is to help the person you are with. The hermit tells the king that helping others is the most important task, as it is through acts of kindness and care that we find true fulfilment.

Section B (Grammar)

1. She always plays the piano beautifully.
   Verb (Tense): plays (Present Tense)
   Adverb: always, beautifully
2. They were running quickly towards the finish line.
   Verb (Tense): were running (Past Continuous Tense)
   Adverb: quickly
3. I will study harder for the next test.
   Verb (Tense): will study (Future Tense)
   Adverb: harder

Section C (Writing)

A Day at School

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?
- 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: 7		Subject: English		
Roll No.	Name of the Student	Unit: 1		
		Chapter Names:	1. Three Questions	
			2. The Squirrel	
		Level 1	Level 2	Level 3

UNIT : 2
Chapter : A Gift of Chappals

Activity 1 The Little Red Umbrella

35 mins

Instructions

- Print out the following passage and distribute it in groups or write the passage on the board.
- Read out the passage for the students once and if required, explain the passage in the local language.
- Divide the class into pairs.
- Assign one student to play Sophie and the other to play the elderly woman.
- Provide each pair with the context of the rainy-day scenario.
- Ask students to imagine they are in this situation: Sophie is walking home in the rain and sees an elderly woman at the bus stop without an umbrella. If you were in Sophie's place, what would you do?
- After each pair has performed their roleplay, ask the class to reflect on the following:
  - How did it feel to play the role of Sophie? How about playing the elderly woman?
  - What did they learn about kindness from the roleplay?
  - How can they apply this lesson of kindness in their daily lives?

The Little Red Umbrella

One rainy afternoon, as the sky was covered with thick, dark clouds, a little girl named Sophie was walking home from school. She was carrying a bright red umbrella to protect herself from the heavy downpour. As she walked through the streets, she noticed an elderly woman standing at a bus stop, drenched in the rain, with no umbrella to shield her.

Sophie felt sorry for the old woman. She knew how uncomfortable it could be to stand in the rain without any protection. Without thinking twice, Sophie hurried over to the elderly woman and offered her umbrella. "Would you like to share my umbrella, ma'am?" she asked kindly.

The old woman smiled warmly and said, "Thank you, dear. I don't want to trouble you, but I would really appreciate it."

As they stood together under the umbrella, the old woman shared stories from her youth, and Sophie listened with great interest. She had never expected that something as simple as sharing an umbrella could lead to such a meaningful conversation. The rain continued to pour down, but Sophie felt happy knowing that her small act of kindness had made a big difference.

When the bus finally arrived, the old woman patted Sophie on the head and said, "You are a kind-hearted child. Thank you for your compassion. You remind me of the kindness I experienced when I was young."

Sophie smiled as the woman got on the bus, feeling warm inside despite the cold rain. She realised that sometimes, the smallest acts of kindness can create the most lasting memories.

Answer the following questions for homework:

A. What lesson did Sophie learn from sharing her umbrella with the elderly woman?

_____
_____
_____
_____
_____

B. Do you think Sophie's act of kindness made a difference in the old woman's day? Why or why not?

_____
_____
_____
_____
_____

Activity 2 Clauses

35 mins

Instructions

- Share the concept of Clause with the students.
- You can refer to the points mentioned below for the discussion.

Teacher's Notes

Clause: A clause is a group of words that contains a subject and a predicate (verb).
Example: "If it rains, we will stay indoors."
Clause 1: "If it rains" (dependent clause, cannot stand alone).
Clause 2: "We will stay indoors" (independent clause, can stand alone).

"If" in Conditional Clauses: The word "if" introduces a conditional clause, which describes a condition and its possible consequence. Conditional clauses are typically divided into two parts:

Condition (if-clause): "If it rains."
Result/Main Clause: "We will stay indoors."

Types of "If" Clauses

- **Zero Conditional:** General truths or facts.
  - Structure: If + present simple, present simple
  - Example: "If water reaches 100°C, it boils."
- **First Conditional:** Real and possible situations in the future.
  - Structure: If + present simple, will + base verb
  - Example: "If you study, you will pass the exam."
- **Second Conditional:** Unreal or hypothetical situations in the present or future.
  - Structure: If + past simple, would + base verb
  - Example: "If I won the lottery, I would travel the world."

- **Third Conditional:** Unreal situations in the past.
  - Structure: If + past perfect, would have + past participle
  - Example: "If I had studied harder, I would have passed the test."
- **Mixed Conditional:** A mix of time references (past condition, present result).
  - Structure: If + past perfect, would + base verb
  - Example: "If I had woken up earlier, I wouldn't be late now."

- Ask the students to rewrite the following pair of sentences in their notebooks. Ask them to use 'if' at the beginning of the sentence.

1. You study hard. You will pass the exam.

   _____
   _____

2. It rains tomorrow. The picnic will be cancelled.

   _____
   _____

3. You don't eat your breakfast. You will feel hungry later.

   _____
   _____

4. She calls me. I will go to her house.

   _____
   _____

5. We leave early. We can catch the train.

   _____
   _____

6. He had saved money. He could have bought a new car.

   _____
   _____

7. You invite her. She will come to the party.

   _____
   _____

8. They don't hurry. They will miss the bus.

   _____
   _____

9. I find your book. I will return it to you.

   _____
   _____

10. You hadn't forgotten your umbrella. You wouldn't have gotten wet.

    _____
    _____

Activity 3 The Importance of Helping Others

35 mins

Instructions

- Divide the class into pairs or small groups.
- Give each group a scenario where one person needs help, and the other must offer help. Here are a few example scenarios:
  - **Scenario 1**: A friend has lost their wallet and is worried about how to get home. How will you help them?
  - **Scenario 2**: An elderly neighbour is struggling to carry heavy groceries. How can you offer assistance?
  - **Scenario 3**: A classmate is feeling left out during a group activity. How can you include them and make them feel comfortable?
- Each pair will perform a role play, where one student plays the person who needs help, and the other plays the helper. Encourage students to use polite language and act out their roles as realistically as possible.
- After each role play, ask the pair to reflect and write a short paragraph on how it felt to both give and receive help.
- In their writing, students must begin by stating why helping others is important, mention specific ways you can help others (e.g., helping a friend, supporting a family member), how does helping others make you feel? (e.g., happy, proud, satisfied), explain how helping others benefits both the person receiving help and the person helping.

UNIT : 2

Chapter : The Rebel

Activity 1 The Opposite Me

35 mins

Instructions

- Print out the following poem and distribute it in groups or write the poem on the board. Read out the poem for the students once and if required explain the passage in the local language.

The Opposite Me

When they say, "Go left," I turn to the right,
When they say, "Sit still," I leap to a height.
"Be quiet," they say, but I sing out loud,
I stand in the middle of an orderly crowd.

"Do this, do that," they point with a grin,
But I always choose to begin with a spin.
"Don't run!" they shout, but I run even more,
Chasing the wind, my feet off the floor.

"Be careful," they warn, "Watch where you tread,"
But I dance in the rain, and I jump ahead.
I hear all the rules, but I follow my own,
Because sometimes, the best path is unknown.

So, I laugh and I play, and I act as I please,
I do the exact opposite, with grace and ease.
Not to be stubborn or break what is right,
But to find my own way, to follow my light.

- Discuss the poem and explain the idea of opposites. Mention how the speaker of the poem always does the opposite of what is expected.
- In this activity, students will play charades but with an added twist: they will act out the **opposite** of what the prompt says.
- Write down different actions (e.g., walking, jumping, sitting, dancing, running, etc.) on small slips of paper. Fold them and place them on the table.

- Students take turns drawing an action prompt from the table. The challenge is to act out the **opposite** of what the prompt says. For example:
  - If the prompt says "Jump," they must **sit** instead.
  - If the prompt says "Dance," they must **stand still**.
- Split the class into teams and have them guess what the action is after each performance. The team that guesses correctly wins points.
- After the game, ask students how they felt when they had to do the opposite of what they normally would. Was it easy or difficult? How did it make them think about how they approach everyday actions?
- You can give the following questions to students to complete in their notebooks:

Choose the correct answers from the options given:

A. What does the speaker do when they are told to "Go left"?
   a) They stay still.
   b) They turn to the right.
   c) They go in the opposite direction.
   d) They Walk straight ahead.

B. What does the speaker do when they are told to "Be quiet"?
   a) They stop talking.
   b) They ignore the instructions.
   c) They sing out loud.
   d) They leave the room.

C. What does the speaker mean when they say, "Not to be stubborn or break what is right"?
   a) They want to annoy people.
   b) They choose their own way to follow what feels right.
   c) They believe in breaking all rules.
   d) They never listen to anyone.

Answer the following questions:

D. Why do you think the speaker enjoys doing the opposite of what is told?

_____
_____
_____
_____
_____

E. What is the main message the poet is trying to convey through the speaker's actions?

_____
_____
_____
_____
_____

Activity 2 Antonym Charades

35 mins

Instructions

- Start by defining **antonyms** clearly to the class:

- **Antonyms** are words that have opposite meanings. When two words have opposite meanings, they are called antonyms.

  For example:
- The antonym of **"hot"** is **"cold"**.
- The antonym of **"big"** is **"small"**.

- Divide the class into two teams and explain the game. One student from the first team will come to the front and act out a word without speaking. This could be a simple action or an emotion (e.g., happy, fast, tall). Their teammates will guess the word.
- Once the team guesses the word, they will then try to guess the antonym (opposite) of the word acted out. For example, if a student acts out "happy," the antonym would be "sad."
- After one round, the next team will have a chance to do the same.
- The game continues until each student has had a turn to act out and guess. The team with the most correct antonym answers wins!
- Example:

  Student 1 (acting): Pretends to run quickly (the word could be "fast").

  Team guesses: "Fast!"

  Antonym: The team says "Slow" as the opposite of fast.

Activity 3 Dialogue Writing

35 mins

Instructions

- Begin the class with a discussion on dialogue writing.
- Explain to the students that they will be writing a dialogue between two friends. One friend will try to convince the other to join a sports team. Emphasise that the key to this activity is to create realistic, friendly dialogue that incorporates persuasive techniques.
- Discuss the scenario with the students: You are already part of a sports team and wants to convince your friend to join the same team. Your friend is hesitant and has reasons for not wanting to join the sports team (e.g., they are not interested in sports, they're worried they're not good enough, or they're afraid of failure).
- Provide a quick example of a dialogue between two friends:

  Friend A: Hey, why don't you join the soccer team with me? It's a lot of fun, and we've been practicing a lot this week!

Friend B: I don't know... I'm not good at sports. I'd probably mess up and embarrass myself.

Friend A: Oh, don't worry about that! It's not about being the best. We're all there to have fun and get better together.

Friend B: Hmm... I guess I'm not really a team player. I've never been great at working with others in games.

Ask students to write a dialogue between two friends discussing their favourite hobbies. One friend loves to read books, while the other enjoys playing sports. They try to convince each other to try their hobby.

_____
_____
_____
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UNIT: 2 Assessment

35 mins

Section A (Literature)

Choose the correct answer from the given options-

1. Why was Rukku Manni angry with Ravi?
   a) Ravi did not do his homework.
   b) Ravi gave away someone else's chappals to a beggar.
   c) Ravi ignored the beggar.
   d) Ravi was rude to Paati.
2. What did Rukku Manni ask Ravi to tell the beggar?
   a) That there was food in the kitchen.
   b) That the beggar should leave and not come again.
   c) That the beggar was welcome to stay for a meal.
   d) That the beggar should rest for a while.
3. When everyone wears a uniform, what does the rebel do?
   a) He wears fantastic clothes.
   b) He wears the same uniform.
   c) He dresses soberly.
   d) He refuses to wear any clothes.

Answer the following questions-

4. On getting Gopu Mama's chappals, the music teacher tried not to look too happy. Why?

_____
_____
_____
_____
_____

5. If the rebel has a dog for a pet, what is everyone else likely to have?

_____
_____
_____
_____
_____

6. Walking towards the kitchen with Mridu and Meena, Rukku Manni began to laugh. What made her laugh?

_____
_____
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Section B (Grammar)

Rewrite each of the following pairs of sentences as a single sentence. Use 'if' at the beginning of the sentence.

1. You wake up early. You can catch the bus.
2. You take care of your health. You will live a long life.
3. He reads every night. He improves his vocabulary.

Section C (Writing)

Write a short paragraph about your favourite festival. Include details such as the name of the festival, when it is celebrated, the traditions associated with it, and how you personally celebrate it.

Structure your paragraph:

- What is the name of the festival?
- When is it celebrated?
- What are the traditions followed?
- How do you celebrate it in your home/family?

UNIT: 2 Answer Key

Section A (Literature)

1. b) Ravi gave away someone else's chappals to a beggar.
2. b) That the beggar should leave and not come again.
3. a) He wears fantastic clothes.
4. The music teacher tried not to look too happy on getting Gopu Mama's chappals because he felt guilty about accepting them. He knew that the chappals were not his to keep, as they originally belonged to someone else.
5. If the rebel has a dog for a pet, everyone else is likely to have a cat. This is because the rebel always chooses to do the opposite of what everyone else does, so if others have cats, he will have a dog.
6. Rukku Manni began to laugh because she found the situation of the beggar and the chappals amusing. She realised that the children had given away the music teacher's chappals to the beggar, and she laughed at the thought of how things had turned out. The idea of the beggar wearing the music teacher's chappals seemed funny to her, and she couldn't help but laugh.

Section B (Grammar)

1. If you wake up early, you can catch the bus.
2. If you take care of your health, you will live a long life.
3. If he reads every night, he improves his vocabulary.

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: 7		Subject: English		
Roll No.	Name of the Student	Unit: 2		
		Chapter Names:	1. A Gift of chappals	
			2. The Rebel	
		Level 1	Level 2	Level 3

UNIT : 3

Chapter : Gopal and the Hilsa-fish

Activity 1 The Clever Farmer

35 mins

Instructions

- Print out the following passage and distribute it in groups or write the passage on the board.
- Read out the passage for the students once and if required explain the passage in the local language.
- Ask the students to read the passage and answer the questions below.

The Clever Farmer

Once upon a time, in a small village, there lived a clever farmer. One day, he went to the market to sell his goods. While he was on his way, he came across a group of people who were arguing over a large, shiny golden coin that had been found in the village square. The coin was valuable, but there was no one who could prove it belonged to them.

The farmer, who was known for his wit, walked over and said, "I can settle this dispute easily. Let me keep the coin, and tomorrow, we will see who can solve a riddle that I will give them. The one who answers correctly will get the coin."

The villagers agreed, curious to hear the farmer's riddle. The farmer thought for a moment and then said, "Here is my riddle: 'I am always with you, but you can never touch me. I can grow but never shrink. I can be silent, but also loud. What am I?'"

The villagers thought long and hard, but no one could figure out the answer. As time passed, the farmer revealed the answer: "Your thoughts are the answer. They are always with you, but you cannot touch them. They grow but never shrink, and they can be silent or loud."

The villagers were amazed by his cleverness. They realised that the farmer had outwitted them, not by force, but by using his wisdom and wit. They applauded him for his smart thinking, and the farmer, with a smile, returned the coin to the group, teaching them a lesson in cleverness and wit.

Choose the correct answers from the options given:

A. What did the farmer suggest to settle the dispute over the golden coin?
   a) The villagers should divide the coin among themselves.
   b) The villagers should hold a contest to win the coin.
   c) The farmer would give the coin to the smartest person.
   d) The farmer would keep the coin and solve the problem later.

B. What was the riddle given by the farmer?
   a) "I am always with you, but you can never touch me."
   b) "I am loud and clear, but you can never see me."
   c) "I can grow and shrink, but I am invisible."
   d) "I am cold, but I never freeze."

C. What was the answer to the farmer's riddle?

a) A thought.
b) A shadow.
c) A dream.
d) A whisper.

Answer the following questions:

D. How did the farmer use his wit to solve the dispute over the coin?

_____
_____
_____
_____
_____

E. What lesson did the villagers learn from the farmer's actions?

_____
_____
_____
_____
_____

Activity 2 Reported Speech

35 mins

Instructions

- Discuss with the students about direct and indirect speech.
- Give some examples.

	Direct Speech	Indirect Speech
Example 1	"I am going to the market," said Priya.	Priya said that she was going to the market.
Example 2	"Can you help me with my homework?" asked Rahul.	Rahul asked if I could help him with his homework.

- Explain the rules for transforming sentences into indirect speech from direct speech.
- Draw the following table on the board and ask students to complete it:

Direct Speech	Indirect Speech
He said, "I am going to the park."	John said that he will finish his homework tomorrow.
Mom said, "Wash your hands before eating."	
She said, "We enjoyed the party last night."	

	The teacher said that we should revise our notes.
She asked, "What are you doing?"	
	He asked if I had completed the project.
	The coach advised to practice regularly to improve.
They said, "We are watching a movie now."	

Activity 3 Story Writing

35 mins

Instructions

1. Have a discussion with the students on story writing.
2. Discuss about the framework of a story.
3. You may refer to the framework given below.

Teacher's Notes

- **Title:** Start with an engaging title, e.g., “Lost in the Wood”.
- **Introduction (Setting and Characters):** Describe the main characters.
  Set the scene: Where and when does the story take place? (e.g., a forest, a beach, or a quiet town).
  Hint at something unusual or mysterious (e.g., "It was an ordinary day until...").
- **Build-Up (The Problem or Discovery):** Introduce a challenge, problem, or unexpected event.
  Example: "While walking in the woods, they discovered a hidden door in the ground." Make the situation intriguing to grab the reader’s attention.
- **Climax (Action and Solution):** Describe the characters' reactions and efforts to solve the problem. Add suspense or twists to make the story exciting.
  Example: "As they opened the door, they found a staircase leading to an ancient treasure."
- **Conclusion (Resolution and Lesson):** Resolve the conflict or problem (e.g., they find help, escape danger, or solve the mystery). Reflect on the adventure: What did the characters learn or how did they change?
  End with a memorable or thought-provoking sentence

- Give students the following dialogues as a cue:
  Dialogues:
  Character 1: *“Did you hear that strange noise coming from the attic?”*
  Character 2: *“It sounded like footsteps! Let’s check it out.”*
- Divide the students into groups of 4-5.
- Ask the groups to discuss and write a story on the topic taking hints from the dialogues.

UNIT : 3

Chapter : The Shed

Activity 1 The Cow Shed

35 mins

Instructions

- Print out the following poem and distribute it in groups or write the poem on the board.

The Cow Shed

In the morning light so bright,
The cows wake up with the first light,
Their soft eyes blink and start to see,
The peaceful shed where they roam free.

The air is filled with a gentle sound,
Of soft hoofbeats on the ground.
The farmer comes with a steady pace,
A smile upon his kind old face.

The cows stand still, calm and mild,
With coats of brown, black, and wild,
They chew their hay without a sound,
In the cow shed, peace is found.

As the sun begins to set,
The cows are fed and feel content,
They rest in the shed as the day ends,
Their warmth and care, a farmer's friends.

- Start by reading the poem aloud to the class. After reading, discuss the meaning of the poem. Ask the students:
  - What do you think the poem is trying to convey about the relationship between the farmer and the cows?
  - How does the poet describe the cows and the cow shed?
  - What emotions do you feel when reading this poem? Is it peaceful, calm, or something else?
  - What role does the farmer play in this setting?
- Ask the students to imagine the scene described in the poem
  - The cows waking up in the morning light.
  - The peaceful shed with hay and the soft hoofbeats.

- The farmer with a smile on his face.
- Encourage them to picture the colours, sounds, and overall mood of the scene.

- After the visualisation exercise, ask students to draw the scene they imagined.
- After students have completed their drawings, allow time for each student to share their work with the class. They can explain how they interpreted the poem and what elements stood out to them the most.

Activity 2 Subject-Verb Agreement

35 mins

Instructions

- Revise the concept of subject-verb agreement.
- Give some examples and make the students understand the rules for subject verb agreement.

Rule	Explanation	Example
Singular subjects take singular verbs	A singular subject (one person, thing, or idea) requires a singular verb.	The dog runs in the garden.
Plural subjects take plural verbs	A plural subject (more than one person, thing, or idea) requires a plural verb.	The dogs run in the garden.
"I" and "You" use plural verb forms	"I" always takes the plural verb form. "You" can be singular or plural, but the verb remains plural.	I am going to the store. / You are going to the store.
Collective nouns take singular verbs	Collective nouns (group, team, family, etc.) are treated as singular, so they take a singular verb.	The team is playing well.
Two subjects connected by "and" take a plural verb	If the subject is made up of two nouns joined by "and," use a plural verb.	Ravi and Meena are going to the park.
Two subjects connected by "or" or "nor" use the verb that agrees with the subject closest to it	If the subjects are joined by "or" or "nor," the verb agrees with the noun closest to the verb.	Either the cat or the dog is making noise.
Some nouns that look plural but are singular	Some nouns (like news, mathematics, physics) are singular but look plural. These always take a singular verb.	The news is good.
Indefinite pronouns take singular verbs	Indefinite pronouns like everyone, someone, nobody, and anyone are treated as singular, so they take a singular verb.	Everyone is invited to the party.
Subject made of a group of words	When the subject is made up of a group of words, choose the verb according to the main noun.	The teacher with her students is coming. (Teacher is the main noun)

- Have the students form a circle in the classroom.
  The teacher will say a sentence with a missing verb, like:
  - "The dog ___ (bark) loudly."
  - "They ___ (play) football."
- The students must fill in the blank with the correct verb form.
- Each student will take turns saying the correct verb for the sentence. For example:
  - "The dog **barks** loudly."
  - "They **play** football."
- Sample Sentences:
  1. The dog ___ (bark) loudly every morning.
  2. She ___ (read) a book right now.
  3. My friends ___ (play) football after school.
  4. The teacher ___ (give) us a quiz tomorrow.
  5. I ___ (like) to swim in the pool.
  6. The birds ___ (fly) in the sky during summer.
  7. He ___ (watch) TV in the evening.
  8. We ___ (go) to the park on weekends.
  9. The flowers ___ (grow) quickly in the spring.
  10. They ___ (eat) dinner at 7 PM every night.
- After the activity, review the correct answers with the class to reinforce the subject-verb agreement rule.

Activity 3 Writing Formal Letters

35 mins

Instructions

- Have a discussion with the students on the structure of the Formal Letter.
  - **Sender's Address** (Top left) - the address of the person writing the letter. It usually includes the house number, street, city, and postal code. This can be omitted if the letter is printed on letterhead.
  - **Date** (Below sender's address) - the date when the letter is being written.
  - **Recipient's Address** (Left-hand side) - the address of the person or organisation to whom the letter is being sent. Include the title, name, position (if applicable), and full address.
  - **Salutation** (Greeting) - begin with a formal greeting. Use "Dear" followed by the person's title and last name. If you do not know the name of the person, use "Dear Sir/Madam."
  - **Body of the Letter** - this is the main part of the letter, where the purpose is explained. It is often divided into paragraphs:
  - **Introduction**: state the purpose of your letter.
  - **Main content**: provide details or explanations related to the purpose of the letter.
  - **Conclusion**: summarise or state the action you would like to be taken or the response you expect.

- **Closing** - use a formal closing phrase such as "Yours sincerely" or "Yours faithfully".
- **Signature** - after the closing, leave space for your signature (if writing by hand), followed by your name and title (if applicable).
- **Enclosures** (If applicable) - if you are including any additional documents with the letter, mention them here.

- Ask them to write a formal letter on the following topic.

  Imagine you are a student in the class who is facing difficulty with your current seating arrangement. Write a polite letter to your class teacher requesting a change in your seating arrangement. In your letter:

  1. Mention the reason for requesting the change (e.g., difficulty concentrating, distractions from a nearby student, etc.).
  2. Suggest a seating arrangement that would help you improve your learning experience.
  3. Express your willingness to cooperate and your understanding of the teacher's decision.

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UNIT: 3 Assessment

35 mins

Section A (Literature)

Choose the correct answer from the given options:

1. Why did Gopal want to catch a Hilsa fish?
   a) To feed his family
   b) To win the king's challenge
   c) To prove his intelligence
   d) To impress the queen
2. What lesson did the king learn from Gopal's cleverness?
   a) That Gopal was lazy
   b) That appearances can be deceiving
   c) That one must use wit and intelligence to solve problems
   d) That the Hilsa fish was overrated
3. Where does the ghost hide in the shed?
   a) Under the rotten floorboards
   b) In the Almirah
   c) Near the Dusty old window
   d) Behind the curtains

Answer the following questions:

4. What did the king ask Gopal to do to prove that he was clever?

   _____
   _____
   _____
   _____
   _____

5. "But not just yet..." suggests doubt, fear, hesitation, laziness or something else. Choose the word which seems right to you. Tell others why you chose it.

   _____
   _____
   _____
   _____
   _____

6. Explain why no one seemed to be interested in talking about the hilsa-fish which Gopal had bought.

   _____
   _____
   _____
   _____
   _____
   _____
   _____
   _____

Section B (Grammar)

Rewrite the following sentences in reported speech

1. **Direct Speech:** He said, "I have completed my homework."
   Reported Speech: _____
2. **Direct Speech:** "We are going to the park," they said.
   Reported Speech: _____
3. **Direct Speech:** She said, "I will meet you tomorrow."
   Reported Speech: _____

Section C (Writing)

Below is the beginning of a short story. Read it carefully and use your imagination to complete the story in your own words. You can add more details, characters, and events. Try to keep the story interesting and meaningful. Complete the story in 5-7 sentences. Be creative and finish the story with an exciting or meaningful ending.

> *One sunny afternoon, Christine decided to take a walk in Malki park. As she was walking along the path, she noticed something strange lying under a tree. It was a small, old box, half-buried in the soil. Christine bent down to pick it up and opened the box carefully. Inside, she found...*

_____
_____
_____
_____
_____
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_____
_____
_____

UNIT: 3 Answer Key

Section A (Literature)

1. b) To win the king's challenge
2. c) That one must use wit and intelligence to solve problems
3. a) Under the rotten floorboards
4. The king asked Gopal to prove that he was clever by bringing a Hilsa fish into the palace without anyone asking questions or talking about the fish.
5. It shows a sense of doubt and reluctance, as the speaker doesn't want to enter the shed immediately, possibly due to fear or discomfort.
6. No one seemed to be interested in talking about the Hilsa fish that Gopal had bought because Gopal had come up with a clever plan to distract people and make them forget about the fish. When Gopal bought the Hilsa fish, he decided to disguise himself by painting his face and wearing strange clothes. He then went around the palace and even began talking to the king's courtiers, but he did so in such a funny and unusual way that the courtiers and others were more focused on his odd behaviour than on the fish he was carrying. This strategy worked perfectly, and no one noticed or talked about the fish because Gopal had cleverly drawn their attention elsewhere, showing his wit and cleverness.

Section B (Grammar)

1. He said that he had completed his homework.
2. They said that they were going to the park.
3. She said that she would meet me tomorrow.

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.
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- 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. 9. Pacing
- Pacing refers to how quickly or slowly the events unfold in the story.
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Name of the School:	**UDISE:**
Block:	**District:**
Name of the Teacher:	**Assessment Date:**

Class: 7		Subject: English		
Roll No.	Name of the Student	Unit: 3		
		Chapter Names:	1. Gopal and the Hilsa-fish	
			2. The Shed	
		Level 1	Level 2	Level 3

UNIT : 4

Chapter : The Ashes that Made Trees Bloom

Activity 1 The Gift of Compassion

35 mins

Instructions

- Print out the following passage and distribute it in groups or write the passage on the board.
- Read out the passage for the students once and if required, explain the passage in the local language.

The Gift of Compassion

Once, in a small village nestled in the mountains, there lived a kind-hearted girl named Anaya. She was known for her gentle nature and willingness to help others, no matter the situation. One winter, a terrible snowstorm struck the village, and many of the roads were blocked. People found it difficult to go about their daily tasks, and some even ran out of food and supplies.

Anaya, seeing the suffering of her neighbours, decided to do something. She gathered a group of her friends and started to deliver food and firewood to those who needed it most, especially the elderly and families with young children. Though she knew the journey was risky, Anaya's determination and compassion for others kept her going.

One day, while delivering supplies to a family on the far edge of the village, she slipped and twisted her ankle. Despite the pain, Anaya refused to give up. She limped back home, determined to help one more family before resting. Her friends tried to convince her to stop, but Anaya's heart was set on helping. The next morning, as word spread of Anaya's actions, the villagers were moved by her selflessness and courage. They decided to work together to clear the roads, and soon, life began to return to normal. Anaya's compassion had inspired everyone to be more kind and caring toward one another. Her diligence and hard work not only helped others in their time of need but also brought the community closer.

- Divide the class into small groups. Ask students to discuss the following questions within the group:
  - What did Anaya do to show compassion? Can you give examples from the passage?
  - How did Anaya demonstrate diligence despite facing difficulties?
  - What are the benefits of being compassionate and diligent, both for the individual and the community?
- Ask the groups to write a story based on the theme of the passage. Mention that they need to give a title to the story.
- In the end, the groups will share their story with the class.

Activity 2 Question Words Quest

35 mins

Instructions

- Begin the activity by explaining the rules of question words and where each of them are to be used.

Teacher's Notes

Question Word	Used to Ask About	Example Question
What	Things, information, actions	What is your name?
Where	Place or position	Where do you live?
When	Time	When is your birthday?
Who	People	Who is your best friend?
Whom	Object of a verb (formal use)	Whom did you meet yesterday?
Whose	Ownership/possession	Whose book is this?
Which	Choice from a limited set	Which subject do you like most?
Why	Reason	Why are you late?
How	Manner, process, or condition	How do you solve this problem?
How many	Number (countable)	How many pencils do you have?
How much	Quantity (uncountable)	How much water do you drink daily?
How long	Duration of time	How long will it take to finish the work?
How far	Distance	How far is your school from your home?
How often	Frequency	How often do you study at night?

- Write a few scenarios on the board.

Divide the class into small groups of 3-4 students and give each group a scenario. Example Scenario: A lost cat (Questions the students might ask: "Where did you last see the cat?", "What colour is the cat?", "How old is the cat?")

  - In groups, the students will ask questions based on the scenarios provided.
  - One person in the group will write the questions based on the given scenarios.
  - Mention that the groups should not repeat any question words.
- At the end of the activity, the groups will share the questions, and the other groups will share their feedback.
- Correct the questions if necessary.

Sample scenarios:

Scenario 1: A Birthday Party

Scenario 2: A Famous humorous Movie is being discussed in class.

Scenario 3: A School Event

Scenario 4: A Summer Vacation Plan

Scenario 5: A School Field Trip

Scenario 6: A School Sports Event

Scenario 7: A Community Clean-Up Event

Scenario 8: Discussion on a thriller story

Scenario 9: A Family Picnic

Scenario 10: A New Neighbour Moving In

Activity 3 A Story of Compassion

35 mins

Instructions

- Divide students into pairs or small groups.
- Ask each group to think of a scenario where compassion and diligence can be shown.
  - These scenarios could be in a school, at home, or in the community. For example, helping a sick classmate, working on a project as a team, helping a neighbour in need, etc.
- After thinking of a scenario, ask each group will take turns presenting their scenario to the class.
- After the presentations, ask the groups:
  - "Why is it important to show compassion to others?"
  - "How can diligence help us make a bigger difference in people's lives?"
- Ask students to write a short story based on one of the following prompts:
  - "Write about a time when you helped a friend or family member in need. How did your compassion make a difference, and how did your diligent efforts make the situation better?"
  - "Imagine you are in a situation where you need to help a classmate who is struggling with schoolwork. How do you show compassion and work diligently to help them succeed?"
  - "Write a story about a person who faces a big challenge, like running a race or doing an important task. How does compassion from others and their diligent efforts help the person succeed?"

Chapter : Chivvy

Activity 1 The Advice Givers

35 mins

Instructions

- Begin by discussing the poem with the students. Ask them what they think about the advice adults give to young people, as described in the poem.

The Advice Givers

They always say, "You should be kind,
And focus well, clear your mind."
"Don't waste your time, and don't be late,
Be patient, steady, and always wait."

"You must be careful, take good care,
Don't rush too fast, don't go nowhere."
"They've been through it, they always know,
What's right for you, what helps you grow."
But we wonder, with our hearts so free,

Do they understand what it's like to be me?
We love to dream, to run and play,
To make our own choices, in our own way.

They've lived their lives, but we must live ours,
We don't need their rules, their strict, heavy powers.
So let us learn, and let us try,
We'll figure things out, just watch us fly.

- Discuss the theme: How do young people feel when adults constantly tell them what to do? How do adults justify giving advice?
- Divide the class into pairs or small groups.
- Ask each group to brainstorm a list of three pieces of advice that adults often give to young people (such as "study hard," " always be on time," "respect your elders, choose your friends wisely" etc.).
- Then, ask them to write a response to each piece of advice as if they were the young person in the poem. They should express their thoughts on whether they agree or disagree with the advice and why.

Example:

  - Advice: "Always focus on your studies."
  - Response: "I know my studies are important, but I also want to explore other things like painting and playing sports. Balance is important, right?

- After writing the responses, ask the groups to role-play the situation. One student will act as the adult giving advice, and the other will act as the young person responding to the advice.

Activity 2 Article Adventure

35 mins

Instructions

- Begin by explaining the key rules of Articles.

Teacher's Notes

"A" (Indefinite Article)		
Use "a" before words that begin with a consonant sound. Example: a book, a dog, a teacher	Use "a" when referring to something for the first time or when it is non-specific. Example: "I saw a movie yesterday	Use "a" for singular countable nouns. Example: "She has a car."
“An” (Indefinite Article)		
Use "an" before words that begin with a vowel sound (a, e, i, o, u). Example: an apple, an umbrella, an hour.	Use "an" when the word following it starts with a vowel sound, not necessarily a vowel letter. Example: "I have an honest friend" (the "h" in "honest" is silent, so it begins with a vowel sound).	Use "an" for singular countable nouns. Example: "He is an engineer."
“The” (Definite Article)		
Use "the" when referring to something specific or known to both the speaker and the listener. Example: "I saw the book on the table."	Use "the" with singular or plural nouns that are unique or specific. Example: "The sun is shining." (There is only one sun.) Example: "The books on the shelf are mine."	Use "the" with certain geographical names, such names of rivers, oceans, seas, mountain ranges, countries with plural names, and islands. Example: The Himalayas, The Pacific Ocean, The Netherlands, The Bahamas.

- Write a list of nouns on index cards.
  - Nouns Beginning with a Consonant Sound (Use "a"): Dog, Book, Car, Teacher, Flower, Tree, Pen, Cat, Girl, City, House, Pencil, Fish, Ball, Table
  - Nouns Beginning with a Vowel Sound (Use "an"): Apple, Elephant, Orange, Hour, Ink, Umbrella, Ice cream, Airplane, Octopus
  - Nouns that use “The”: Sun, Moon, Earth, Ocean, Sky, Himalaya, Concert, Government, Umiam river, Eiffel Tower, North Pole, President
- Divide the class into teams of 4-5 students each.
- Each team takes turns drawing a noun card. The team must decide and say the correct article (a, an, or the) to use before the noun.
  - Example: If the card says "apple," the team must say "an apple."
  - If the card says "dog," they must say "a dog."

Activity 3 Dialogue Writing

35 mins

Instructions

- Begin the class with a discussion on dialogue writing.
- Explain to the students that they will be writing a dialogue between two siblings who are talking about their overprotective parents and how they need a bit more freedom to enjoy life. The conversation should end with both siblings agreeing on how to approach the situation.

  Sibling 1:

  "You know, I'm tired of how Mom and Dad keep telling us what to do all the time. They won't even let us go out with our friends without asking a million questions!"

  Sibling 2:

  "I know exactly what you mean. They're always so worried about everything. It's like we can't do anything without them watching over us. We're not little kids anymore!"

- Ask the students to continue the conversation by imagining how the siblings would express their feelings about their overprotective parents and discuss how they can ask for more freedom.
- The dialogue should end with both siblings agreeing on a plan or approach to handle the situation in a mature way.

UNIT: 4 Assessment

35 mins

Section A (Literature)

Choose the correct answer from the given options:

1. What happened when the man threw a handful of ashes over the tree?
   a) The ashes changed the appearance of the tree.
   b) The ashes blew into the noses and eyes of the daimio and his wife, causing them to sneeze and choke.
   c) The ashes made the tree grow faster.
   d) The ashes fell to the ground without any effect.
2. What happened when the old man sprinkled ashes on his cherry tree?
   a) The tree grew taller and stronger.
   b) The tree sprouted pink blossoms, filling the air with fragrance.
   c) The tree became covered in snow.
   d) The tree started to wither and die.
3. What is one of the things grown-ups say, according to the text?
   a) Don't walk too fast.
   b) Don't talk with your mouth full.
   c) Don't sit too close to others.
   d) Don't laugh too loud.

Answer the following questions:

4. What did the dog do to lead the farmer to the hidden gold?

   _____
   _____
   _____
   _____

5. When is a grown-up likely to say this?
   Don't talk with your mouth full.

   _____
   _____
   _____
   _____

6. (i) How did the spirit of the dog help the farmer first?
   (ii) How did it help him next?

   _____
   _____
   _____
   _____
   _____
   _____
   _____
   _____

Section B (Grammar)

Fill in the blanks with the correct article (a, an, or the):

1. I saw _____ dog in the park this morning.
2. _____ sun rises in the east.
3. She is _____ honest person.
4. _____ book on the table is mine.
5. We are going to visit _____ Eiffel Tower in Paris next summer.

Section C (Writing)

Write a short paragraph about your favourite season and explain why you enjoy it. Include details about the weather, activities you do, and how it makes you feel.

_____
_____
_____
_____
_____
_____
_____
_____
_____
_____

UNIT: 4 Answer Key

Section A (Literature)

1. b)
2. b)
3. b)
4. In "The Ashes That Made Trees Bloom," the dog led the farmer to the hidden gold by scratching the ground where the gold was buried, indicating the spot to the farmer.
5. A grown-up is likely to say "Don't talk with your mouth full" when a child is speaking while eating, with food still in their mouth. It is a reminder of good table manners and polite behaviour during meals.
6. (i) The spirit of the dog helped the farmer first by guiding him to the hidden gold. The dog scratched the ground, indicating the spot where the gold was buried.

   (ii) Next, the spirit helped the farmer by leading him to the ashes, which he sprinkled on the cherry tree to make it bloom.

Section B (Grammar)

1. I saw **a** dog in the park this morning.
2. The sun rises in the east.
3. She is an honest person.
4. The book on the table is mine.
5. We are going to visit **the** Eiffel Tower in Paris next summer.

Section C (Writing)

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

- Are ideas logically organised and connected?
- Are vocabulary and expressions varied and suited to the topic?
- Are the grammar, punctuation, and spellings mostly, correct?
- Are examples or personal opinions used to make it more interesting?
- Are linking words and phrases (e.g., however, moreover, therefore) used to guide the reader?
- Does it reinforce the purpose or message of the article?
- Is the ending memorable, thoughtful, or thought-provoking?

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: 7		Subject: English		
Roll No.	Name of the Student	Unit: 4		
		Chapter:	1. The Ashes That Made Trees Bloom	
			2. Chivvy	
		Level 1	Level 2	Level 3

UNIT : 5

Chapter : Quality

Activity 1 Sonia's Dream

35 mins

Instructions

- Print out the following passage and distribute it in groups or write the passage on the board.
- Read out the passage for the students once and if required, explain the passage in the local language.

Sonia's Dream

There was once a young girl named Sonia who lived in a small village. She had a dream of becoming a doctor, but her family was poor, and they couldn't afford to send her to a big city for higher education. Despite this, Sonia was determined. She worked hard every day, helping her parents with their farm work, but never missed a chance to study.

Sonia used to read old books and study whatever she could, even under the light of a small lantern at night. Her teachers noticed her dedication and helped her whenever they could, giving her extra lessons and encouragement. Sonia's hard work and commitment to her studies earned her the respect of everyone in her village.

Years passed, and Sonia completed her education with the help of a scholarship. Eventually, she became a well-known doctor in the city, treating people from different walks of life. She often returned to her village, offering free health care to those in need. Sonia's success was a result of her hard work, integrity, and unwavering dedication to her dream.

- Have the students form a circle. Ask each student to take turns and share:
  - What is their dream or ambition?
  - Why is it important to them?
  - What steps are they already taking or plan to take to achieve it?
- Ask each student to write a short paragraph (5-6 sentences) about their dream and how they plan to achieve it. Prompt them with the following guidelines:
  - Start with what their dream or ambition is.
  - Explain why it is important to them.
  - Mention one or two steps they plan to take to achieve it (e.g., practice, learn more about it, talk to people who have the same dream).
- Let them know that dreams can be small or big – all are important!

Activity 2 Phrase Hunt

35 mins

Instructions

- Begin the class by explaining the concept of Phrases.

Teacher's Notes

A **phrase** is a group of words that work together to convey a particular meaning, but it does not form a complete sentence on its own. A phrase lacks a subject and a verb, which are essential parts of a complete sentence. Instead, it expresses an idea or a specific meaning.

For example:

In the morning – This is a time phrase, but it doesn't form a complete sentence.

On the table – This tells you where something is, but it's not a full sentence.

Phrases can be of different types:

1. **Noun Phrase:** A group of words acting as a noun.
   Example: The **big brown dog** ran fast.
2. **Verb Phrase:** A group of words that shows an action or state of being.
   Example: She **has been studying** for hours.
3. **Adjective Phrase:** A group of words that describe a noun.
   Example: The house **with the red roof** is mine.
4. **Adverbial Phrase:** A group of words that describe a verb, adjective, or another adverb.
   Example: She sings **with great enthusiasm**.

- Divide the students into small groups.
- Provide each group with the list of phrases and meanings.

Phrases:

- Break the ice- To make the first move in a conversation or situation.
- Under the weather- To be feeling sick or unwell.
- Hit the nail on the head- To do something very well or accurately.
- Burn the midnight oil- To work late into the night.
- Bite the bullet-To face a difficult or painful situation that must be dealt with.
- A blessing in disguise- To experience something that seems bad but turns out to be good.
- The ball is in your court-To have a choice or responsibility in a situation.
- Cost an arm and a leg-To spend a lot of money on something.
- Piece of cake-Something that is very easy to do.
- Spill the beans-To reveal a secret.

- Ask the students to match each phrase with its correct meaning.
- As a follow-up, ask students to use at least five of these phrases in sentences of their own.
- Ask the students to present the sentences to the class.

Activity 3 Stories of Hard Work and Dedication

35 mins

Instructions

- Divide the students into 4-5 groups.
- Ask the students to discuss any personal stories or experiences where hard work and dedication have helped them achieve something meaningful. It could be related to academics, sports, a hobby, or any personal accomplishment.
  - Share a specific instance where you worked hard to achieve a goal.
  - What challenges did you face during that journey, and how did you overcome them?
  - How did your dedication and perseverance lead to success?
  - How did achieving this goal make you feel?
- After the discussion, each student can write a short paragraph summarising their experience of hard work and dedication and how it led to a positive outcome.

Chapter : Trees

Activity 1 The Silent Guardians

35 mins

Instructions

- Start by reading the poem aloud with the students.

The Silent Guardians

The trees stand tall, with branches wide,
Their roots deep down where secrets hide.
They whisper songs in the gentle breeze,
Their leaves dance softly with the ease.

They give us shade on summer days,
And show us beauty in countless ways.
Their branches cradle nests up high,
Where birds soar freely in the sky.

Through seasons change, they stand so strong,
In winds that howl and rains that song.
They offer fruits, both sweet and ripe,
And with each season, they retype.

In silence, they watch the world go by,
Their quiet strength, no need to cry.
For in their shade, we all can rest,
In nature's arms, we are our best.

- Ask students to identify key ideas in the poem, such as the trees' importance, their role in nature, and the imagery used to describe them.
- Divide the class into small groups (4-5 students per group).
- Ask each group to choose one stanza from the poem that resonates with them or which they find most interesting.
- The group will then role-play or "act out" the stanza in their own creative way. They should think about the actions that best represent the lines, such as:
  - Standing tall like a tree.
  - Mimicking how trees sway in the wind.
  - Pretending to give shade or shelter to others.
  - Acting out how a bird might build a nest in a tree.

Activity 2 Story Chain with Tenses

35 mins

Instructions

- Begin the class by revising the concept of tenses.
- You can refer to the notes given below.

Teacher's Notes

	Past	Present	Future
Simple	Describes an action that is now complete. E.g.: I played football.	Describes a repeated action. E.g.: I play football.	Describes an action which is planned to take place in the future. E.g.: I will play football.
Continuous	Describes an action that happened in the past over a length of time. E.g. I was playing football.	Describes an action that is happening now. E.g.: I am playing football.	Describes an action that will be happening for a length of time. E.g.: I will be playing football.
Perfect	Describes an action that had happened before another action took place. E.g.: I had played football.	Describes an action that has happened. E.g.: I have played football.	Describes an action that will be finished before another action takes place. E.g.: I will have played football.
Perfect Continuous	Describes an action that had been happening before another action. E.g.: I had been playing football.	Describes an action that has started in the past and is continuing. E.g.: I have been playing football.	Describes an action that happens over time before another future action takes place. E.g.: I will have been playing football.

- Divide the class into groups of 6 or 9 students.
- Each group will be given 3-4 verbs written on small pieces of paper – Run, Eat, Sing, Write, Dance, Study, Play, Sleep, Travel, Speak.
- Ask each group to make sentences with the verbs using present, past and future tense.
- At the end, the groups will read out the sentences.
- Correct the sentences if required.

Activity 3 Letter Writing

35 mins

Instructions

- Begin by discussing the importance of trees in the environment with the students. Some key points to discuss:
  - Trees provide oxygen, absorb carbon dioxide, and help in controlling climate change.
  - Trees prevent soil erosion, provide habitat for wildlife, and contribute to the aesthetic value of the surroundings.
  - The consequences of cutting down trees include loss of biodiversity, climate change, and disruption of natural habitats of animals and birds.
- Now, ask the students to write a **complaint letter** to the authorities about the excessive cutting of trees in their area.
  - Describe the problem: mention where and how trees are being cut down, and why it concerns you.
  - Explain the impact of cutting trees: on the environment, wildlife, and community.
  - Suggest a solution: what actions do you think should be taken (e.g., stopping illegal tree cutting, planting more trees, or raising awareness)?

UNIT: 5 Assessment

35 mins

Section A (Literature)

Choose the correct answer from the given options-

1. What was the name of the shop where the narrator's father's boots were made?
   a) Gessler Shoes
   b) Gessler Brothers
   c) London Boot Makers
   d) The Fashionable Boot Shop
2. How did the narrator describe the atmosphere of the shop?
   a) Bustling and busy
   b) Restful, like entering a church
   c) Modern and fashionable
   d) Dark and gloomy
3. What activity does the poem suggest trees are used for in summer?
   a) To play hide and seek
   b) To make cool shade
   c) To make tree houses
   d) To grow apples
4. Do you think Mr Gessler was a failure as a bootmaker or as a competitive businessman?

   _____
   _____
   _____
   _____

5. Which human activities involve the use of trees, or in which trees play an important role?"

   _____
   _____
   _____
   _____

6. What is the significance of the title "Quality"? To whom or to what does it refer?

   _____
   _____
   _____
   _____
   _____
   _____
   _____
   _____

Section B (Grammar)

Fill in the blanks with the correct form of the verb.

1. By the time you arrive, I _____ (finish) my homework.
2. She _____ (read) a book when I called her yesterday.
3. Right now, they _____ (watch) a movie in the theatre.
4. We _____ (visit) the museum next week.
5. Last year, they _____ (travel) to Paris for their holidays.

Section C (Writing)

Write a short paragraph about your favourite hobby. Describe what it is, why you enjoy it, and how it makes you feel.

_____
_____
_____
_____
_____
_____
_____
_____

UNIT: 5 Answer Key

Section A (Literature)

Choose the correct answer from the given options-

1. b)
2. b)
3. b)
4. Mr. Gessler was not a failure as a bootmaker; he created high-quality, well-fitted boots. However, as a businessman, he struggled due to his focus on craftsmanship rather than commercial strategies, which led to his financial difficulties.
5. In the poem "Trees," trees participate in several human activities like making tree houses, swinging swings, hiding in games like 'Hide and Seek,' and hosting tea parties. They also provide shade, grow fruits, and sometimes catch kites.
6. The title "Quality" reflects the high standard of work that Mr. Gessler, the bootmaker, upheld throughout his life. He believed in making each pair of boots with utmost care and precision, ensuring they were comfortable, well-fitted, and durable. For him, quality was far more important than making large profits or competing with other businesses. The title also highlights the contrast between his dedication to craft and the business world's focus on mass production and commercial success. Thus, "Quality" refers to both the exceptional craftsmanship of Mr. Gessler's boots and the values he held as a true artisan.

Section B (Grammar)

1. By the time you arrive, I **will have finished** my homework.
2. She **was reading** a book when I called her yesterday.
3. Right now, they **are watching** a movie in the theatre.
4. We **will visit** the museum next week.
5. Last year, they **travelled** to Paris for their holidays.

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: 7		Subject: English		
Roll No.	Name of the Student	Unit: 5		
		Chapter:	1. Quality	
			2. Trees	
		Level 1	Level 2	Level 3

UNIT : 6

Chapter : Expert Detectives

Activity 1 The Mystery of the Missing Medal

35 mins

Instructions

- Divide the class into small groups (3-4 students per group) and ask them to read the passage given below.

The Mystery of the Missing Medal

Ria and her younger brother Kabir loved solving mysteries in their neighbourhood. They called themselves "The Backyard Detectives." One afternoon, their neighbour Mrs. D'Souza was very upset—her late husband's old war medal had gone missing.

Ria quickly took out her notebook, and Kabir inspected the living room carefully. "Let's retrace your steps," Ria said politely. Mrs. D'Souza said she had cleaned the shelf and opened the windows that morning. Kabir noticed muddy paw prints near the window.

"Do you have a pet?" Ria asked. Mrs. D'Souza smiled, "Just a cat, Muffin." They followed the trail of paw prints to the garden shed. And there, under an old cushion, was the shiny medal!

Mrs. D'Souza was thrilled. "Thank you, Backyard Detectives!" she exclaimed. Ria and Kabir grinned. Another mystery solved!

- Explain to each group that they will work as a "Detective Team" and solve a mystery in a similar manner to the characters in the passage.
- Provide each group with a list of clues, much like the ones in the passage. These could be related to a missing item or a misplaced object. Example clue- The pencil box was last seen on the student's desk during the morning break.
- Ask the teams to create a mystery story using the clues they've been given.
- They will need to determine who, what, when, and where to solve the mystery.
- Once the teams have solved their mystery, ask each team to present their story to the class.
- Ask each team to explain how they used their clues to solve the mystery and describe how they concluded.

Questions for Homework-

A. How did Ria and Kabir solve the mystery of the missing medal?

_____
_____
_____
_____

B. What clue helped Ria and Kabir find the missing medal?

_____
_____
_____
_____
_____

Activity 2 Conjunction Connection

35 mins

Instructions

- Start by explaining what conjunctions are and how they connect two ideas.

Teacher's Notes
Types of Conjunctions

Coordinating Conjunctions (FANBOYS)	Subordinating Conjunctions:	Indirect Speech
These join two equal parts (words, phrases, or independent clauses). For, And, Nor, But, Or, Yet, So	These join a dependent clause to an independent clause. They show relationships like cause, time, condition, or contrast.	These come in pairs and work together to join ideas.
Examples: • I wanted to go outside, but it started raining. • You can have tea or coffee.	***Examples:*** • I stayed home because I was sick. • She went out although it was raining. • We will go if it doesn't rain. Common Subordinating Conjunctions: because, although, if, when, while, since, after, before, unless...	***Examples:*** • Either you apologise or you leave. • Not only is she smart, but also kind. Common Pairs: either...or, neither...nor, not only...but also, both...and, whether...or

- Form groups of 4–5 students (or do it as a whole class circle).
- Write a list of conjunctions on the board to keep in mind: and, but, or, so, because, although, while, since, if, until
- Start a story with one sentence. “Once there was a boy who found a mysterious map.”
- The next student continues the story, beginning their sentence with a conjunction (or including it somewhere in the sentence).

Activity 3 Report Writing

35 mins

Instructions

- Begin the activity by asking the following questions:
  - "Do you have a pet?"
  - If yes, ask: "What type of pet do you have?" (dog, cat, bird, fish, etc.)
- Based on students' responses, draw a table on the board. A sample is given below, which you can improvise upon. It is based on tally marks but you can choose your own tool as well:

Total Students in the Class	Students who have pets	Students who have cats	Students who have dogs	Students who have birds	Students who have fish	Students who have any other pet
18	||||	||	|	||||	|||	||||

- After the survey, divide students into groups.
- Ask the groups to write a report based on the data gathered. The report should be within 10 words summarising the key findings from the survey.
- Example of report structure:
  - **Introduction:** Start with a sentence about the purpose of the survey.
  - **Findings:** Mention how many students have pets and the types of pets.
  - **Conclusion:** Summarise any interesting observations.
- After the reports are written, ask a few student volunteers to share their findings with the class.

Chapter : Mystery of the Talking Fan

Activity 1 The Dancing Fan

35 mins

Instructions

- Read the poem "The Dancing Fan" aloud in class, encouraging the students to pay attention to the details about the fan's movement, its purpose, and its characteristics described in the poem.

The Dancing Fan

Above us spins, so high and bright,
A whirling blur in the soft moonlight.
The ceiling fan hums a gentle song,
Whirling and twirling all night long.

It sways in rhythm, left and right,
Cool and calm in the silent night.
It lifts the air with a gentle breeze,
Swaying the curtains with playful ease.

Around it goes, no time to stop,
A silent dance, with a never-ending hop.
It whispers softly, it moves with grace,
Its dance forever in a steady place.

- After reading the poem, ask the students to answer questions based on the poem.
  - Where does the fan spin, and what does it do in the poem?
  - How does the fan affect the environment in the poem?
  - What is the fan compared to in the poem?
- Now, ask the students to physically enact the fan's movements. Instruct them to use their bodies to demonstrate how the fan spins, sways, and twirls. They should:
  - Spin around in place, as if they are the fan moving in circles.
  - Whirl and twist, mimicking the speed and swaying of the fan's blades.
  - Slow down or speed up based on the description of the fan's work in the poem (they can start spinning fast and slow down when the fan is "tired").

Activity 2 Reported Speech

35 mins

Instructions

- Begin the class by revising the concept of reported speech.
- Give some examples.

	Direct Speech	Indirect Speech
Example 1	"I am going to the market," said Priya.	Priya said that she was going to the market.
Example 2	"Can you help me with my homework?" asked Rahul.	Rahul asked if I could help him with his homework.

- Explain the rules for transforming sentences from direct speech to indirect speech.
- Divide the students into pairs or small groups.
- Each pair will need to act as reporter and speaker.
  - The "Speaker" will say a sentence aloud in direct speech (e.g., "I can't find my pencil.")
  - The "Reporter" will listen carefully and then report the speech in the correct reported speech form. For example, "The speaker said that he couldn't find his pencil."
  - Once the group gets comfortable, switch roles. The "Speaker" now reports what the "Reporter" said, converting it back into direct speech.

Activity 3 Story Writing

35 mins

Instructions

- Divide the class into small groups (4–5 students).
- Give the whole class the same story starter, e.g.: "One rainy afternoon, as I was walking home from school, I heard a strange noise coming from behind the bushes."
- In their groups, students take turns adding one line at a time to build the story orally.
- Ask each group to present their story to the class in a fun and expressive way:
  - Narrator (reads or tells the story)
  - Character(s) (act out or speak a few lines if there's dialogue)
  - Artist (optional) (draw a quick scene to show the class)
- Each student now writes their own version of the story using ideas discussed in the group — but they can change the ending, add characters, or give it their own twist.

UNIT: 6 Assessment

35 mins

Section A (Literature)

Choose the correct answer from the given options-

1. Why was Seven upset after visiting Mr. Nath?
   a) Because Mr. Nath didn't open the door.
   b) Because Mr. Nath was rude to him.
   c) Because Mr. Nath's appearance made him think he was starving.
   d) Because Mr. Nath refused to accept the chocolate.
2. What is Maya's reaction to Seven's comment about Mr. Nath's visitor?
   a) She agrees with Seven that the visitor looks ordinary.
   b) She suggests that criminals can look ordinary, like the man in the newspaper.
   c) She feels sorry for Mr. Nath.
   d) She decides to stop investigating.
3. What happened to the talking fan in the poem?
   a) It stopped talking because it was broken.
   b) Someone oiled its motor, and it became quiet.
   c) It became louder after being oiled.
   d) It stopped working completely.

Answer the following questions-

4. Why does Maya think Mr Nath is a crook?

_____
_____
_____
_____

5. What do you think the talking fan was demanding?

_____
_____
_____
_____

6. Does Nishad agree with Maya about Mr Nath? How does he feel about him?

_____
_____
_____
_____
_____
_____
_____

Section B (Grammar)

Fill in the blanks with the correct word from the options:

1. The artist used a _____ to paint the picture.
   (brush, comb, broom)
2. He was feeling _____ after running the marathon.
   (tired, exhausted, sleepy)
3. The mountain top was _____ with snow.
   (covered, filled, blanketed)
4. I need to _____ my room before the guests arrive.
   (clean, tidy, dust)
5. She was so _____ to hear the good news!
   (happy, joyful, pleased)

Section C (Writing)

Write an article on the importance of reading books. Discuss how reading books helps in gaining knowledge, improving vocabulary, and enhancing imagination. Include personal experiences or examples to support your points. The article should be 150-200 words.

_____
_____
_____
_____
_____
_____
_____
_____

UNIT: 6 Answer Key

Section A (Literature)

Choose the correct answer from the given options-

1. c)
2. b)
3. b)
4. Maya thinks Mr. Nath is a crook because of his mysterious behavior. She suspects that he may be involved in some criminal activity, especially after hearing about the regular visitor who brings him lunches. Maya's suspicion grows as she connects the clues.
5. In the poem "The Mystery of the Talking Fan," the talking fan is likely demanding attention or oiling. The fan's chatter stops after someone oils its motor, suggesting that it was trying to communicate its need for maintenance to work smoothly.
6. No, Nishad does not agree with Maya about Mr. Nath. While Maya is suspicious and believes that Mr. Nath could be a crook, Nishad feels differently. He sees Mr. Nath as an ordinary man and is unable to connect him to any criminal activity. Nishad is more concerned about Mr. Nath's gaunt appearance and feels sympathetic toward him. He even tries to help Mr. Nath by giving him a bar of chocolate. Unlike Maya, Nishad believes that Mr. Nath is simply a quiet, lonely man, not someone who could be involved in any criminal activities.

Section B (Grammar)

1. The artist used a **brush** to paint the picture.
2. He was feeling **exhausted** after running the marathon.
3. The mountain top was **blanketed** with snow.
4. I need to **clean** my room before the guests arrive.
5. She was so pleased to hear the good news!

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 article writing are:

- Are ideas logically organised and connected?
- Are vocabulary and expressions varied and suited to the topic?
- Are the grammar, punctuation, and spellings mostly, correct?
- Are examples or personal opinions used to make it more interesting?
- Are linking words and phrases (e.g., however, moreover, therefore) used to guide the reader?
- Does it reinforce the purpose or message of the article?
- Is the ending memorable, thoughtful, or thought-provoking?

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: 7		Subject: English		
Roll No.	Name of the Student	Unit: 6		
		Chapter:	1. Expert Detectives	
			2. Mystery of the Talking Fan	
		Level 1	Level 2	Level 3

UNIT : 7
Chapter : The Invention of Vita-Wonk

Activity 1 Tashi and the Wind

35 mins

Instructions

- Read out the story for the students once, and if required, explain the poem in the local language.

Tashi and the Wind

Tashi was a 13-year-old boy who lived in a small village high in the mountains. His village often faced strong, noisy winds that shook rooftops, knocked things over, and made it hard to sleep at night. While most people were used to it and just repaired things again and again, Tashi was different — he wanted to understand the wind.

He started paying attention to when the wind blew the hardest. He made notes, built a simple weathervane out of sticks and paper, and watched how fast it spun. One day, while flying a kite, he thought, "If wind can lift a kite, maybe it can help the village too."

Tashi began collecting old parts — broken fan blades, bicycle wheels, wood — and with some guidance from his science teacher, he built a small windmill. After a few tries and many mistakes, it finally worked! The windmill could turn and create enough electricity to light a bulb in his room.

The villagers were amazed. Tashi then helped others build small windmills too. Soon, the village had lights at night without needing fuel. Everyone called him "The boy who worked with the wind." Tashi smiled and said, "The wind didn't change — I just found a way to use it."

- Start by asking the class a few open-ended questions to reflect on the story:
  Why do you think Tashi wanted to do something about the wind instead of ignoring it like others?
  - Did he succeed immediately?
  - What helped him keep going?
  - How did his invention help the village?
  - What do you learn from Tashi's story?
- Now, tell students: "Like Tashi, you can be an inventor too! Think of something in the world you'd like to make better — at school, at home, or in your neighbourhood."
- Tell them to draw their invention with labels.
- Then, have students come to the front, show their drawings, and explain why they want to invent it and how it would help others.
- Gently guide the students wherever necessary.

Activity 2 Tenses

35 mins

Instructions

- Begin the class by revising the concept of tenses. You can refer to the notes given below.

Teacher's Notes

	Past	Present	Future
Simple	Describes an action that is now complete. E.g.: I played football.	Describes a repeated action. E.g.: I play football.	Describes an action which is planned to take place in the future. E.g.: I will play football.
Continuous	Describes an action that happened in the past over a length of time. E.g. I was playing football.	Describes an action that is happening now. E.g.: I am playing football.	Describes an action that will be happening for a length of time. E.g.: I will be playing football.
Perfect	Describes an action that had happened before another action took place. E.g.: I had played football.	Describes an action that has happened. E.g.: I have played football.	Describes an action that will be finished before another action takes place. E.g.: I will have played football.
Perfect Continuous	Describes an action that had been happening before another action. E.g.: I had been playing football.	Describes an action that has started in the past and is continuing. E.g.: I have been playing football.	Describes an action that happens over time before another future action takes place. E.g.: I will have been playing football.

- Ask the students to observe their classroom and surroundings: What our your peers doing now? What do they think someone did earlier, and what will they do later?
- Tell them to write down a few sentences in their notebooks to remember their observations.
- Then, have students come to the front and speak about what they observed.
  - Present tense – something they saw happening right now (e.g., *The gardener is watering the plants*.)
  - Past tense – something that already happened (e.g., *The bell rang five minutes ago*.)
  - Future tense – something they think will happen (e.g., *We will have lunch after this period*.)
- Gently guide the students if they need help with forming correct sentences.

Activity 3 Recipe Writing

35 mins

Instructions

- Pair up the students and ask them to discuss: Their favourite food, why they love it, who makes it at home, or if they've tried making it, what ingredients are used, and simple steps to prepare it.
- Each student of the pair will share the details of their favourite recipe.
- You can give a sample template to help pairs write better:

Jadoh (Traditional Khasi Rice and Meat Dish)

Ingredients:

- 1 cup red/normal rice
- 250 g pork or chicken
- 1 chopped onion
- 2 cloves garlic (crushed)
- 1-inch ginger (grated)
- 2 green chillies (optional)
- 1 tsp turmeric
- Salt to taste
- Mustard oil

Steps:

1. Wash and soak rice for 15–20 minutes.
2. Heat oil, add chopped onions, garlic, and ginger. Sauté until golden.
3. Add pork, turmeric, salt, and green chillies. Cook for 5–7 minutes.
4. Add rice and stir for 2 minutes.
5. Pour water (about 2 cups), cover, and cook on low heat until rice and meat are soft. Serve hot.

- After the discussion, ask them to write the recipe for their partner's favourite dish.
- Then, after writing, students exchange notebooks with their partner, and each partner will read the recipe carefully and check if all the steps have been properly included.
- Invite pairs to come forward and share their favourite recipes while giving feedback to their partners.
- Remind students to use positive and respectful words while giving feedback.

Chapter : Dad and the Cat and the Tree

Activity 1 Rescue Plan

35 mins

Instructions

- Start by reading the poem *Dad and the Cat and the Tree aloud*, and if required, explain the poem in the local language.
- Ask some questions: Have you ever tried to help or rescue an animal (a pet, bird, or a community animal)? What happened? Were you successful? How did you feel?
- Now, put students into pairs and ask them to imagine: "If you were in Dad's place, and saw a cat stuck in a tree, what would you do to help, without falling or getting hurt?" They should discuss and plan together:
  - How would they reach the cat safely?
  - Would they use tools or call for help?
  - What would they do differently from Dad in the poem?
- Ask each pair to come forward and share 3–4 lines about their rescue plan.

Activity 2 Conjunctions

35 mins

Instructions

- Begin the class by revising Conjunctions.

Teacher's Notes
Types of Conjunctions

Coordinating Conjunctions (FANBOYS)	Subordinating Conjunctions:	Correlative Conjunctions
These join two equal parts (words, phrases, or independent clauses). For, And, Nor, But, Or, Yet, So	These join a dependent clause to an independent clause. They show relationships like cause, time, condition, or contrast.	These come in pairs and work together to join ideas.
Examples: • I wanted to go outside, but it started raining. • You can have tea or coffee.	***Examples:*** • I stayed home because I was sick. • She went out although it was raining. • We will go if it doesn't rain. Common Subordinating Conjunctions: because, although, if, when, while, since, after, before, unless...	***Examples:*** • Either you apologise or you leave. • Not only is she smart, but also kind. Common Pairs: either...or, neither...nor, not only...but also, both...and, whether...or

- Ask students to observe things in and around the classroom (or out the window).
- Find two things, actions, or people they can connect using a conjunction.
- Ask them to write down their observations in their notebooks. Examples they might observe:
  - A student reading and another writing
  - The fan is on because it's hot.
  - Some students are working quietly while others are chatting.
  - The board is clean, but the desk is messy.
- Now, have each student come to the front and speak a sentence based on what they observed, joining ideas using conjunctions.
- Ask others to spot and name the conjunction used.
- Gently guide the students if they need help with forming correct sentences.

Activity 3 Role Play

35 mins

Instructions

- Ask the student to observe the picture on page 108 in their textbooks.

- There are 4 characters in the picture, so divide the class into groups of 4. Let them choose who they will be. Ask each group to observe and discuss among themselves:
  - What do they think is happening in the picture?
  - What are the characters doing or saying?
  - How are they feeling?
- Ask each group to write a short dialogue (6–8 lines) based on their interpretation of the scene.
- Then, have each group come to the front and act out their dialogue in front of the class.
- Encourage them to speak clearly and show expressions based on their character.

UNIT: 7 Assessment

35 mins

Section A (Literature)

Choose the correct answer from the given options-

1. What does the potion "Vita Wonk" do?
   a) Makes people younger
   b) Makes people older
   c) Makes people disappear
   d) Makes people invisible
2. What is the oldest living thing Mr. Wonka mentions when planning Vita Wonk?
   a) Douglas fir
   b) Oak tree
   c) Bristlecone pine
   d) Cedar
3. Who is still stuck at the end of the poem?
   a) The cat
   b) Dad
   c) Mum
   d) The poet

Answer the following questions-

4. What motivated Mr. Wonka to invent Vita-Wonk?

   _____
   _____
   _____

5. Why did Dad say "Fall again? Funny joke!" during his attempts to rescue the cat?

   _____
   _____
   _____

6. Describe in detail the process Mr. Willy Wonka followed to invent Vita-Wonk?

   _____
   _____
   _____
   _____
   _____
   _____
   _____
   _____

Section B (Grammar)

Fill in the blanks with suitable conjunctions:

1. I was tired, ___ I went to bed early.
2. He is poor ___ honest.
3. You can have tea ___ coffee.
4. She missed the bus ___ she left home late.
5. Wait here ___ I come back.

Section C (Writing)

Write a paragraph on "My Family". Include the number of members in your family, your parents' occupation, what your siblings are like, what you do together as a family, and why your family is special to you.

_____
_____
_____
_____
_____
_____
_____

UNIT: 7 Answer Key

Section A (Literature)

1. b)
2. c)
3. b)
4. Mr. Wonka created Vita Wonk because the earlier potion, Wonka Vite, had gone wrong: it made people grow younger—some even into negative ages—and disappear. So, he needed a remedy to reverse that, and thus invented Vita Wonk to make people older again.
5. After his second fall (Plan B), when Mum warned him again, Dad dismissed her caution as humorously unnecessary. He brushed off the idea that he could fall from a tree, calling it a "funny joke" due to his overconfidence.
6. Mr. Willy Wonka invented Vita-Wonk to reverse the effects of his earlier potion, Wonka-Vite, which made people dangerously young. He searched for the oldest living things and collected rare ingredients like sap from a 4,000-year-old tree, a tortoise egg, horse tail, and more. After mixing them, he tested the potion on a 20-year-old Oompa-Loompa, who aged rapidly to 75. The test proved that Vita-Wonk successfully caused rapid aging.

Section B (Grammar)

1. So
2. But
3. Or
4. Because
5. Until

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:

- Are ideas logically organised and connected?
- Are vocabulary and expressions varied and suited to the topic?
- Are the grammar, punctuation, and spellings mostly correct?
- Are examples or personal opinions used to make it more interesting?
- Are linking words and phrases (e.g., however, moreover, therefore) used to guide the reader?
- Does it reinforce the purpose or message of the article?
- Is the ending memorable, thoughtful, or thought-provoking?

Learning Level Tracker

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

Class: 7		Subject: English		
Roll No.	Name of the Student	Unit: 7		
		Chapter:	1. The Invention of Vita-Wonk	
			2. Dad and the Cat and the Tree	
		Level 1	Level 2	Level 3

UNIT : 8

Chapter : A Homage to our Brave Soldiers

Activity 1 Salute to Our Soldiers

35 mins

Instructions

- Begin the activity by asking a student to read aloud from a portion of the text, *A Homage to our Brave Soldiers*.
- After a designated portion (e.g., a paragraph, a page), tell the student that they have to say “popcorn" and call on another student to continue reading.
- This process continues until the text is finished.
- While students are reading, ask some questions to ensure that students pay attention and try to comprehend the given text. Some questions that you can ask are:
  - Who protects our country’s borders?
  - What do you think a soldier’s life is like?
  - Have you ever seen a soldier in real life or a film?
  - Why do we have the National War Memorial?
  - What qualities do you think every soldier has?
- After the discussion, ask the students to draw a soldier. They could be in uniform, with the Indian flag, standing at a post or saluting, or near the National War Memorial etc. (You can also observe if the students are drawing a female soldier or not. If not, this can be highlighted once the activity is done).
- Ask students to come forward, show their drawings, and describe what they drew in a few sentences.

Activity 2 Adverbs

35 mins

Instructions

- Begin the class by asking these questions: How do you walk when you're in a hurry? How would you write in your notebook? How should we treat others?
- Observe students’ answers and then explain the concept of Adverbs. You can use the teachers’ notes given below.

Teacher's Notes

An adverb is a word that describes or gives more information about:

- How something happens (manner)
- When it happens (time)
- Where it happens (place)
- How often does it happen (frequency)

Adverbs often modify verbs, but they can also modify adjectives or other adverbs. Give examples -

Sentence	Type of Adverb	Adverb
He runs **quickly**.	Manner	quickly
She came **late**.	Time	late
The children are playing **outside**.	Place	outside
I **always** brush my teeth.	Frequency	always

Use real classroom examples (e.g., "He is writing neatly." or "She is speaking softly.") to help students connect adverbs with real actions.

- Divide the class into 4 groups (or more, depending on class size).
- Each group must: Observe the classroom and surroundings and make 3–5 sentences using adverbs of manner (how things are done). One student in the group can write the sentences on a piece of paper.
- One group comes forward and reads each sentence aloud.
- After each sentence, the rest of the class listens and tries to identify the adverb used.
  You can say: *"Who can spot the adverb?"* Example:
  Sentence: *"Tashi is drawing neatly."* Class responds: *"Neatly!"*
- You can write the correct adverbs on the board for visual reinforcement.
- Ensure that all the groups come forward and every student participates.

Activity 3 Thank You, Soldier

35 mins

Instructions

- Begin by asking students: What do soldiers do for our country? How do they show bravery and patriotism? Why should we be thankful to them?
- Ask students to write a letter to an Indian soldier, thanking them and expressing gratitude for protecting the nation.
- Ask students to exchange notebooks with a partner for peer review. Remind students to use positive and respectful words while giving feedback.

Chapter : Meadow Surprises

Activity 1 My Meadow Moment

35 mins

Instructions

- Start by reading the poem Meadow Surprises aloud, and if required, explain the poem in the local language.
- Then, ask some questions:
  - Have you ever walked across a green field, a park, or just between trees?
  - Have you noticed butterflies, rabbits, ants, or birds doing something interesting?
  - Did you see anything beautiful or surprising on your way to school today?
- Ask students to draw a small scene from something they have seen or imagined in nature—a field, a garden, a roadside tree, or their school playground.
- Have the students come to the front, show their drawings and describe what they have drawn.

Activity 2 Parts of Speech

35 mins

Instructions

- Ask the students to refer to the picture given on page 137 in their textbooks.
- Ask them to observe the picture.
- Then, ask them to write at least 3 sentences, each using three of the following: noun, verb, adverb, article, or conjunction. Tell them to underline and label the parts of speech in their sentences.
- Example:

  *A **small** (adjective) rabbit **hopped** (verb) under the bush.*

  *The **bright** (adjective) sun warmed the **grass** (noun).*
- Invite each student to come forward and read any two sentences aloud.
- The class listens and tries to identify the part(s) of speech used.
- Gently guide the students if they need help with forming correct sentences.

Activity 3 Preserving Green Spaces

35 mins

Instructions

- Begin the session by saying: “Remember the poem ‘Meadow Surprises’? It talked about all the little magical things we see in meadows—flowers, butterflies, rabbits, and buzzing bees. These are all part of nature’s beauty.”
- Ask the class a few thought-provoking questions to get them thinking about nature and green spaces:
  - How do trees, plants, and animals help us?
  - What do you feel when you're in a park or near nature?
  - What do you think might happen if we cut down trees and pollute the environment?
- Now, ask students to write a short paragraph (5–6 lines) on the topic: **How I Want to Preserve Green Areas and Why They Are Important**
- Encourage them to express their ideas: Remind them to include points like planting trees, avoiding littering, saving water, protecting animals and plants.
- Ask the students to exchange notebooks with their partner for feedback. Remind students to use positive and respectful words while giving feedback.

UNIT: 8 Assessment

35 mins

Section A (Literature)

Choose the correct answer from the given options-

1. What is the name of the monument that Soumya found most inspiring?
   a) India Gate
   b) National War Memorial
   c) Amar Jawan Jyoti
   d) Rajpath
2. Which war is commemorated by the Amar Jawan Jyoti initially located under the arch of India Gate?
   a) India-China War 1962
   b) India-Pakistan War 1965
   c) India-Pakistan War 1971
   d) Kargil War 1999
3. What does the poet suggest you need to enjoy the surprises of a meadow?
   a) A loud voice
   b) A keen eye and a sharp ear
   c) A camera
   d) A guide

Answer the following questions-

4. Why are war memorials built, as explained in the prose?

_____
_____
_____
_____
_____

5. What should one do to discover surprises in a meadow, according to the poet?

_____
_____
_____
_____
_____

6. Why were the students awestruck and humbled when they visited the National War Memorial? Explain in your own words.

_____
_____
_____
_____
_____
_____
_____

Section B (Grammar)

Complete the following sentences using appropriate adverbs (e.g., slowly, quickly, happily, neatly, loudly, etc.).

1. The dog barked _____ at the stranger.
2. She danced _____ on the stage.
3. He completed his homework _____.
4. The baby slept _____ in the cradle.
5. They answered the questions _____ during the quiz.

Section C (Writing)

Write a paragraph on the topic “What do I want to do to serve the nation?”. Include-

- What does "serving the nation" mean to you?
- What would you like to become when you grow up?
- How can your work help the country?
- What values (honesty, hard work, kindness, bravery) will you follow?
- How can even small actions (like keeping your surroundings clean, helping others) make a difference?

UNIT: 8 Answer Key

Section A (Literature)

1. b)
2. c)
3. b)
4. War memorials are built to honour and remember the brave soldiers who sacrificed their lives for the nation. They inspire patriotism and help future generations value courage and freedom.
5. According to the poet, one should walk softly through the grass and look carefully to discover the hidden surprises in a meadow, like butterflies, rabbits, and nests in the ground.
6. The students were awestruck and humbled when they visited the National War Memorial and saw the names of thousands of brave soldiers who sacrificed their lives for the nation. They felt deep respect for the courage and selflessness shown by the soldiers. The experience made them realise the value of freedom and the cost at which it comes. It inspired them to be more responsible and patriotic citizens of India.

Section B (Grammar)

1. loudly
2. gracefully
3. neatly
4. peacefully
5. quickly

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:

- Are ideas logically organised and connected?
- Are vocabulary and expressions varied and suited to the topic?
- Are the grammar, punctuation, and spellings mostly, correct?
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- Are linking words and phrases (e.g., however, moreover, therefore) used to guide the reader?
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Name of the School:	**UDISE:**
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Class: 7		Subject: English		
Roll No.	Name of the Student	Unit: 8		
		Chapter:	1. A Homage to our Brave Soldiers	
			2. Meadow Surprises	
		Level 1	Level 2	Level 3

Meghalaya Learning Enhancement Programme

MATHS

Chapter 1 : Integers

Activity 1 Find the Score

35 mins

Instructions

- Begin by drawing the following table on the board:

Name	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10
Participant A	5	0	5	5	-3	5	-3	5	5	5
Participant B	5	5	5	0	-3	0	-3	-3	0	0
Participant C	5	0	-3	-3	5	5	-3	0	0	-3
Participant D	-3	-3	5	5	0	0	-3	5	5	0

- Instruct students that they will analyze these quiz scores using a structured point system.
- Explain the following scoring system:
  a. +5 points for each correct answer.
  b. -3 points for each incorrect answer.
  c. 0 points for not attempted questions.
- Ask students to:
  a. Calculate the total score for each participant.
  b. Compute the average score (by dividing the total score by total number of questions).
  c. Compare and determine the highest and lowest average scores.
- Discuss results and ask:
  a. Discuss which participant performed the best and how integer operations (addition and subtraction) helped in determining the results.
  b. How did negative scores affect the total?
  c. What would happen if incorrect answers were given -5 points instead of -3 points?
- Conclude the class by consolidating the concept of integer addition and subtraction.

Activity 2 Let's Code

35 mins

Instructions

- Introduce the letter-to-point system on the board- assigning a specific numerical value to each letter.
- Ask students to calculate the total score and the product of a given name.

  Letter to Point Value Mapping:

A -1	B +2	C -3	D +4	E -5	F +6	G -7	H +8	I -9	J +10
K -11	L +12	M -13	N +14	0 -15	p +16	Q -17	R +18	s -19	T +20
u -21	V +22	w -23	X +24	y -25	z +26				

- Do an example on the board: **"GABRIEL"**
  - Total Score → **-7 -1 +2 +18 -9 -5 +12 = 10**
  - Product → **(-7)(-1)(2)(18)(-9)(-5)(12) = 136080**
- Ask students to:
  - Write down 10 different names of their choice.
  - Calculate the total score for each name.
  - Calculate the product for each name.
- Connect to Real-Life Applications:
  - Explain how assigning numerical values to letters is similar to coding systems used in encryption, data analysis, and gaming algorithms.
  - Discuss how positive and negative values impact calculations, reinforcing integer operations.
- Conclude by asking:
  - What did you notice about names with more positive vs. negative values?
  - How did multiplication affect the final product compared to addition?
  - If we changed the assigned values, how would that impact the results?

Activity 3 Roll the Dice

35 mins

Instructions

- Divide the class into four to five groups.
- Explain the basic rules:
  - Each student in a group will roll the dice five times.
  - For each odd number (1, 3, 5), multiply it by +200.
  - For each even number (2, 4, 6), multiply it by -100.
  - After five throws, add up the total points to determine the final score.
- Ask each group to take turns rolling the dice and calculate their scores and the group with the highest total score wins!
- Discuss with the students:
  - How did different dice rolls impact the final score?
  - What strategies can be used to maximise points?
  - How do these mathematical operations relate to real-life scenarios?
- Conclude the class by consolidating the operations and properties of integers.

Assessment

35 mins

1. The product of two negative integers is positive. (True / False)
2. Zero is an integer. (True / False)
3. When multiplying two integers with different signs, the product is _____.
4. Divide: (-128) ÷ 16.
5. What is the result of (-14) + 8?
   a) 22
   b) -22
   c) 6
   d) -6
6. What is the product of (-15) × (-20)?
   a) 300
   b) -300
   c) 5
   d) -5
7. In a game, a player gets +10 points for every correct answer and -5 points for every incorrect answer. If the player answered 6 questions correctly and 4 questions incorrectly, what is the player's total score?
8. Solve the following: (-7) + (+9) + (-5) + (+3) Show your calculations and simplify the expression

Answer Key

1. **True** – The product of two negative integers is always positive.
2. **True** – Zero is an integer.
3. **Negative** – When multiplying two integers with different signs, the product is always negative.
4. (-128) ÷ 16 = **-8**.
5. d) (-14) + 8 = **-6**.
6. a) (-15) × (-20) = **300**
7. Total Score = 6 × 10 + 4 × (-5) = 60 - 20 = **40**. The player's total score is **40 points**.
8. (-7) + (+9) + (-5) + (+3) =
   - Combine positive numbers: 9 + 3 = 12
   - Combine negative numbers: -7 - 5 = -12
   - Final result: **12 - 12 = 0**

Learning Level Tracker

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

Class: 7		Subject: Maths		
Roll No.	Name of the Student	Chapter: Integers		
		Level 1	Level 2	Level 3

Chapter 2 : Fractions and Decimals

Activity 1 Find the Pages

35 mins

Instructions

- Introduce the activity by explaining that students shall use fractions to calculate how many pages remain in their English, Maths, Science, and Social Science textbooks after a reduction.
- Gather Information by asking students to note the total number of pages in their textbooks for each subject. Then, provide an example on the board:
  - English: 200 pages
  - Maths: 180 pages
  - Science: 160 pages
  - Social Science: 150 pages
- Explain the Reduction Process and share the fraction by which each textbook's pages should be reduced:
  - English: Reduced by $\frac{1}{10}$
  - Maths: Reduced by $\frac{1}{5}$
  - Science: Reduced by $\frac{1}{20}$
  - Social Science: Reduced by $\frac{1}{50}$
- Demonstrate an Example by solving for the English textbook:
  - Total pages: 200
  - Reduction: $\left(\frac{1}{10}\right) \times 200 = 20$ pages
  - Remaining pages: 200 - 20 = 180 pages
- Ask students to calculate the reduction and remaining pages for all four subjects.
- Have them record their calculations in their notebooks and compare the remaining pages across subjects.
- Discuss with students:
  - Which subject has the most remaining pages?
  - Which subject had the largest reduction?
- Conclude the class by discussing how fractions are used in everyday life, such as in discounts, cooking, or sharing resources and encourage students to think of other real-world examples where fractions are useful.

Activity 2 Sharing is Caring

35 mins

Instructions

- Introduce division with whole numbers by asking students these simple questions:
  - o "If I have 20 chocolates and need to distribute them equally among 5 students, how many does each get?" Guide students to $20 \div 5 = 4$.
  - o Follow up with, "If 49 chocolates are shared among 14 people, how many does each get?" Let them solve $49 \div 14 = 3$.
- Connecting to Fractions shows that division works the same way with fractions. Use an example:
  - o "If a cake is divided into 2 equal parts, each part is $\frac{1}{2}$ of the whole."
- Introduce Fraction Division building on this idea. Ask:
  - o "If I have $\frac{1}{2}$ of a cake and divide it into 2 equal parts, how much does each get?" Guide students to $\left(\frac{1}{2}\right) \div 2 = \frac{1}{4}$.
- If students find it difficult, revise the Rule for Fraction Division simplifies problem-solving. Explain, "To divide fractions, flip the second fraction and multiply."
  Example: $\frac{1}{2} \div \frac{1}{3}$ becomes $\frac{1}{2} \times \frac{3}{1} = \frac{3}{2}$.
- Provide students with questions on Fraction Division from Real-Life Situations to make learning more practical:
  - o "A bottle contains $\frac{3}{4}$ liters of juice. If shared equally among 3 people, how much does each get?" Solve: $\frac{3}{4} \div 3 = \frac{1}{4}$.
  - o "A $\frac{5}{6}$-meter rope is cut into 5 equal pieces. How long is each?" Solve: $\frac{5}{6} \div 5 = \frac{1}{6}$.
- Divide the class into pairs. Give each pair 5 sets of similar questions. Ask them to solve problems in pairs, explain their reasoning, and discuss their answers as a class.

Activity 3 Bake a Cake

35 mins

Instructions

- Introduce the activity by explaining that students shall practice dividing parts of a whole into smaller, equal sections and converting the results into decimals.
- Solve the First Problem Together
  - Present the scenario: "A baker has $\frac{4}{5}$ of a cake and wants to cut it into 6 equal pieces."
  - Guide students to set up the division: $\frac{4}{5} \div 6$.
  - Remind them to rewrite the problem as $\frac{4}{5} \times \frac{1}{6}$ and solve: $\frac{(4 \times 1)}{(5 \times 6)} = \frac{4}{30}$.
  - Simplify if needed and convert $\frac{4}{30}$ to a decimal by dividing: $4 \div 30 = 0.133$.
- Extend the Problem by presenting a new scenario:
  - "The baker doubles the amount of cake, so the total is now $\frac{8}{5}$ (since $2 \times \frac{4}{5} = \frac{8}{5}$)."
  - Ask students how they would distribute this among 9 equal parts.
  - Guide them to set up the division: $\frac{8}{5} \div 9$, rewrite as $\frac{8}{5} \times \frac{1}{9}$, and solve: $\frac{(8 \times 1)}{(5 \times 9)} = \frac{8}{45}$.
  - Convert $\frac{8}{45}$ into a decimal by dividing: $8 \div 45 = 0.178$.
- Encourage Independent Practice by having students attempt similar problems in pairs.
- Discuss strategies and ensure they understand how to divide fractions and convert them to decimals.

Assessment

35 mins

Fractions and Decimals

1. When dividing 2.4 by 0.6, the result is _____.
2. If $\frac{1}{3}$ is multiplied by 6, the product is _____.
3. Divide: i) $\frac{7}{10} \div \frac{2}{5}$
4. Multiply: i) $\frac{6}{13} \times \frac{15}{7}$
5. John saves 0.25 of his salary every month. If his salary is Rs. 20,000, how much does he save in one month?
6. A market sells $\frac{3}{4}$ kg of carrots for Rs. 36. How much will 1.5 kg of carrots cost?
7. A car consumes 0.4 litres of fuel per kilometre. How much fuel will the car consume for a 7.5 km trip?

Answer Key

1. When dividing 2.4 ÷ 0.6, shift the decimal and calculate:
2. 4 ÷ 0.6 = 24 ÷ 6 = **4**
2. Multiplying $\frac{1}{3} \times 6$:

   $\frac{(1 \times 6)}{3} = \frac{6}{3} =$ **2**
3. Division of Fractions:

   $\frac{7}{10} \div \frac{2}{5} = \frac{7}{10} \times \frac{5}{2} = \frac{(7 \times 5)}{(10 \times 2)} = \frac{35}{20} =$ **7/4**.
4. Multiplication of Fractions:

   $\frac{6}{13} \times \frac{15}{7} = \frac{(6 \times 15)}{(13 \times 7)} = \frac{90}{91}$.
5. John's Monthly Savings:

   0.25 × 20,000 = **Rs. 5,000**
6. Cost of 1.5 kg of Carrots:
   - Price per kg = Rs. 36 ÷ $\frac{3}{4}$ = Rs. 36 × $\frac{4}{2}$ = Rs. 48 per kg.
   - Cost of 1.5 kg = 1.5 × 48 = **Rs. 72**.
7. Fuel Consumption for 7.5 km:

   0.4 × 7.5 = **3 litres**.

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: 7		Subject: Maths		
Roll No.	Name of the Student	Chapter: Fractions and Decimals		
		Level 1	Level 2	Level 3

Chapter 3 : Data Handling

Activity 1 Mean Median Mode

35 mins

Instructions

- Write different numbers on sticky notes or number cards and distribute them randomly to students.
- Understanding Mean (Average)
  - Ask 5 students to come to the front and hold up their number cards.
  - Write their numbers on the board and ask the class how they might find the “average” of the numbers.
  - Guide them through adding all numbers together and dividing by the number of students.
  - Demonstrate how adding a very high or low number affects the mean.
  - Explain that the mean is the average of a set of numbers, found by adding all values and dividing by the number of values.
- Understanding Median (Middle Value)
  - Now, ask the 5 students to arrange themselves in order from smallest to largest based on their numbers.
  - Ask the class to identify the student standing in the middle.
  - Guide them to understand that the median is the middle value in a set of numbers when arranged in order and if there are two middle values, their average is the median.
- Understanding Mode (Most Frequent Number)
  - Hand out number cards randomly and ask students to count how many times each number appears.
  - Explain that the number that appears the most is the mode and that if multiple numbers appear the most times, discuss how there can be more than one mode.
  - Add that if no number repeats, explain that the dataset has no mode
- Summarise that mean gives the overall average, median represents the middle value, and mode shows the most frequently occurring number.
- Describe how different measures are useful in different situations. For example, mean helps when calculating average test scores, median is useful for understanding income distribution, and mode is often used in surveys and polling data.

Activity 2 Heights

35 mins

Instructions

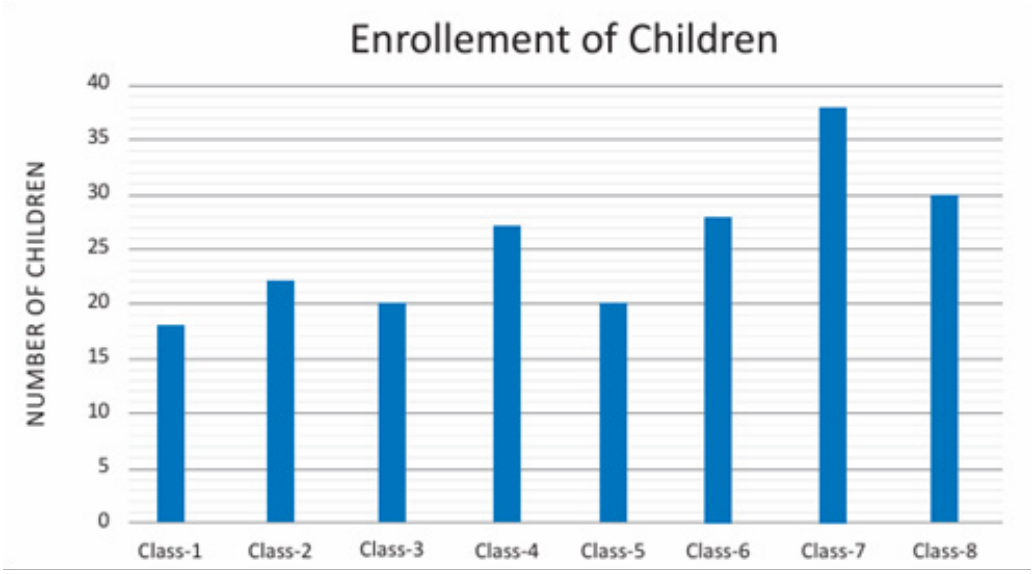
- Ask 5 students to stand in a line.
- Measure their height in handspans and write their heights on the blackboard.
- Finding the Mean (Average Height)
  - Explain to students that the **mean** is the average of all values.
  - Sum all the heights together and write the sum clearly on the board.
  - Divide the total by the number of students, which is five.
  - Show the calculation step by step so students can follow along.
- Finding the Median (Middle Height)
  - Explain that the median is the middle number when all values are arranged in order.
  - Ask students to arrange the heights from shortest to tallest.
  - Guide them to understand that if there are an odd number of students, the median is the height of the student standing in the middle.
  - Add that if there are an even number of students, the median is the average of the two middle values.
- Finding the Mode (Most Common Height)
  - Explain that the mode is the number that appears most often in a dataset.
  - Ask students to check if any height appears more than once in the list.
  - Explain that if one height is repeated the most, that is the mode and that if no height repeats, explain that there is no mode in this case.
  - Further add that if two or more heights appear the same number of times, both are modes.
- Explain the importance of each measure:
  - Mean gives the overall average but can be affected by extreme values.
  - Median is useful when some students are much shorter or taller than others.
  - Mode helps find the most common height in the group.

Activity 3 What's in the graph?

35 mins

Instructions

- Begin by drawing a simple bar graph on the board representing the number of students in different classes:



- Explain the key components of a bar graph:
  - **X-axis** (horizontal) represents categories (e.g., class levels).
  - **Y-axis** (vertical) represents values (e.g., number of students).
  - The height of each bar shows the quantity of each category.
- Encourage students to observe and interpret the graph by asking guiding questions:
  - "What information does this bar graph provide?"
  - "Which class has the highest number of students? How do you know?"
  - "How many fewer students are in Class 8 compared to Class 7?"
  - "Which two classes have similar student numbers?"
- Ask students to compare the bars and discuss their findings. Encourage them to ask and answer their own questions based on the graph.
- Conclude by explaining how bar graphs make it easier to visualise and compare data quickly. Instead of looking at long lists of numbers, a bar graph presents information in a way that is easy to understand at a glance.
- Encourage students to look for bar graphs in newspapers, textbooks, or posters around them.

Assessment

35 mins

1. A class of 30 students was surveyed about their favourite subject. The results were recorded as follows:

Subject	Frequency
Math	10
Science	8
English	5
Social Science	7

Draw a pie chart to represent the favourite subjects of the students.

2. A survey was conducted among 25 students to record the number of hours they spend on screens (phones, tablets, computers) each day. The data obtained is as follows:

Hours Spent on Screen	Number of Students
1-2 hours	5
2-3 hours	10
3-4 hours	6
4-5 hours	3
5-6 hours	1

Draw a bar graph to represent the number of students in each category of screen time.

Find the mode of the data.

Calculate the mean number of hours spent on screens per student.

3. A family tracks their weekly expenditure in different categories as follows:

Category	Expenditure (in ₹)
Groceries	2000
Rent	5000
Utilities	1500
Entertainment	1000
Education (tuition)	3000
Miscellaneous	500

Tasks:

Find the total expenditure for the week.

Calculate the mean expenditure.

Draw a pie chart to represent the percentage of money spent in each category.

If the family wants to cut down their expenses by 10%, how much should they reduce from each category?

Answer Key

1. Pie Chart for Favourite Subjects
   - Total students = 30
   - Math: (10/30) × 360 = 120°
   - Science: (8/30) × 360 = 96°
   - English: (5/30) × 360 = 60°
   - Social Science: (7/30) × 360 = 84°
2. Screen Time Analysis
   - Mode: 2-3 hours (most frequent, 10 students)
   - Mean screen time:
     - Multiply each category's midpoint by the number of students:
       - (1.5 × 5) = 7.5
       - (2.5 × 10) = 25
       - (3.5 × 6) = 21
       - (4.5 × 3) = 13.5
       - (5.5 × 1) = 5.5
     - Add all values: 7.5 + 25 + 21 + 13.5 + 5.5 = 67.5
     - Divide by total students: 67.5 ÷ 25 = 2.7 hours
3. Family Expenditure Analysis
   - Total expenditure:
     - ₹2000 + ₹5000 + ₹1500 + ₹1000 + ₹3000 + ₹500 = ₹13,000
   - Mean expenditure:
     - ₹13,000 ÷ 6 = ₹2166.67
   - 10% Reduction in Each Category:
     - Groceries: ₹200
     - Rent: ₹500
     - Utilities: ₹150
     - Entertainment: ₹100
     - Education: ₹300
     - Miscellaneous: ₹50

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

Chapter 4 : Simple Equations

Activity 1 Find the number

35 mins

Instructions

- Introduce the concept of fractions by explaining that fractions represent parts of a whole. Use everyday examples like sharing food or dividing a rope into equal sections.
- Take a sheet of paper and fold it in half. Ask students how many equal parts there are and explain that each part is $\frac{1}{2}$ of the whole.
- Continue folding the paper into four, eight, or more sections, showing how the fraction changes with each fold ($\frac{1}{4}$, $\frac{1}{8}$, etc.).
- Write an example on the board—"If one-fourth of a number is 5, what is the whole number?" Show how multiplying 5 × 4 gives the total: 20. Relate this to the paper, where four sections make up the whole.
- Now, give students problems to solve:
  - If the twentieth part of a number is 12, find the whole number.
  - If the hundredth part of a number is 0.0074, find the whole number.
  - If the fiftieth part of a number is 2, find the whole number.
- Ask students to explain their reasoning and check each other's answers. If time allows, let them create similar problems and exchange them with classmates.

Activity 2 What is the contribution?

35 mins

Instructions

- Begin by introducing the concept of sharing costs in real-life situations, such as pooling money for a meal, a gift, or a shared purchase. Explain that this activity will help students understand division, fractions, and equal distribution in a practical way.
- Divide the class into small groups and assign each group a different scenario.
- **Scenario 1: Buying a Football**

  Four friends — Bah Kynsai, Donbok, Lapynshai, and Banjop — buy a football for ₹870 but contribute unequally.
  - Kynsai pays half of the total cost.
  - Donbok pays half of the remaining amount.
  - Lapynshai and Banjop split the rest equally.

Questions:

a. How much does each friend initially contribute?
b. If they were to split the cost equally, how much should each person pay?
c. How can they balance the extra amounts to make contributions equal?

- **Scenario 2: Sharing the Cost of a Community Picnic**

  Five students contribute to a village picnic costing ₹1,500, but they pay different amounts.

  - Banteilang pays 1/3 of the total cost.
  - Daphi and Iamonlang each pay 1/4 of the remaining amount.
  - Wanlam and Teibor split the leftover cost equally.

  Questions:

  a. How much does each student initially pay?
  b. What would be the equal share for all five?
  c. How can they adjust their payments so that everyone contributes fairly?

- **Scenario 3: Buying a Class Gift**

  A group of six students buys a farewell gift for their teacher worth ₹960.

  - Meban contributes ₹400, and Banlam contributes ₹200.
  - The remaining four students share the leftover cost equally.

  Questions:

  a. How much does each of the remaining four students pay?
  b. What would have been the equal contribution per student?
  c. How can Meban and Banlam be reimbursed to make the contribution fair?

- After students complete the calculations, discuss their answers as a class. Discuss the importance of the **'unknown variable'** while calculating the problem and also emphasise the formation of an equation using the **'unknown variable'**.

Activity 3 Mystery Box

35 mins

Instructions

- Divide students into small groups of 3-4 members each.
- Place problem slips inside a "Mystery Box" and have each group take turns picking a problem.
- The group reads the problem aloud, represents the unknown quantity using a variable (e.g., x), and forms an equation to solve it.
- Below are example mystery box problems. Teachers can also create similar problems:

  Examples of Mystery Box Problems:

  - Age Puzzle:

    David's age is x. Ten years ago his age was 15. What is David's age now?
  - Money Problem:

    You have x rupees. After spending 20 rupees, you are left with 50 rupees. How much money did you have initially?
  - Shopping Scenario:

    A t-shirt costs x rupees. If you buy 3 t-shirts, the total cost is 900 rupees. What is the price of one t-shirt?

- Work Problem:

  A machine makes x boxes per hour. In 6 hours, it makes 120 boxes. How many boxes does it produce in one hour?
- Sharing Sweets:

  There are x chocolates in a packet. If 5 friends share them equally, each gets 4 chocolates. How many chocolates were in the packet?
- Fruit Basket Problem:

  A basket contains x mangoes. If 8 more mangoes are added, the total becomes 30. How many mangoes were there initially?
- Distance Problem:

  A bus travels x kilometres in one hour. In 5 hours, it covers 250 kilometres. What is the speed of the bus?
- Classroom Problem:

  There are x students in each row. If there are 6 rows and a total of 180 students, how many students are in each row?
- Bookshelf Problem:

  A bookshelf holds x books. If 12 more books are added, the total number becomes 60. How many books were there initially?
- Garden Problem:

  A gardener plants x flowers in each row. If there are 7 rows and a total of 84 flowers, how many flowers does he plant in each row?

- Each group presents their equation and solution to the class, explaining their reasoning.
- Conclude by discussing how forming and solving equations is a fundamental skill used in everyday life, from budgeting money to calculating distances and work efficiency. Emphasise that understanding how to set up and solve equations helps in logical thinking and problem-solving

Assessment

35 mins

1. **Solve for x:**
   5x−3=12
   a) 3
   b) 2
   c) 1
   d) 15
2. **Which of the following is the correct step to solve the equation 7x=56?**
   a) Subtract 56 from both sides
   b) Divide both sides by 7
   c) Add 7 to both sides
   d) Multiply both sides by 7
3. A book costs 100 rupees more than twice the cost of a pen. If the total cost of the book and the pen is 300 rupees, find the cost of the book and the pen.
4. The length of a rectangle is 4 cm less than twice its width. If the perimeter of the rectangle is 40 cm, find the length and width of the rectangle.
5. **Solve the equation for x:** 4(x−3) = 2x+6

Answer Key

1. 5x - 3 = 12
   - 5x = 15 → x = 3
   - (a) 3
2. 7x = 56
   - Divide by 7 → x = 8
   - (b) Divide both sides by 7
3. The book costs 100 more than twice the pen's cost. Total = 300.
   - Let pen = x, book = 2x + 100
   - x + 2x + 100 = 300 → 3x = 200 → x = 100
   - Book = 200, Pen = 100
4. Length is 4 cm less than twice the width. Perimeter = 40 cm.
   - Width = 8 cm, Length = 12 cm
5. 4(x - 3) = 2x + 6
   - 4x - 12 = 2x + 6 → 2x = 18 → x = 9

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

Class: 7		Subject: Maths		
Roll No.	Name of the Student	Chapter: Simple Equations		
		Level 1	Level 2	Level 3

Chapter 5 : Lines and Angles

Activity 1 Find the angle

35 mins

Instructions

- Divide the class into 3-4 teams and have them form lines, ensuring that each team has an equal number of students.
- Place a stack of problem cards at the front of the class. Each card contains an angle-related problem that requires students to apply their understanding of complementary, supplementary, and linear pairs of angles. Some sample of problem cards will look like-
  - "Two angles are complementary. One is 60°. Find the other."
  - "In a linear pair, one angle is 75°. What is the other?"
  - “A linear pair includes angles of x° and 2x°. Find both angles.”
  - “Two angles are complementary. One angle is x, and the other is x+10. Find x.”
  - “Two angles are supplementary. If one angle is x° and the other is x+40°, find the angles.”
  - “The measure of one angle is three times the measure of its complementary angle. Find both angles.”
  - “Two adjacent angles form a straight line. If one angle is 130°, find the other.”
- Explain the rules of the activity:
  - The first student from each team picks a problem card and reads it aloud to their teammates.
  - The team works together to solve the problem, discussing their approach and reasoning.
  - Once they agree on the solution, one team member writes it on the board or submits it to the teacher for verification.
  - If the answer is correct, the next student picks a new card, and the team continues solving problems together.
  - The activity continues until all problem cards are solved, reinforcing teamwork and collaborative problem-solving. The team that correctly solves all its problems first wins the challenge.
- After the activity, review the solutions as a class. Discuss the concepts of complementary, supplementary, and linear angles, highlighting any common mistakes and clarifying doubts.

Activity 2 Find the angle - 2

35 mins

Instructions

- Ask the students to sit in pairs to encourage collaboration and active participation.
- Draw the table on the board with the given criteria:

Criteria	Student 1	Student 2
Vertically opposite angles		
Complementary Angles		
Supplementary Angles		
Linear Pair		

- **Round 1:**
  - Student 1 selects an angle and provides the value based on the criteria in the table.
  - Student 2 calculates and provides the corresponding angle that fits the given criteria.
  - For example, if Student 1 provides an angle of **50°** and asks for its supplementary angle, Student 2 will calculate the missing angle. Since supplementary angles add up to 180°, Student 2 subtracts 50° from **180°** and determines that the corresponding angle is **130°**.
- **Round 2:**
  - The roles are reversed: Student 2 provides an angle, and Student 1 finds the other angle.
  - For example, if now student 2 now provides an angle and asks Student 1 to find its complementary angle. If Student 2 gives an angle of 40°, Student 1 must calculate the missing complementary angle. Since complementary angles sum up to 90°, Student 1 subtracts 40° from 90° and finds that the corresponding angle is 50°.
- Encourage students to repeat the activity multiple times with different angles to reinforce their understanding.

Activity 3 Measure the Angle

35 mins

Instructions

- Divide the students into 3-4 groups.
- Distribute diagrams of two lines cut by a transversal to each group. Ensure that some diagrams contain parallel lines, while others do not.
- Guide students to label the angles formed in their diagrams under the following categories:
  - Corresponding angles
  - Alternate interior angles
  - Alternate exterior angles
  - Co-interior (or consecutive interior) angles
- Provide protractors and ask students to measure each angle carefully, recording their observations in a table.
- For each pair of angles, students should analyse and record:
  - Whether corresponding, alternate interior, and alternate exterior angles are equal.
  - Whether co-interior angles add up to 180°.
- After completing their observations, students compare their results with other groups.
- Facilitate a class discussion where students confirm if the properties hold when the lines are parallel and analyse why the properties might not apply when the lines are not parallel.

Assessment

35 mins

1. What is the angle formed by two intersecting straight lines?
   a. Acute angle
   b. Right angle
   c. Obtuse angle
   d. A pair of vertically opposite angles
2. In a figure $\angle ABC=70°$ and $\angle CBD=40°$,find $\angle ABC+\angle CBD$
3. A straight angle is divided into two parts. One part is 50° less than the other. Find the measure of the two parts.
4. If two angles are supplementary, they always form a linear pair.
   (True / False)
5. Vertically opposite angles are always equal.
   (True / False)
6. Two angles are supplementary and their difference is 40°. Find the measure of both the angles.

Answer Key

1. **d. A pair of vertically opposite angles**
   When two straight lines intersect, they form two pairs of vertically opposite angles, which are always equal.
2. **110°**
   Given ∠ABC = 70° and ∠CBD = 40°, their sum is:
   70° + 40° = 110°
3. **The two angles are 115° and 65°**
   Let one angle be x. The other angle is x-50°.
   Since they form a straight angle, their sum is 180°:
   x + (x - 50) = 180
   2x - 50 = 180
   2x = 230
   x = 115°
   The other angle is 115° - 50° = 65°
4. **False**
   Supplementary angles always sum to 180°, but they don't necessarily have to be adjacent or form a linear pair.
5. **True**
   Vertically opposite angles are always equal when two lines intersect.
6. **The two angles are 110° and 70°**
   Let one angle be x, and the other be x - 40°.
   Since they are supplementary, their sum is 180°:
   x + (x - 40) = 180
   2x - 40 = 180
   2x = 220
   x = 110°
   The other angle is 110° - 40° = 70°

Learning Level Tracker

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

Class: 7		Subject: Maths		
Roll No.	Name of the Student	Chapter: Lines and Angles		
		Level 1	Level 2	Level 3

Chapter 6 : The Triangle and its Properties

Activity 1 Angles of a Triangle

35 mins

Instructions

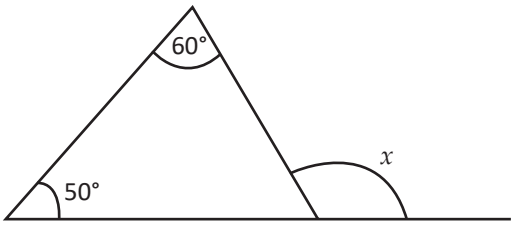
- Ask students to sit in pairs and provide them with rulers, protractors, and sheets of paper.
- Instruct each pair to take a sheet of paper and cut out a triangle of any shape (it can be an acute, obtuse, or right-angled triangle). Alternatively, they can fold the paper and cut along the fold to create a triangle.
- Before measuring the angles, ask students to tear off the three corners of their triangle and try to arrange them in a straight line. Encourage them to observe what they notice.
- Next, guide them to carefully measure each angle of their triangle using a protractor and record the values.
- Ask students to add up the three angles and compare their results with those of their classmates.
- Facilitate a class discussion where students share their findings. Emphasise that regardless of the shape or size of the triangle, the sum of its interior angles is always 180°.
- To reinforce the concept, encourage students to repeat the activity with different types of triangles and verify their results.

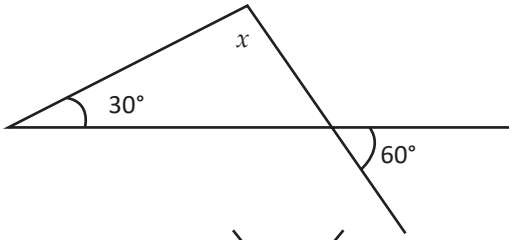
Activity 2 Find the Angle- 3

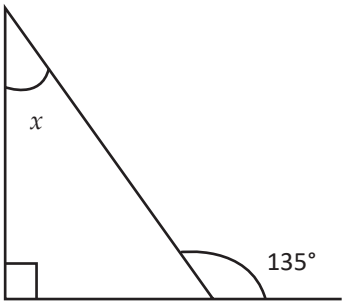
35 mins

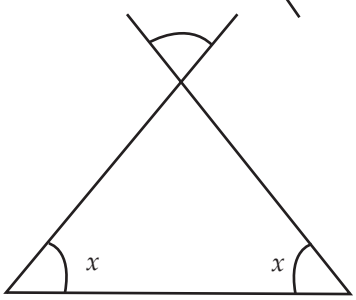
Instructions

- Divide the students into 3-4 groups.
- Draw the given diagrams on the board.
- Assign one diagram to each group and ask students to carefully redraw it in their notebooks.









- Guide students to analyse their diagrams and apply angle properties (such as linear pairs, vertically opposite angles, or sum of angles in a triangle) to solve for x.
- Encourage discussion within groups and allow students to explain their reasoning.
- Assist students who struggle by prompting them with guiding questions and reinforcing key angle properties.
- Conclude by reviewing each group's solutions and clarifying any misconceptions.

Activity 3 Is the Triangle Right?

35 mins

Instructions

- Divide the class into 3-4 groups.
- Write the following sets of numbers on slips of paper:
  - 5,12,13
  - 6,8,11
  - 3,4,5
  - 10,15,20
  - 7,24,25
  - 4,5,6
- Ask each group to randomly pick a slip.
- Instruct them to determine whether the given numbers represent the sides of a right-angled triangle using Pythagoras' theorem ($a^2 + b^2 = c^2$).
- If the numbers form a right triangle, the group should draw it on paper or the board.
- If they do not form a right triangle, students should explain why.
- Encourage discussion on patterns and relationships between the numbers.
- Conclude with a reflection on the Pythagorean theorem and its applications.

Assessment

35 mins

1. The sum of any two sides of a triangle is always greater than the third side. (True/False)
2. In triangle ABC, if ∠A = 60°, ∠B = 70°, find the measure of ∠C.
3. ABC is a triangle where AB = AC. If ∠B = 50°, find the measure of ∠C.
4. The measure of one angle of a triangle is 45° and the other two angles are equal. Find the measure of the other two angles.
5. In an equilateral triangle, if the perimeter is 18 cm, calculate the length of each side. Also, find the measure of each angle of the triangle.
6. Explain the different types of triangles based on their sides and angles. Give one example of each.

Answer Key

1. True – The sum of any two sides of a triangle is always greater than the third side (Triangle Inequality Theorem).
2. ∠C = 50°
   The sum of the interior angles of a triangle is 180°.
   ∠C = 180° - (∠A + ∠B) = 180° - (60° + 70°) = 50°.
   ∠C = 50°
3. In an isosceles triangle, the base angles are equal.
   Since AB = AC, ∠B = ∠C.
   Given ∠B = 50°, so ∠C = 50°.
4. Each angle = 67.5°
   Let the two equal angles be x.
   Sum of all angles = 180°
   45° + x + x = 180°
   2x = 135° → x = 67.5°
5. Each side = 6 cm, Each angle = 60°
   In an equilateral triangle, all sides are equal.
   Perimeter = 3 × side → 18 = 3 × side → side = 6 cm.
   Each angle in an equilateral triangle = 60°.
6. Types of triangles:
   Based on sides:
   - Scalene Triangle – No sides are equal (e.g., 5 cm, 7 cm, 9 cm).
   - Isosceles Triangle – Two sides are equal (e.g., 6 cm, 6 cm, 4 cm).
   - Equilateral Triangle – All three sides are equal (e.g., 5 cm, 5 cm, 5 cm).

   Based on angles:
   - Acute Triangle – All angles < 90° (e.g., 50°, 60°, 70°).
   - Right Triangle – One angle = 90° (e.g., 30°, 60°, 90°).
   - Obtuse Triangle – One angle > 90° (e.g., 30°, 40°, 110°)

Learning Level Tracker

Keep a record of unit/chapter 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: 7		Subject: Maths		
Roll No.	Name of the Student	Chapter: The Triangle and its Properties		
		Level 1	Level 2	Level 3

Chapter 7 : Comparing Quantities

Activity 1 Percentage Bingo!

35 mins

Instructions

- Ask each student to draw a 3×3 Bingo grid (9 boxes) in their notebook or on a piece of paper.
- Write the following percentage values on the board: 10%, 20%, 25%, 33%, 40%, 50%, 60%, 66%, 75%, 80%, 90%, 100% and ask the students to randomly choose 9 values from the list and write one inside each box.
- Explain to the students that they will play Bingo by matching called-out fractions or decimals with their percentages on the grid. The first to complete a row, column, or diagonal shouts "Bingo!" For example, if the teacher calls "one-fourth," students mark 25% on their grid if it's there.
- Start calling out the fractions in random order, referring to the list below:

Fraction / Decimal	Equivalent Percentage
$\frac{1}{2}$	50%
$\frac{1}{4}$	25%
$\frac{1}{5}$	20%
$\frac{1}{3}$	33%
$\frac{2}{3}$	66%
$\frac{3}{4}$	75%
0.1	10%
0.25	25%
0.4	40%
0.6	60%
0.75	75%
0.8	80%
1	100%

- If a student calls out “Bingo!”, verify the student's answers by asking which value was called and the percentage they matched it with. If all matches are correct, the student wins the round.
- Continue the game until every student has completed a row, column, or diagonal on their Bingo grid and encourage students to make quick mental conversions to keep up with the pace.
- If some students finish early, encourage them to help others or check their grids to stay engaged.

Activity 2 Market in the Class

35 mins

Instructions

- Divide the class into groups of three and assign roles to each member: Buyer, Seller, and Accountant.
- Provide the Seller with items such as books, pens, and stationery, each with a pre-assigned Cost Price (CP). Write the CPs on small labels or slips of paper attached to the items.
- The following scenarios can be enacted by the students:
  - Scenario 1: A stationary shop with a Seller offering pens at ₹20 (CP ₹15) and books at ₹100 (CP ₹80). The Buyer negotiates for a discount on a bulk purchase and secures pens at ₹18 each.
  - Scenario 2: A bookstore where the Seller has CP ₹200 for a dictionary but sets an SP of ₹250. The Buyer argues for a ₹20 discount. The accountant calculates whether the Seller still makes a profit or incurs a loss.
  - Scenario 3: A sports shop selling footballs at CP ₹500 with an SP ₹600. The Buyer uses fake currency to purchase three footballs and demands a discount for buying multiple items. The accountant computes the total profit or loss percent.
- Distribute fake currency or paper slips to the Buyer to simulate purchasing power.
- Once a transaction is completed, the accountant calculates whether there is a Profit or Loss for the Seller using these formulas:

  Profit Percent = (Profit ÷ CP) × 100

  Loss Percent = (Loss ÷ CP) × 100
- After all transactions, facilitate a class discussion to reflect on how the seller decided the SP for each item and offered discounts while maintaining profit margins, strategies the buyer used to select items and negotiate prices and the role of the accountant’s role in ensuring accurate calculations and maintaining financial transparency.

Activity 3 Simple Interest Relay

35 mins

Instructions

- Prepare three separate jars labelled Principal, Rate of Interest, and Time. Write the values from the table on slips of paper and place them in the corresponding jars.

Principal (P)	Rate of Interest (R%)	Time (T in years)
₹1,000	3%	1 year
₹2,500	4.5%	2 years
₹3,000	5%	3 years
₹4,500	6.5%	4 years
₹5,000	7%	5 years
₹6,000	8%	2 years

- Divide the class into groups of four. Assign one role to each member:
  - Principal Picker (P) – picks a slip from the Principal jar
  - Rate Picker (R) – picks a slip from the Rate jar
  - Timekeeper (T) – picks a slip from the Time jar
- Calculator – uses the formula to compute the Simple Interest: Simple Interest (SI)= $\frac{P \times R \times T}{100}$
- Explain that each group shall send the first three members to draw one slip from their respective jars. Once back, they share the values with their Calculator, who, with help from the group, computes the Simple Interest and writes down the full working or announces it.
- When a group has their answer ready, ask them to raise their hand and present their solution. Check both their calculation and final answer.
- Groups continue playing and drawing new values each round and the first group to get three correct answers wins the game.
- Conclude by discussing how understanding interest plays a crucial role in real-life financial decisions, such as loans, savings, and investments, and how this knowledge can help us make more informed choices in the future.

Assessment

35 mins

1. A person buys a shirt for ₹600 and sells it for ₹720. The percentage profit is:
   a) 20%
   b) 25%
   c) 30%
   d) 15%
2. Convert 0.75 into a percentage.
3. A school has 600 students, and 80% of them passed the final exam. How many students passed the exam?
4. If a person's salary increases from ₹20,000 to ₹22,000, what is the percentage increase in his salary?
5. A sum of ₹2000 is invested at a rate of 5% per annum for 3 years. Calculate the simple interest and the total amount after 3 years.
6. The price of a book is ₹450. If the price is increased by 20%, what is the new price of the book?

Answer Key

1. The percentage profit is:
   Profit = Selling Price - Cost Price = ₹720 - ₹600 = ₹120
   Profit Percent = (Profit ÷ Cost Price) × 100 = (120 ÷ 600) × 100 = 20%
   Correct answer: a) 20%
2. Percentage = 0.75 × 100 = 75%
3. Number of students passed = (80 ÷ 100) × 600 = 480 students
4. Increase = ₹22,000 - ₹20,000 = ₹2,000
   Percentage Increase = (Increase ÷ Original Salary) × 100 = (2000 ÷ 20,000) × 100 = 10%
5. Simple Interest = (Principal × Rate × Time) ÷ 100 = (2000 × 5 × 3) ÷ 100 = ₹300
   Total Amount = Principal + Simple Interest = ₹2000 + ₹300 = ₹2300
6. Increase in price of book = (20 ÷ 100) × 450 = ₹90
   New Price = ₹450 + ₹90 = ₹540

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

Chapter 8 : Rational Numbers

Activity 1 Finding Rational Numbers

35 mins

Instructions

- Briefly introduce the concept of Rational Numbers that can be written in the form of $\frac{p}{q}$. where p and q are integers and q not equals to 0. Share some examples including real life examples like $-\frac{1}{2}$, $-\frac{3}{4}$, 0, 2, $1\frac{1}{2}$ hours, -1°C etc.
- Draw a large Number Line on the classroom floor and mark midpoint as 0, label integer points like -3, -2, -1, 0, 1, 2, 3. Also you can add halfway marks like $\frac{1}{2}$, $1\frac{1}{2}$, etc.
- Distribute pre-made one rational number card to each student. Some example cards are 1.5, $-\frac{3}{2}$, -1, $-\frac{1}{2}$, 0, $\frac{1}{3}$, 0.5, 1, $1\frac{3}{4}$, 2.25, 3 (mix of positive, negative, fraction, decimals, integers).
- Ask students to read their number aloud one-by-one and then try to arrange themselves in correct order along the number line.
- Encourage students to justify their position. If needed guide them for correct placement and explanation.
- Highlight how fractions, decimals and integers all are rational numbers.
- Ask students about the placement of negative numbers, did any numbers have the same value but look different etc.

Activity 2 Rational Number Line

35 mins

Instructions

- Split the class into small groups (3-4 students each) and draw a number line on the floor for each group. Label key points on the line (e.g., -2, -1, 0, 1, 2), ensuring the line includes both negative and positive rational numbers.
- Prepare cards with a mix of rational numbers (fractions and decimals). For example:
  - Fractions: $-\frac{3}{4}, \frac{5}{8}, -\frac{1}{3}, \frac{3}{5}, \frac{7}{8}, \frac{2}{3}, -\frac{1}{2}, \frac{1}{4}, -\frac{3}{2}$
  - Decimals: -1.5, 0.75, 0.25, -0.5, 1.2, 0.8, -0.25, 0.5, 1.1, -0.66
- Provide each group with a set of cards and ask each group to place their numbers on the number line and to:
  - Identify the largest and smallest numbers in their set.
  - Figure out where each number belongs on the line, considering both positive and negative numbers.
  - Convert fractions and decimals if needed (e.g., for easier placement).

- As groups work, walk around the room to offer help if students are struggling with ordering negative numbers or fractions.
- After the numbers have been placed, guide each group to check their number line to ensure the numbers are in the correct order from smallest to largest. If there are any numbers that were difficult to place, ask how they figured it out.
- Encourage each group to share their number line with the class, explaining how they decided where to place each number, which numbers were easy or hard to place, and why and if they converted any decimals to fractions or vice versa.
- Once all groups have shared their number lines, finish the activity by discussing how rational numbers are represented on the number line and how comparing distances from zero helps understand their size. You can also relate number lines to real-life examples like measuring temperatures, distances, or money.

Activity 3 Operations on Rational Numbers

35 mins

Instructions

- Prepare a set of small slips of paper, each with a positive or negative rational number written on it and put them in a bowl. Include a mix of fractions and decimals, such as:

Type	
Fractions	$\frac{3}{4}, -\frac{5}{6}, \frac{7}{8}, -\frac{1}{3}, \frac{4}{5}, -\frac{2}{7}, \frac{9}{10}, -\frac{11}{12}$
Decimals	-0.75, 1.2, -1.6, 0.25, -0.125, 1.5, -0.85

- Divide the class into pairs and invite one student from each pair to come forward and draw two slips from the bowl. They return to their partner with their two numbers.
- Explain that each pair will work together to:
  - Add the two rational numbers.
  - Subtract the second number from the first.
- Guide students on how to handle positive and negative signs and whether they need to convert decimals to fractions (or vice versa) for easier calculation.
- After all pairs finish, ask them to present their two numbers, their sum, and their difference.
- If errors are found, guide the students to identify and correct the mistake and assist them in reviewing the steps, especially with how signs or conversions are to be handled.
- Conclude by discussing different situations where we add or subtract positive and negative rational numbers (e.g., banking, temperatures, elevation changes).

Assessment

35 mins

1. Which of the following is not a rational number?
   a) $\frac{5}{7}$
   b) $-\frac{3}{4}$
   c) $\sqrt{2}$
   d) $\frac{4}{3}$
2. Convert the following decimals into fractions:
   a) 0.25
   b) -0.6
3. Simplify the following:
   $(\frac{7}{12}) - (\frac{5}{12})$
4. Multiply and simplify the following rational numbers:
   $(-\frac{7}{9}) \times (\frac{2}{3})$
5. Divide the following rational numbers and simplify:
   $(-\frac{4}{7}) \div (\frac{1}{2})$
6. A class has 30 students. $\frac{2}{5}$ of them like mathematics, $\frac{1}{3}$ of them like science, and the rest like English. Find the number of students who like English.
7. If the product of two rational numbers is $\frac{1}{2}$ and one of the numbers is $\frac{2}{5}$, find the other number.

Answer Key

1. Rational numbers can be expressed as fractions ($\frac{p}{q}$ where $q \neq 0$).

   $\sqrt{2}$ is not a rational number because it cannot be expressed as a fraction with integer numerator and denominator.

   Correct answer: **c) $\sqrt{2}$**

2. a. $0.25 = \frac{25}{100} = \frac{1}{4}$

   b. $-0.6 = -\frac{6}{10} = -\frac{3}{5}$

3. Since the denominators are the same:

   $\frac{(7-5)}{12} = \frac{2}{12} = \frac{1}{6}$

4. Multiply the numerators and denominators:

   $\frac{(-7 \times 2)}{(9 \times 3)} = -\frac{14}{27}$

5. Division of fractions involves multiplying the first fraction by the reciprocal of the second:

   $(\frac{-4}{7}) \times (\frac{2}{1}) = -\frac{8}{7}$

6. Number of students who like mathematics = $(\frac{2}{5}) \times 30 = 12$

   Number of students who like science = $(\frac{1}{3}) \times 30 = 10$

   Students who like English = Total students - (Math + Science):

   $30 - (12 + 10) = 8$

7. If the product of two rational numbers is $\frac{1}{2}$ and one of the numbers is $\frac{2}{5}$, find the other number.

   Let the other number be x. Then:

   $(\frac{2}{5}) \times x = \frac{1}{2}$

   Solve for x:

   $x = (\frac{1}{2}) \div (\frac{2}{5})$

   $x = (\frac{1}{2}) \times (\frac{5}{2}) = \frac{5}{4}$

Learning Level Tracker

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

Class: 7		Subject: Maths		
Roll No.	Name of the Student	Chapter: Rational Numbers		
		Level 1	Level 2	Level 3

Chapter 9 : Perimeter and Area

Activity 1 Cutter and Calculator

35 mins

Instructions

- Divide the class into pairs. Assign one student as the "Cutter & Shifter" and the other as the "Area Calculator."
- Give each pair a sheet of graph paper, a ruler, and coloured pencils. Ask the "Cutter & Shifter" to draw a parallelogram of their choice on the graph paper using the ruler, keeping the shape neat and angles clearly visible.
- Explain that the "Cutter & Shifter" will draw a vertical height from the top vertex down to the base (forming a right angle), then carefully cut off the triangle formed on one side of the parallelogram along this height and shift it to the opposite side—when aligned, it forms a rectangle.
- While the cutting and shifting is happening, ask the "Area Calculator" measures the base and the corresponding height of the original parallelogram, and calculates the area using the formula: Area = base × height
- Once the rectangle is formed, guide the "Area Calculator" to measure the same base and height of the new rectangle to verify that the area remains the same.
- After completing the activity, have the pairs switch roles and repeat the process with a new parallelogram.
- Conclude by discussing how cutting and shifting the triangle from one side of the parallelogram to the other changed its shape into a rectangle without changing the overall area and encourage students observe that the base and height remained the same, showing that the area of the parallelogram is equal to the area of the rectangle—proving that the formula Area = base × height holds true for parallelograms as well.

Activity 2 Triangles of Squares

35 mins

Instructions

- Divide the class into teams of 4 students and give each team a square of a different size.
- Instruct the teams to fold their square along one diagonal, forming two right-angled triangles and encourage them to observe how the size of the triangle changes based on the size of the square.
- Assign roles to each team:
- Area Masters (2 students): Measure the base and height of one triangle and calculate the area using the formula:

  $\frac{1}{2}$ base x height

- Congruency Detectives (2 students): Compare their triangles with those from another team to check if they match in size and shape by carefully aligning the edges.
- Explain that once the Area Masters finish calculating the area, the Congruency Detectives shall verify congruency by aligning their triangles with other teams to see if they are identical in size and shape.
- As teams complete their calculations and congruency checks, circulate around the room, checking the accuracy of each team's area calculation and the congruency of the triangles and provide guidance or corrections as needed to ensure students understand both the area formula and the concept of congruency.
- After all teams complete the calculations and congruency checks, gather the class together for a brief discussion. Explain that the area of a triangle is directly related to the size of the square, but while the triangles are congruent in shape, their sizes vary depending on the dimensions of the square.

Activity 3 Circles Around Us

35 mins

Instructions

- Divide the class into groups of 3 or 4 and provide each group with a circular object of their choice (e.g., bottle cap, plate, circular lid). Ensure objects of varying sizes are available.
- Instruct students to use a ruler to measure the diameter of their circular object. Explain how to calculate the radius by dividing the diameter by 2.
- Guide them in finding the circumference of their object using one of the following formulas:

  $C = \pi \times d$ (using the diameter) or

  $C = 2 \times \pi \times r$ (using the radius).
- Now, provide each group with graph paper. Ask them to trace the outline of their circular object onto the graph paper and count the enclosed squares to roughly estimate the area of the circle.
- Encourage them to include partial squares in their count by estimating their size: if a partial square covers half of the small square, take the value as 0.5; if it is less than half, take it as 0; and if it is more than half, take it as 1.
- After completing their estimates, instruct students to calculate the area of their object using the formula: $A = \pi \times r^2$, substituting the radius they calculated earlier.
- Once all groups have finished, ask students to compare estimated areas from the graph paper with calculated areas using the formula.
- Conclude by discussing why measuring with a formula is typically more accurate than estimation and guide students to explore real-world applications of circumference and area, such as fencing circular gardens or designing circular objects.

Assessment

35 mins

1. The area of a triangle with base 6 cm and height 4 cm is:
   a) 12 cm^2
   b) 24 cm^2
   c) 6 cm^2
   d) 10 cm^2
2. Match the following:

Column A	Column B
Area of a circle	Base × height
Area of a parallelogram	$\pi \times r^2$,
Area of a triangle	$\frac{1}{2}$ × base × height
Circumference of a Circle	$2 \times \pi \times r$

3. Find the area of a triangle with base 12 cm and height 9 cm.
4. A parallelogram has a base of 12 m and a height of 8 m. Find:
   a) The area of the parallelogram
   b) The perimeter of the parallelogram (If the sides of the parallelogram are 10 m and 12 m, calculate the perimeter.)
5. A circular park has a radius of 7 m. Find the area of the park. (Use $\pi = \frac{22}{7}$)
6. A triangular plot of land has a base of 14 m and a height of 12 m. A rectangular piece of land is placed inside this triangular plot. The rectangle has a length of 8 m and a width of 6 m.
   a) Find the area of the triangular plot.
   b) Find the remaining area of the triangular plot after placing the rectangular piece inside it.

Answer Key

1. The area of a triangle with base 6 cm and height 4 cm is:

   Formula: Area = $(\frac{1}{2}) \times$ base × height

   Area = $(\frac{1}{2}) \times 6 \times 4 = 12$ cm^2

   Correct answer: a) 12 cm^2
2. Match the following:

Column A	Column B
Area of a circle	$\pi \times r^2$
Area of a parallelogram	Base × height
Area of a triangle	$\frac{1}{2}$ × base × height
Circumference of a circle	$2 \times \pi \times r$

3. Find the area of a triangle with base 12 cm and height 9 cm:

   Formula: Area = $(\frac{1}{2})$ × base × height

   Area = $(\frac{1}{2})$ × 12 × 9 = 54 cm²

   Answer: 54 cm²

4. a) Area of the Parallelogram:

   Use the formula:

   Area=Base × Height

   Substitute base = 12 m and height = 8 m to find the area.

   96 m²

   b) Perimeter of the Parallelogram:

   Use the formula:

   Perimeter=2 × (Base + Side)

   Substitute base = 12 m and side = 10 m to find the perimeter.

   44 m

5. A circular park has a radius of 7 m. Find the area of the park (Use $\pi = \frac{22}{7}$):

   Formula: Area = π × r²

   Area = $(\frac{22}{7})$ × 7 × 7 = 22 × 7 = 154 m²

   Answer: 154 m²

6. A triangular plot of land has a base of 14 m and a height of 12 m. A rectangular piece of land is placed inside this triangular plot. The rectangle has a length of 8 m and a width of 6 m.

   Area of the triangular plot

   Formula: Area = $(\frac{1}{2})$ × base × height

   Area = $(\frac{1}{2})$ × 14 × 12 = 7 × 12 = 84 m²

   Answer: 84 m²

   Remaining area of the triangular plot after placing the rectangle

   Area of the rectangle:

   Area = Length × Width

   Area = 8 × 6 = 48 m²

   Remaining area:

   Remaining area = Area of triangle - Area of rectangle

   Remaining area = 84 - 48 = 36 m²

   Answer: 36 m²

Learning Level Tracker

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

Class: 7		Subject: Maths		
Roll No.	Name of the Student	Chapter: Perimeter and Area		
		Level 1	Level 2	Level 3

Chapter 10 : Algebraic Expressions

Activity 1 Expression Builder Game

35 mins

Instructions

- Divide the students into 4-5 groups and distribute each group some pre-made materials, like- sets of cut-out cards labelled as Variables (x,y,a,b etc.), Constants, and Operators (+,-,×,÷).
- Discuss how an Algebraic Expression is made, what are the components required.
- After distributing pre-made materials, challenge groups to build as many correct algebraic expressions as possible using the cut-out cards.
- Each valid expression will earn a point.
- Then ask each group to write a word statement for the expression. This will give them a bonus point for correct statement (For example- for 2x+5, one can write twice a number plus 5).
- To extend this activity, encourage each group to build algebraic expressions based on real-life situations.
- Use sticky notes to write down the real-life situations with algebraic expression and paste it on the wall or any board.

Activity 2 Terms and Factors

35 mins

Instructions

- Pair up students and have them take turns writing and analysing algebraic expressions.
- Ask the first student in each pair to write an algebraic expression (e.g., $5x + 3y$, $-2a^2 + 4b$, etc.).
- The second student identifies the components of the expression, including:

  Terms: Breaking the expression into individual parts separated by + or − signs.

  Factors: Listing the factors that make up each term.

  Coefficients: Identifying the numerical values attached to the variables.
- Once Student 2 completes the analysis, ask him/her to create a new algebraic expression and pass it to Student 1.
- Student 1 now analyses the new expression, identifying the terms, factors, and coefficients.
- Encourage students to create diverse expressions that include multiple variables, exponents, or constants to make the activity more engaging and challenging.
- Wrap up with a discussion, clarifying any doubts and sharing interesting observations from different pairs.

Activity 3 Bowls of Expressions

35 mins

Instructions

- Write the following algebraic expressions on slips and place them in Bowl 1:
  - $2x + 3$
  - $x^2 - 4$
  - $5x - 7$
  - $3x^2 + 2x$
  - $\frac{x}{2} + 1$
  - $4x - 5$
- Write the following values of x on slips and place them in Bowl 2:
  - $x = 2$
  - $x = -3$
  - $x = 5$
  - $x = 0$
  - $x = 1$
  - $x = -2$
- Divide the class into small groups of 3–4 students each.
- One student from each group picks a slip from Bowl 1, containing an algebraic expression.
- Another student from the same group picks a slip from Bowl 2, containing a value of x.
- The group substitutes the chosen value of x into the selected algebraic expression and calculates the result.

  For example: If the expression is $2x + 3$ and $x = 5$, the group substitutes 5 for x:

  $2(5) + 3 = 10 + 3 = 13$
- Each group shares their expression, value of x, and calculates result with the class.
- Allow each group to repeat the activity with different slips to practice further.
- Conclude with a discussion on how substituting values into expressions helps in evaluating and understanding algebraic equations in practical scenarios.

Assessment

35 mins

1. Which of the following is an algebraic expression?
   a) 2x + 5
   b) 7
   c) 8 × 3
   d) 4 ÷ 2
2. Add the following algebraic expressions:
   a) (3x + 5) + (4x + 7)
3. Subtract the following algebraic expressions:
   a) (6x + 5y) – (3x + 2y)
4. Simplify the following expression:
   a) 7x + 3y + 2x + 5y
5. The perimeter of a rectangle is given by the expression 2(l + b), where l is the length and b is the breadth. Write an algebraic expression for the perimeter of a rectangle where the length is 2x + 5 and the breadth is x + 3. Find the perimeter when x = 2.
6. A person deposits ₹2,000 every month into a savings account. If "x" represents the number of months, write an algebraic expression for the total amount deposited.
   a) How much money will be deposited after 12 months?

Answer Key

1. Answer: a) 2x + 5 (An algebraic expression includes variables, numbers, and operations, unlike the others which are purely numbers or arithmetic).
2. (3x + 5) + (4x + 7) = 7x + 12
3. (6x + 5y) – (3x + 2y) = 3x + 3y
4. 7x + 3y + 2x + 5y = 9x + 8y
5. Expression: 2((2x + 5) + (x + 3))
   Simplify: 2(3x + 8) = 6x + 16
   Substitute x = 2: 6(2) + 16 = 12 + 16 = 28
   Answer: 28
6. Expression: 2000x
   For x = 12: 2000 × 12 = ₹24,000
   Answer: ₹24,000

Learning Level Tracker

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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: 7		Subject: Maths		
Roll No.	Name of the Student	Chapter: Algebraic Expressions		
		Level 1	Level 2	Level 3

Chapter 11 : Exponents and Powers

Activity 1 The Living Root Bridges Energy Puzzle

35 mins

Instructions

- Make a scenario like:

  "In the green valleys of Meghalaya, the Khasi elders are nurturing the Living Root Bridges found in places like Mawlynnong and Nongriat. These bridges are natural wonders, but calculating the energy needed for their care has become confusing due to huge numbers. The energy values are written as repeated multiplication, and villagers can't make sense of them!"

  The elders have invited our class — the **Bridge Energy Squad** — to help simplify and understand these huge values using the magical powers of **exponents**!
- Divide the class into 4–5 groups of "Bridge Energy Squads".
- Before the activity: Prepare "Energy Cards" with problems such as:
  - $2^4 \times 2^3$
  - $10^5 \div 10^2$
  - $5^6 \div 5^3$
  - $3^4 \times 3^2$
- During the activity, introduce exponent laws:
  - **Explain the Logic First:** Before writing anything on the board, explain the concept behind combining exponents when multiplying or dividing. You can use a simple example: "If we have 2×2×2 (which is 2^3) and we multiply it by 2×2 (which is 2^2), how many 2s do we have in total? 2×2×2×2×2, which is 2^5. Notice how 3+2=5!"
  - **Then Write on the Board:** Once the logic is clear, write the exponent laws on the board:
    - $a^m \times a^n = a^{m+n}$
    - $a^m \div a^n = a^{m-n}$
- Hand out 2–3 cards to each team and let them simplify and calculate the result.
- Teams come up and write their answers under their squad's name on the board.

  Example: Squad Mawlynnong – Card 1: $2^4 \times 2^3 = 2^7 = 128$
- Bonus Challenge: Give a card with a problem that requires an extra step, like:
  - $(2^2)^3$ (power of a power)
  - $(3\times2)^2$ (product of powers)

    This will encourage them to think beyond the basic addition/subtraction of exponents and apply another fundamental exponent rule.
- Wrap up the discussion and ask, "Why do we prefer exponents over long multiplication?" and "Where else do we see such large numbers in real life?"
- Emphasise how:
  - Exponents help manage large values in science and nature.
  - Used in tracking energy, digital storage, and environmental calculations.

Activity 2 The Shillong Power Grid

35 mins

Instructions

- Begin the class with a scenario:

  *"The electricity board of Shillong has started building modern 'Power Grid Towers' across East Khasi Hills. Each tower generates electricity in exponential units like 3^2, 3^3, or 3^5. Your team has been appointed as the **Electricity Efficiency Squad** to check and simplify these units for the engineers!"*
- Team formation: Divide into 4 groups. Each becomes a unit of the Shillong Power Board.
- Before the activity, prepare "Tower Cards" that reflect real-life situations:
  - **Card 1 (Power Surge):** "Tower Alpha experienced a power surge, multiplying its output. It went from 3^2 units to $3^2 \times 3^4$ units. What's the new simplified output?"
  - **Card 2 (Grid Optimisation):** "For optimal grid flow, Tower Beta's initial output of 10^6 units was divided by 10^3 units. What's the resulting power?"
  - **Card 3 (Multi-Tower Output):** "Three towers are connected: Tower Gamma started at 2^5 units, then added 2^2 units from a backup generator, and finally had to reduce output by 2^3 units for maintenance. What's the net power output?"
  - **Card 4 (Efficiency Check):** "During an efficiency check, Tower Delta's 5^4 units of power were to be distributed, effectively dividing its output by 5^2 units. What's the simplified distributed power?"
- Briefly review the rules of exponents on the board, using simple examples to illustrate why they work (e.g., $a^m \times a^n = a^{m+n}$ and $a^m \div a^n = a^{m-n}$).
- Hand out two "Tower Cards" to each team or group.
- **Calculate and Display:** Teams will work together to calculate the final output energy. Once they have their answers, they should write both the simplified exponential form and the numerical answer on the board under their team's name (e.g., "Shillong Power Unit 1 – Card 1: $3^6=729$ units").
- Bonus Challenge: The Unexpected Power Link!
  - Give each team a "trick card" like: "3^2 units from Tower X and 5^2 units from Tower Y are unexpectedly linked. And ask, can you combine their power using the rules we've learned? Justify your answer!"
  - This encourages them to discover that exponent laws for multiplication/division only apply when bases are the same, prompting a discussion about the **limitations of the rules**.
- Wrap up the activity by asking some questions:
  - "Why do you think engineers use powers instead of repeated multiplication?"
  - "What would happen if we didn't simplify such numbers?"

Activity 3 Cloud Counting in Mawsynram

35 mins

Instructions

- Begin the class with a scenario:

  *"In Mawsynram, where it rains almost every day, meteorologists use satellites to count raindrops. The data is massive: like 10^6 drops per cloud, and 10^5 clouds a day. They need help converting and simplifying these figures for reports. Your class is now the **Cloud Scientists Team.**"*
- Divide the class into 5-6 teams of "Meteorology Units"
- Before the activity, prepare "Raindrop Cards" with real-world tasks like:
  - **Card 1 (Cloud Burst Volume):** "A small cloud burst released 10^3 drops per second for 10^2 seconds. Calculate the total number of drops released during this burst."
  - **Card 2 (Rainfall Intensity Change):** "A massive rainstorm initially had an intensity of 10^5 drops per square meter. Due to changing winds, the intensity then reduced by a factor of 10^3. What is the new intensity of raindrops per square meter?"
  - **Card 3 (Cumulative Rain Collection):** "A specific rain gauge collected 2^4 liters of water in the morning, and then an additional 2^6 liters in the afternoon. What is the total volume of water collected by the gauge for the day?"
  - **Card 4 (Humidity Fluctuation):** "A weather balloon initially measured 3^5 units of humidity. After passing through a very dry patch, the humidity dropped, effectively dividing its reading by a factor of 3^2. What is the new humidity reading?"
- Each team will receive two "Raindrop Cards" and for each card, teams must **simplify the exponential expression** using the appropriate exponent rules.
- Following simplification, they will **write a complete sentence explaining the real-world meaning** of their simplified answer based on the card's scenario.
  - *Example:* For "Card 1: $10^3 \times 10^2$", the team would simplify to 10^5, and then write: "This cloud burst released a total of 10^5 (or 100,000) drops."
- Finally, teams will **present their simplified answers and real-world interpretations** to the class, fostering discussion and understanding.
- **Bonus challenge:** Ask them to estimate the total number of raindrops that might fall in Mawsynram in a month, using powers of 10, given the scenario's daily figures.
- Wrap up the activity as:
  - "How does exponential notation help meteorologists and other scientists manage and understand massive data like raindrop counts or other weather phenomena?"
  - "Would it be harder to work with such numbers and communicate findings effectively without the use of exponents?"

Assessment

35 mins

Answer the following questions:

1. The value of $2^3 \times 2^4$ is:
   a) 2^{12}
   b) 2^7
   c) 2^1
   d) 2^9
2. Which of the following is equal to $(3^4)^2$?
   a) 3^6
   b) 3^8
   c) 3^2
   d) 3^{12}
3. The value of 100 is:
   a) 1
   b) 0
   c) 10
   d) Not defined
4. What is the standard form of 60000000?
   a) 6 x 106
   b) 6 x 107
   c) 60 x 106
   d) 6 x 108
5. Which of the following is the smallest?
   a) 5^{-1}
   b) 5^{-2}
   c) 5^0
   d) 5^1
6. Simplify $\frac{(3^5 \times 3^2)}{3^4}$
7. Express the following number in standard form: 0.00089
8. The distance between Earth and Moon is approximately 3,84,000 km.
   The distance between Earth and Sun is approximately 1,500,000,000 km.
   Express both distances in standard form and find how many times the Earth–Sun distance is greater than the Earth–Moon distance.

Answer Key

1. 2^7
2. 3^8
3. 1
4. 6×10^7
5. 5-2
6. $\frac{3^{5+2}}{3^4} = \frac{3^7}{3^4} = 3^{7-4} = 3^3 = 27$
7. 8.9×10^{-4}
8. Earth–Moon distance = 3.84×10^5 km

   Earth–Sun distance = 1.5×10^9 km

   Ratio = $\frac{1.5 \times 10^9}{3.84 \times 10^5} = \left(\frac{1.5}{3.84}\right) \times 10^{9-5} = 0.390625 \times 10^4$

   $= 3.90625 \times 10^3$

   So, the Earth–Sun distance is approximately **3906 times greater** than the Earth–Moon distance.

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

Class: 7		Subject: Maths		
Roll No.	Name of the Student	Chapter: Exponents and Powers		
		Level 1	Level 2	Level 3

Chapter 12 : Symmetry

Activity 1 The Sacred Umbrella of Shillong

35 mins

Instructions

- Begin the session by making a scenario

  "In the hills of Shillong, artisans craft beautiful ceremonial umbrellas used in tribal rituals. These umbrellas are known for their perfect symmetry. However, a shipment of half-finished umbrella designs has arrived for the upcoming spring festival, and the artisans need help completing them!"
- You are now the **Royal Designers of Symmetry**, chosen to restore balance in these umbrella designs using your understanding of line symmetry.
- Divide the class into 4–5 teams of "Umbrella Symmetry Designers".
- Before the activity, prepare half-drawn umbrella templates (semi-mandalas, floral geometric patterns) on A4 sheets. Each design must have a clear vertical or horizontal line of symmetry

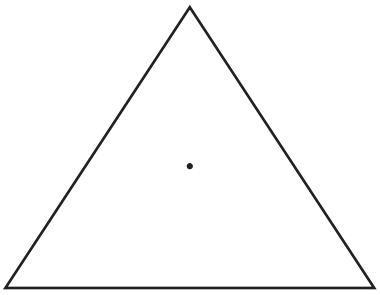
- Each team will receive a half-completed umbrella design. Their task is to **complete the other half** using pencils and rulers, ensuring perfect symmetry along the given line.
- Teams can **optionally use a mirror** to check the accuracy of their symmetrical design.
- Once the drawing is complete, teams should **colour their full design**, maintaining colour symmetry to enhance the visual balance.
- Let the Teams display their umbrellas and explain how they identified and used the line of symmetry.
- Wrap-up the discussion as:
  - "Why was it important to complete the pattern symmetrically for these ceremonial umbrellas?"
  - "What do you think would have happened if the pattern wasn't symmetrical?"
  - Emphasise how line symmetry is used in tribal art, flags, logos, and textile designs for visual harmony and balance.

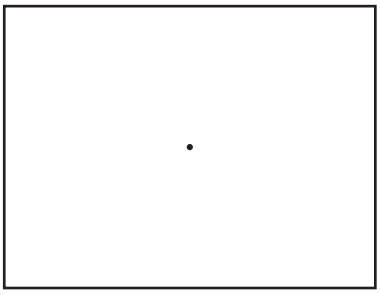
Activity 2 The Rotating Jewels of Meghalaya

35 mins

Instructions

- Begin the class by making a scenario " Deep within the secret caves of Meghalaya, hidden gems are said to possess magical properties. These gems are perfectly shaped in **regular polygons**, and to unlock their power, ancient legends say they must be rotated until they perfectly align with their original position. The elders need your help to understand the 'magic number' of turns for each gem!"
- You are now the **Gem Rotators**, chosen to discover the hidden symmetry within these precious, polygon-shaped jewels.
- Form the teams and divide the class into 4 teams of **"Gem Rotators"**.
- Before the activity, prepare "Gem Cards" featuring regular polygons or objects/alphabets that exhibit rotational symmetry:
  - Print or draw large cutouts of regular polygons (e.g., equilateral triangle, square, regular pentagon, regular hexagon).
  - Include a central dot on each shape to indicate the point of rotation.
  - *Optional:* You could also include shapes like a four-bladed fan, a star, or letters like 'H' or 'O'.





- Each team will receive 2–3 "Gem Cards" and for each gem, teams must **identify the order of rotational symmetry** by physically rotating the cutout (or by tracing and rotating on paper) around its central point until it aligns perfectly with its original position. They should count how many times it aligns in a full 360-degree turn.
- Next, teams will **calculate the angle of rotation** for each gem using the formula: 3600/ (order of rotational symmetry).
- Teams will record their findings for each gem: **Shape Name, Order of Rotational Symmetry, and Angle of Rotation.**
- **Bonus challenge:** Ask each team to design a new "magical gem" shape that has an order of rotational symmetry of exactly 3 (e.g., a Mercedes-Benz logo, a Y-shape). They should draw it and mark its centre of rotation.
- Wrap-up discussion:
  - "Which of your gems had the highest order of rotational symmetry? What does that mean about its shape?"
  - "How is rotational symmetry different from the line symmetry we discussed earlier?"
  - Emphasise how rotational symmetry is found in nature (flowers, snowflakes), art (mandalas), and engineering (gears, propellers), making objects balanced and functional.

Activity 3 Rangoli Revival

35 mins

Instructions

- Start the activity with a story:

  "During a festival in Meghalaya, villagers make beautiful rangoli patterns that symbolise nature and harmony. But due to the stormy weather, half of the rangolis were washed away!"
- You students are now the **Festival Rangoli Team**, in charge of restoring the missing half using symmetry.
- Form the teams and divide the class into 5 Rangoli Design Teams.
- Before the activity, prepare the drawing surface:
  - **Teachers, please draw a few half-drawn rangoli templates** on the whiteboard or blackboard. These designs should have a clear vertical or horizontal line of symmetry.
  - Provide **graph paper** for each student to ensure neatness and accuracy when copying and completing the designs.
- Each team will choose one of the half-drawn rangoli designs from the board to copy onto their graph paper.
- Using a ruler and pencil, students will **reflect the design across the given line of symmetry** to complete the other half of the rangoli.
- Once the drawing is complete, teams will **add colours symmetrically** to enhance their design, ensuring the colours mirror each other across the line of symmetry.
- Finally, teams will **present their completed rangoli designs** to the class, briefly explaining how they used the line of symmetry.
- **Bonus challenge:** Ask each team to design a brand-new rangoli pattern of their own, using any polygonal shapes they like, and ensure it has at least one line of symmetry.
- Wrap-up discussion as:
  - “Why do rangoli patterns often follow symmetry?”
  - "Can you name other things in your surroundings, besides rangolis, that use symmetry in decoration or design?"
  - Emphasise how symmetry is a common principle found in art, patterns, and nature across Meghalaya and beyond.

Assessment

35 mins

Answer the following questions:

1. Which of the following figures has **only one line of symmetry**?
   a) Equilateral triangle
   b) Square
   c) Rectangle
   d) Isosceles triangle
2. A regular pentagon has how many lines of symmetry?
   a) 5
   b) 4
   c) 3
   d) 6
3. Which English letter has **rotational symmetry but no line symmetry**?
   a) H
   b) O
   c) N
   d) A
4. A figure has rotational symmetry if it looks the same after rotation of:
   a) 90^o
   b) 180^o
   c) 360^o
   d) All of the above
5. Which of the following shapes has **both line and rotational symmetry**?
   a) Rectangle
   b) Scalene triangle
   c) Parallelogram
   d) Rhombus
6. Draw a rough sketch of the letter "H" and show all lines of symmetry.
7. State the order of rotational symmetry of the following:
   (a) Equilateral triangle
   (b) Square
8. Explain the difference between **line symmetry** and **rotational symmetry** with the help of two different figures. Also, identify a real-life example for each.

Answer Key

1. Isosceles triangle
2. 5
3. N
4. All of the above
5. Rhombus
6. The letter "H" has **two lines of symmetry**: one **vertical** and one **horizontal**.
7. (a) Equilateral triangle: Order = 3
   (b) Square: Order = 4
8. Solution:
   - **Line symmetry** means the figure can be divided into two identical halves by a line. Example: A **butterfly** has line symmetry.
   - **Rotational symmetry** means a figure looks the same after rotation about a point. Example: A **steering wheel** has rotational symmetry.

   Figure Examples:
   - Line symmetry: Equilateral triangle (3 lines of symmetry)
   - Rotational symmetry: Square (looks same after 90°, 180°, 270°, and 360° rotations)

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Class: 7		Subject: Maths		
Roll No.	Name of the Student	Chapter: Symmetry		
		Level 1	Level 2	Level 3

Chapter 13 : Visualising Solid Shapes

Activity 1 The Bamboo Market Mystery

35 mins

Instructions

- Start the activity with a condition:

  "In the local bamboo markets of Shillong, artisans build boxes to pack various handicrafts. Unfortunately, the packaging expert is on leave, and now the team must create proper nets for boxes based on given requirements."
- You are now the **Packaging Designers of Meghalaya**, entrusted with designing nets for boxes of different shapes.
- Form the teams and divide the class into 4–5 teams of **"Artisan Designers"**.
- Before the activity:
  - Provide each team with **shape cards** clearly stating a solid 3D shape: **cube, cuboid, cylinder, or cone**.
  - Ensure each team has **graph paper, pencils, rulers, scissors, and tape or glue sticks**.
- Begin the activity by explaining: "A **net** is a flat, 2D pattern that can be folded to form a 3D solid shape. Think of it like unfolding a cardboard box completely flat." Show a simple example of a net (e.g., for a cube) on the board and demonstrate how it folds.
- Each team will receive their assigned shape card (e.g., cube, cuboid). On the **graph paper**, they need to **carefully draw the correct net** for their assigned 3D shape. Encourage them to use the grid lines for precision and to draw tabs (small flaps) on the edges where they will apply glue or tape for assembly.
- Once the net is drawn, teams will **carefully cut out their net along the outer edges**, including the tabs. Remind them to be precise to ensure the shape folds correctly.
- Now comes the exciting part! Teams will **fold their cut-out net along all the interior lines** (the lines that define the faces of the 3D shape). They should then use tape or glue on the tabs to **securely connect the edges** and form their assigned 3D solid shape. Encourage them to test their folds before applying adhesive.
- Once their 3D shape is successfully formed, teams will **either stick their folded net into their notebooks** (if it's small enough) or **display it on a chart** for presentation.
- **Bonus Challenge:** Ask teams to draw one **incorrect net** for their assigned shape on a separate piece of paper. They should then **explain why this net would NOT form the correct solid shape** when folded.
- Wrap up the discussion as:
  - "What challenges did you observe when drawing and folding your nets?"
  - "Why is knowing how to design and use nets so important in real-world applications like packaging, product design, and the handicraft businesses we see in Meghalaya?"
  - Emphasise that nets are crucial for efficient production, minimising waste, and ensuring products fit perfectly in their packaging.

Activity 2 The Treehouse View

35 mins

Instructions

- Start the session with a small story:

  "In the forested areas of Meghalaya, a group of school children is building a model treehouse. They must draw how the treehouse looks from the front, top, and side to present it to their elders for approval."

  You are now the **Young Architects of Cherrapunji**, helping to visualise the treehouse plan.
- Form the teams and divide the class into 5 **"Architect Teams"**.
- Before the activity, give each team a simple 3D Shapes. You can use readily available local resources like:
  - **Geometric solids:** (e.g., a cube, a cuboid/matchbox, a cylinder, a cone, a triangular prism, a pyramid).
  - **Everyday objects:** (e.g., a tin can, a brick, a block of wood, a simple toy car).
  - Ensure each team also has **plain or grid paper, pencils, and rulers**.
- Now, the teams will carefully observe the set of 3D shapes provided. Each team will then **select one shape** to work with for this activity. Encourage them to rotate the object and look at it from all angles.
- On their paper, each team will **sketch three distinct views** of their chosen 3D shape:
  - The **Top View** (how it looks directly from above).
  - The **Front View** (how it looks directly from the front).
  - The **Side View** (how it looks directly from one side – clarify which side, e.g., the right side).

  Remind students to use their rulers for neatness and accuracy.
- Once sketches are complete, teams will **compare their drawn views with those drawn by other teams** who worked on the same or different shapes. This is a great opportunity to spot differences and discuss accuracy.
- As a class or within teams, **discuss which view provides specific information** about the object. For example:
  - "Which view helps you understand the **height** of the object?"
  - "Which view shows you the **width**?"
  - "Which view helps you understand its **depth**?"
- **Bonus Challenge:** Let teams use building blocks (like LEGOs or wooden blocks) to **construct their own unique 3D model**. Once built, they must then **draw the top, front, and side views** of their self-designed structure.
- Wrap-up discussion by asking:
  - "Why are understanding and drawing different views so important in professions like architecture, engineering, and even in building simple models like our treehouse?"
  - "Which view did you find most helpful for understanding the overall layout or form of your 3D shape, and why?"
  - Emphasise how visualising from different angles helps in architecture, town planning, and model-making, providing a complete picture of a design.

Activity 3 Sacred Stones and Hidden Shapes

35 mins

Instructions

- Begin the class by providing a scenario:
  "The monoliths in Nartiang are large ancient stones that seem like blocks from a far. Historians want to classify them based on their shapes – are they cuboids, cylinders, or irregular?"
- You are the **History Shape Analysts**, decoding ancient structures based on their shapes.
- Form the teams and divide the students into 4 teams of **"Shape Detectives"**.
- Before the activity, prepare pictures/drawings/printouts/newspaper cuts of 5–6 monoliths or local stone sculptures (both regular and irregular).
  - Each team gets 2 pictures.
  - Identify which solid shape it resembles (cube, cuboid, cylinder).
  - Sketch the shape and write down its features (faces, edges, vertices).
  - Classify the stones accordingly.
- **Bonus Challenge:** Pick one irregular shape and suggest how to represent it using a combination of solid shapes.
- Wrap up the discussion as:
  - "Why is it helpful to think of real things in terms of basic shapes?"
  - "Can you find similar shapes in other buildings or monuments?"
  - Emphasise on how visualising solids helps us study, restore, and recreate historical and cultural artefacts.

Assessment

35 mins

Answer the following questions:

1. How many faces does a cube have?
   a) 4
   b) 5
   c) 6
   d) 7
2. Which of the following shapes does **not** have a curved surface?
   a) Sphere
   b) Cylinder
   c) Cone
   d) Cube
3. A cylinder has how many **edges**?
   a) 1
   b) 2
   c) 3
   d) 0
4. A net is a _____ representation of a 3D object.
   a) Curved
   b) Pictorial
   c) 2D
   d) Transparent
5. Which of the following solids has only one vertex?
   a) Cube
   b) Cylinder
   c) Cone
   d) Cuboid
6. Describe the differences between a cube and a cuboid in terms of faces, edges, and vertices.
7. What is a net of a solid shape? Give one example.
8. Draw rough sketches of the following views of a cylinder: (a) Top View (b) Front View (c) Side View. Also, explain how these views help in understanding solid objects.
9. A triangular prism has how many faces, edges, and vertices? Explain briefly.
10. What is the importance of visualising solid shapes in daily life?

Answer Key

1. 6
2. Cube
3. 2
4. 2D
5. Cone
6. A **cube** has 6 square faces, 12 equal edges, and 8 vertices. All sides are equal in a cube. A **cuboid** also has 6 faces, 12 edges, and 8 vertices, but the faces are generally rectangular, and not all edges are equal. Thus, while both have the same number of faces, edges, and vertices, the **shapes and sizes of faces differ**.
7. A **net** is a 2D figure that can be **folded to form a 3D object**. It shows all the faces of the solid in one view. For example, a net of a cube consists of **six connected squares** which, when folded along the edges, form the cube.
8. Answer:
   - **Top view** of a cylinder looks like a **circle**.
   - **Front view** appears as a **rectangle**.
   - **Side view** is also a **rectangle**.
9. A **triangular prism** has 5 faces (2 triangular and 3 rectangular), 9 edges, and 6 vertices. The two triangular faces are parallel and congruent, while the 3 rectangular faces connect the corresponding sides of the triangles.
10. Visualising solid shapes helps us understand and identify real-life objects such as boxes, cans, balls, and buildings. It enhances spatial understanding and problem-solving skills used in fields like architecture, engineering, art, and design.

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: 7		Subject: Maths		
Roll No.	Name of the Student	Chapter: Visualising Solid Shapes		
		Level 1	Level 2	Level 3

Meghalaya Learning Enhancement Programme

SCIENCE

Chapter 1 : Nutrition in Plants

Activity 1 Sunlight and Photosynthesis

35 mins

Materials Required

A potted plant with broad green leaves (or a leafy twig), small pieces of black paper, tape

Note for the teacher: This activity will need 2-3 days of keeping a potted plant in sunlight. You can plan your classroom activities accordingly.

Instructions

- Place a potted plant in the classroom where students can observe it. If a potted plant is not available, ask some students to bring fresh leafy twigs.
- Divide the class into small groups and provide each group with a piece of black paper and tape.
- Each group selects a leaf and carefully covers a small part of it with black paper, ensuring that no sunlight reaches the covered section.
- Keep the plant in direct sunlight for 2-3 days.
- After the specified time, remove the black paper.
- Ask students to observe the differences between the covered and uncovered parts of the leaf.
- As students share their answers, guide them to understand that the covered part may appear paler, yellowish, or weaker, while the uncovered part remains green and healthy.
- Ask students why the covered part looks different.
- Discuss how plants use sunlight, carbon dioxide, and water to make their own food and how chlorophyll needs sunlight to function.
- Ask students, did the covered part of the plant receive these necessities to make their food.
- Encourage students to think: What would happen if an entire plant was kept in a dark room and never got sunlight?
- Discuss their answers and conclude the activity explaining the process of photosynthesis.

Activity 2 Bread Mould Investigation

35 mins

Materials Required

A piece of stale bread, a plate, some water, a dark and damp place

Note for the teacher: This activity will take 3-4 days as a piece of bread needs to be kept in a dark corner of the classroom. You can plan your classroom activities accordingly.

Instructions

- Place a small piece of stale bread on a plate.
- Sprinkle a few drops of water on it to keep it slightly moist.
- Keep the bread in a dark and damp place for about 2-3 days. Ensure no direct sunlight falls on the bread.
- After 2-3 days, check the bread.
- Invite students to come forward and observe the bread. They should be able to notice cotton-like white, green, or black patches growing on it. Tell students that this is fungus or mould.
- Ask students: Why did it grow on the bread?
- Explain that fungi do not have chlorophyll, so they cannot make their food like plants. Instead, they grow on dead and decaying matter by breaking it down and absorbing nutrients. This process is called saprotrophic nutrition.
- Ask students: Have they seen fungus growing on stale food at home? On fruits, vegetables, or damp walls?
- Explain how this is the same process that helps mushrooms grow in forests after rain.
- End the activity by discussing with students how storing food in dry places or refrigeration slows fungal growth.

Activity 3 Root Absorption

35 mins

Materials Required

A small onion and a cup of water

Note for the teacher: This activity will need 3-4 days of keeping an onion in a shaded corner of the classroom. You can plan your classroom activities accordingly.

Instructions

- Take a small onion and place it in a glass of water with its root side submerged in water.
- Keep the glass in a shaded classroom corner and let it sit undisturbed.
- After a day, check the onion.
- Students may observe that the existing roots look slightly thicker and whiter due to water absorption.
- Continue observing the glass for 3-5 days to see new roots slowly emerging and growing longer.
- Ask students to share their observations. Explain to them that plants absorb water through their roots to stay hydrated.
- Next, ask students: What will happen if we leave plants without water?
- Conclude the activity by asking students to write a short paragraph in their notebooks on the importance of water for plants.

Assessment

35 mins

Choose the correct option:

1. Which part of the plant is responsible for absorbing water from the soil?
   a) Stem
   b) Leaves
   c) Roots
   d) Flowers
2. Which of the following is an example of a non-green plant that derives nutrition from dead and decaying matter?
   a) Mango tree
   b) Mushroom
   c) Sunflower
   d) Rose
3. Taproots are found in?
   a) Wheat
   b) Maize
   c) Mango
   d) Bamboo

Answer the following questions:

4. Explain the difference between taproots and fibrous roots with examples.

   _____
   _____
   _____

5. Why do plants need sunlight for photosynthesis?

   _____
   _____
   _____

6. Farmers often add fertilisers rich in nitrogen to the soil. However, plants like pea and beans require less nitrogen fertiliser compared to other crops.
   a) Why do pea and bean plants require less nitrogen fertiliser?
   b) How does this process benefit the soil?

   _____
   _____
   _____
   _____
   _____

Answer Key

1. c) Roots
2. b) Mushroom
3. c) Mango
4. Taproots have a single main root that grows deep into the soil, with smaller secondary roots branching from it. They help in absorbing water from deep underground. Examples: Carrot, Mango.

   Fibrous roots consist of many thin roots growing from the base of the plant, spreading out near the surface. They help in quick absorption of water. Examples: Wheat, Grass.
5. Plants need sunlight for photosynthesis because light energy helps convert carbon dioxide and water into food (glucose) and oxygen. Chlorophyll in leaves absorbs sunlight to drive this process, allowing plants to produce their own food.
6. Farmers often add fertilisers rich in nitrogen to the soil. However, plants like pea and beans require less nitrogen fertiliser compared to other crops.

   a) Pea and bean plants require less nitrogen fertiliser because they have special root nodules containing bacteria called Rhizobium. These bacteria help absorb nitrogen from the air and convert it into a form that plants can use.

   b) This process benefits the soil by naturally increasing its nitrogen content, reducing the need for chemical fertilisers. It also improves soil fertility, making it more suitable for future crops.

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

Class: 7		Subject: Science		
Roll No.	Name of the Student	Chapter: Nutrition in Plants		
		Level 1	Level 2	Level 3

Chapter 2 : Nutrition in Animals

Activity 1 Pass the Food

35 mins

Materials Required

Blackboard, chalk and a paper ball

Instructions

- Draw a simple outline of the digestive system on the board. Draw some food items near the 'mouth' area on the board and ask students:
  - What happens when you take the first bite of food?
  - Why do we need to chew food properly before swallowing?
- Labels all the digestive organs (mouth, oesophagus, stomach, small intestine, large intestine, rectum, anus) in order.
- Ask a student to forward for this activity. Give a small ball (representing food) to him/her.
- Ask the student to pass the ball through the digestive tract, starting from the mouth. As the student brings the ball to the mouth, ask him/her to stop and explain what happens at this stage.
- Ask another to come forward and keep "passing" the ball through the next digestive organ while explaining what happens at that stage. For example, in the stomach, the food "churns".
- Go through the functions of all the digestive organs using this activity.
- Then, ask students: What surprised you about digestion?
- Conclude the activity by asking the students to draw a digestive system, label its key parts and relate the process to eating habits and health.

Activity 2 Exploring our Teeth

35 mins

Materials Required

Blackboard, chalk and paper slips (with functions of different types of teeth written on them)

Instructions

- Begin the class by asking a simple question, "Does a lion and a cow have the same set of teeth?" Let students share their answers and explanations, write down important points on the board.

- Explain to students how we use different teeth to eat different types of food and similarly, different animals use different teeth to eat their food.
- Write the four types of teeth (Incisors, Canines, Premolars and Molars) in a table on the board.
- Divide students into groups and give each group paper slips with different functions (e.g., cutting, tearing, grinding) written on them.
- Ask students to match the function cards with the correct tooth type by writing them in the correct column on the board. Tell students this is a guessing game and will help them learn more about their teeth.
- Ask students some follow-up questions and explain the position and functions of our teeth:
  - Which teeth help in biting an apple? (Incisors)
  - Which teeth would a lion use the most? (Canines)
  - Why do we need molars at the back?
- After the discussion, ask students if they would want to change their answers written on the board. Invite them to make the changes.
- Finally, discuss why brushing is crucial for dental health and end the activity with a fun question: What would happen if we only had canines?

Activity 3 Identify the Ruminants

35 mins

Materials Required

Paper slips and two boxes

Instructions

- Begin the class by asking some simple questions:
  - Can you name some animals that eat plants?
  - Do all plant-eating animals digest food the same way?
- Explain the difference between ruminants (cows, goats, deer – have a four-chambered stomach and chew cud) and non-ruminants (horses, pigs, humans – have a single stomach and do not chew cud).
- Divide the class into small groups. Ask all students of each group to take a small slip of paper and write the names of different animals of their choice (e.g., cow, dog, horse, sheep, buffalo, rabbit, cat, goat, tiger), to make word cards.
- Collect all the word cards from the groups and place them in a box.
- Ask a student representative from each group to come and pick new cards from the box, one for each member of their group.
- Place two boxes in the front, labelled "Ruminants" and "Non-Ruminants".
- One by one, students come forward to place their word cards in the correct envelope.
- Once all the students are done, pick up the word cards and review the answers together.

Assessment

35 mins

Choose the correct option:

1. Which of the following animals is a ruminant?
   a) Dog
   b) Cow
   c) Tiger
   d) Cat

2. Which type of teeth are used for tearing food in carnivorous animals?
   a) Molars
   b) Incisors
   c) Canines
   d) Premolars

3. Which part of the digestive system is responsible for producing digestive acids?
   a) Small intestine
   b) Liver
   c) Stomach
   d) Bamboo

Answer the following questions:

4. How do the different types of teeth help in eating food?

   _____
   _____

5. How does Amoeba gather food?

   _____
   _____

6. A student eats a meal containing rice, dal, and vegetables. After a few hours, they start feeling energetic. Explain how this happened using your understanding of digestion and absorption in the body.

   _____
   _____
   _____
   _____
   _____

Answer Key

1. b) Cow
2. c) Canines
3. c) Stomach
4. Each type of tooth has a specific function that aids the digestion process:

   Incisors: Flat front teeth used for biting and cutting food.

   Canines: Sharp, pointed teeth used for tearing food (especially in carnivores).

   Premolars: Broad teeth used for crushing and grinding food.

   Molars: Largest teeth at the back, used for grinding and chewing food into smaller pieces.
5. Amoeba gathers food using pseudopodia (temporary extensions of the cell membrane). The pseudopodia surround and engulf food particles. The food is then enclosed in a food vacuole, where enzymes break it down for digestion.
6. The student started to feel energetic because of:

   Digestion:
   - The food is broken down in the digestive system.
   - Rice (carbohydrates) is broken down into glucose.
   - Dal (proteins) is broken down into amino acids.
   - Vegetables (vitamins & fibre) aid digestion and provide essential nutrients.

   Absorption:
   - In the small intestine, nutrients are absorbed into the bloodstream.
   - Glucose is used by cells to produce energy through respiration.
   - This process makes the student feel energetic.

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Name of the School:	**UDISE:**
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Class: 7		Subject: Science		
Roll No.	Name of the Student	Chapter: Nutrition in Animals		
		Level 1	Level 2	Level 3

Chapter 7 : Transportation in Animals and Plants

Activity 1 Heart Rate

35 mins

Materials Required

Stopwatch/ clock, notebook, pen/ pencil.

Instructions

- Ask students to sit quietly in pairs.
- Provide each pair with a stopwatch or a watch with a second hand.
- Instruct one student to place two fingers on the side of their wrist or neck to locate their pulse, while the other partner keeps time.
- Ask them to count the number of beats in 15 seconds and multiply the number by four to calculate their heart rate per minute.
- Instruct them to record this as their **resting heart rate**.
- Now, have the partners switch roles and repeat the process. Each student should write down their partner's pulse rate in their notebook.
- Next, ask one partner to do 20 jumping jacks or jog in place for one minute.
- Immediately after the exercise, have them check their pulse again and record the new reading.
- Repeat the same activity with the other partner.
- Facilitate a discussion about the change in pulse rate before and after exercise.
- Explain the students that the heart pumps blood throughout the body, carrying oxygen and nutrients to muscles and organs. During physical activity, the muscles need more oxygen, so the heart beats faster to supply it. This change in pulse rate helps students understand how the circulatory system adjusts based on the body's needs.
- Relate this to how the transportation of oxygen and nutrients occurs through the blood, ensuring all parts of the body function efficiently.
- Conclude the activity by asking students to reflect on how their heart rate changed and what this tells us about the body's response to exercise. Emphasise that the circulatory system is essential for delivering oxygen and nutrients, especially when the body is active.

Activity 2 Two Friends in Action – Xylem and Phloem

35 mins

Materials Required

Transparent glass, water, ink/food colour, a fresh leafy twig, white tissue paper.

Instructions

- Fill a transparent glass with water and add a few drops of ink or food colouring.
- Alternatively, dip one end of a tissue paper strip into the coloured water and let students observe how the colour slowly moves upward through the paper.
- Ask students to note how the water travels upward, seemingly against gravity.
- Use this observation to initiate a discussion on capillary action and how it mirrors the way water moves through a plant.
- Explain that in plants, xylem tissues are responsible for transporting water from the roots to the leaves.
- Relate this process to the importance of water transportation in trees and its crucial role in photosynthesis, nutrient distribution, and overall plant survival.
- Conclude the activity by asking students to describe what they observed and connect it to how real plants absorb and distribute water.
- Reinforce the idea that water transport is a vital function in plants, enabled by specialised tissues like xylem, ensuring their growth and survival.

Activity 3 The Journey of Blood

35 mins

Materials Required

Name tags (Heart, Lungs, Arteries, Veins, Body Cells), small balls (representing oxygen and carbon dioxide).

Instructions

- Assign different students to play the roles of Heart, Lungs, Arteries, Veins, and Body Cells.
- Provide soft balls labelled as "Oxygen" to the students playing the Lungs.
- The Lungs pass the oxygen balls to the Heart.
- The Heart then sends the oxygen balls through the Arteries to the Body Cells.
- The Body Cells exchange the oxygen balls for balls labelled "Carbon Dioxide".
- The Veins then carry the carbon dioxide balls back to the Heart, which sends them to the Lungs for exhalation.
- Repeat the cycle to help students visualise the continuous movement of blood and gases in the circulatory system.

- Explain the students that this role-play demonstrates how the circulatory system works. The heart pumps oxygen-rich blood from the lungs to the body through arteries. After the body cells use the oxygen, carbon dioxide is carried back to the heart through veins and then sent to the lungs to be expelled.
- Conclude the activity by discussing how each part of the circulatory system plays a vital role in transporting oxygen and carbon dioxide.
- Reinforce that this continuous cycle keeps our body energised and functioning properly.

Assessment

35 mins

Choose the following:

1. What happens to heart rate when you exercise?
   a) Decreases
   b) Increases
   c) Stays the same
   d) Stops
2. What allows water to rise through a plant?
   a) Photosynthesis
   b) Gravity
   c) Respiration
   d) Capillary action
3. What is the process of water loss from leaves?
   a) Respiration
   b) Evaporation
   c) Transpiration
   d) Condensation

Answer the following:

4. Explain the difference between xylem and phloem and how they work together to support plant life.

   _____
   _____
   _____

5. Explain the process of transpiration and its significance for plants.

   _____
   _____
   _____

6. Describe the different components of blood and their functions.

   _____
   _____
   _____
   _____
   _____
   _____

Answer Key

1. b) Increases
2. d) Capillary action
3. c) Transpiration
4. Xylem transports water and minerals from roots to leaves, while phloem transports food from leaves to the rest of the plant. Xylem provides structural support and moves water upward, whereas phloem distributes nutrients in all directions. Both tissues work together to ensure plants receive water, minerals, and food for growth and survival.
5. Transpiration is the process by which water evaporates from the leaves through stomata. This creates a pull that helps in water movement from roots to leaves. It plays a crucial role in nutrient transport, maintaining temperature, and keeping the plant structure firm.
6. Blood consists of four main components:
   - **Red Blood Cells (RBCs)**: Carry oxygen using haemoglobin.
   - **White Blood Cells (WBCs)**: Help fight infections and diseases.
   - **Platelets**: Help in blood clotting to prevent excessive bleeding.
   - **Plasma**: The liquid part that carries nutrients, hormones, and waste products.

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Name of the School:	**UDISE:**
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Class: 7		Subject: Science		
Roll No.	Name of the Student	Chapter: Transportation in Animals and Plants		
		Level 1	Level 2	Level 3

Chapter 10 : Electric Current and its Effects

Activity 1 Build a Simple Circuit and Switch

35 mins

Materials Required

1 cell (battery), 1 small bulb, 2 copper/iron wires, tape, matchbox sticks, 2 blade refills or safety pins, cardboard

Instructions

- Divide the class into small groups of 3–4 students.
- Provide each group with a battery, bulb, two pieces of wire, safety pins, a metal paperclip or strip of aluminium foil, tape, and a piece of cardboard.
- Ask students to fix the safety pins onto the cardboard using tape, leaving a small gap between them.
- This gap will act as the switch.
- Guide students to connect the wires to make a closed circuit as follows:
  - Connect one wire from the positive terminal of the battery to the bulb.
  - Connect a second wire from the other side of the bulb to one safety pin.
  - Connect the negative terminal of the battery to the second safety pin.
- Instruct students to use a metal paperclip or aluminium foil strip to bridge the gap between the two safety pins.
  - When the metal touches both pins, observe if the bulb lights up.
- Ask students to remove the metal bridge and observe again.
  - The bulb should turn off, showing that the circuit is now open.
- Allow each group to try the activity themselves.
- Instruct students to draw the circuit diagram in their notebooks.
- Discuss how the metal piece acts like a switch.
- Ask the students:
  - “What happens when we connect the pins using a metal object?”
  - “Where do we use switches in real life?” (e.g. fan, TV, lights)
- Conclude the activity by reinforcing that a switch controls the flow of electricity in a circuit. When the switch is closed (metal connects both pins), current flows and the bulb lights up. When the switch is open, the circuit breaks and the bulb turns off—just like in real electrical appliances.

Activity 2 Turning Iron into Magnet

35 mins

Materials Required

Large iron nail, 1-meter insulated copper wire (or any coated wire), battery, paper clips or iron pins, tape

Instructions

- Show students a plain iron nail and ask: "Can this attract paper clips?"
  - Demonstrate that it does not attract them when unconnected to any source.
- Take a piece of insulated copper wire and wind it tightly around the iron nail, leaving both ends of the wire free. About 20–30 turns are enough.
- Connect both free ends of the wire to the positive and negative terminals of a battery using tape or alligator clips.
- Ask students to bring the nail near paper clips or iron pins and ask the students to observe.
  - The nail now attracts them like a magnet!
- Remove the battery connection.
- Explain that the magnetic effect disappears the moment the battery connection is removed. This shows it is a temporary magnet, called an electromagnet.
- Allow each group to make their own electromagnet and test it by picking up small metal objects such as paper clips or old nails.
- Instruct students to draw and label the structure in their notebooks:

  Battery → Wire → Nail → Iron Pins
- Ask the students:
  - *"Why do you think we use electromagnets in cranes at junkyards or inside electric bells?"*
  - *"What advantage does a temporary magnet have over a permanent one?"*
- Conclude the activity by reinforcing that an electromagnet works only when electric current flows through the wire. It is useful in devices where magnetism is needed temporarily and can be controlled by switching the current on or off.

Activity 3 Guess the Glowing Bulb

35 mins

Materials Required

Small torch bulbs, batteries, different wire lengths, switch or paperclip, drawing sheets, coloured pens

Instructions

- Set up 3–4 different circuit stations in the classroom:
  - One with a complete and proper connection (bulb glows).
  - One with a loose wire.
  - One with a disconnected wire.
  - One with a broken switch.
- Divide students into small teams and assign each group to rotate between stations.
- Instruct students to observe each setup carefully and identify whether the bulb glows or not.
- Ask each team to detect the fault in the non-working circuits and write down the problem observed.
- After all groups have visited each station, lead a discussion on their observations:
  - *"The bulb didn't glow because the wire was loose."*
  - *"This one worked because the circuit was complete."*
- Guide students to draw the correct circuit diagram and mark the fault in red on the incorrect ones in their notebooks.
- Encourage a friendly competition by rewarding the team that correctly identifies all faults the fastest with stars or a badge.
- Conclude the activity by reinforcing that a complete and closed circuit is necessary for current to flow and the bulb to light. Even a small loose connection or break in the circuit can stop electricity from flowing.

Assessment

35 mins

Choose the following:

1. Which of these is required to make an electromagnet?
   a) Plastic rod
   b) Iron nail
   c) Rubber band
   d) Glass rod
2. When the circuit is open, what happens to the bulb?
   e) Glows brightly
   f) Flickers
   g) Does not glow
   h) Explodes
3. What is the main function of a switch in an electric circuit?
   e) Store energy
   f) Increase power
   g) Reduce resistance
   h) Control flow of current

Answer the following:

4. What are the main effects of electric current?

   _____
   _____
   _____

5. Why is it important to understand how a circuit works?

   _____
   _____
   _____

6. Explain how an electric bell works using an electromagnet.

   _____
   _____
   _____
   _____
   _____
   _____

Answer Key

1. b) Iron nail
2. c) Does not glow
3. d) Control flow of current
4. Electric current shows three main effects—heating, magnetic, and chemical. The heating effect is used in devices like irons and heaters. The magnetic effect helps in making electromagnets used in bells and motors. The chemical effect causes changes in liquids, like in electroplating. These effects are useful in many daily appliances and technologies.
5. Understanding electric circuits helps us learn how current flows and powers devices around us. It teaches us to use electrical appliances safely and fix simple problems like a blown fuse. This knowledge also builds a strong base for future learning in electronics and technology.
6. Understanding electric circuits helps us know how current flows and powers the devices we use every day. It also teaches us important safety measures while handling electrical appliances. With this knowledge, we can fix simple problems like loose wires or blown fuses at home. Learning about circuits lays the base for future understanding of electronics and technology. It encourages curiosity and problem-solving skills, making students more confident in handling electrical tools and concepts.

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Class: 7		Subject: Science		
Roll No.	Name of the Student	Chapter: Electric Current And its Effects		
		Level 1	Level 2	Level 3

Chapter 13 : Wastewater Story

Activity 1 Clean It Like a Pro!

35 mins

Materials Required

Plastic bottle (cut in half), sand, gravel, cotton, charcoal (optional), dirty water (mud + leaves), mug

Instructions

- Divide students into small groups of 3–4.
- Give each group a plastic bottle cut into two, where the top is inverted like a funnel into the bottom.
- Ask them to layer cotton, charcoal, sand, and gravel inside the funnel from bottom to top.
- Pour muddy water into the filter and ask the students to observe how the water looks after passing through.
- Relate this to natural water filtering in the hills of Meghalaya, where water flows through soil and roots before reaching springs.
- Ask students:
  - o "What materials helped clean the water the most?"
  - o "Can we drink this filtered water directly?"
- Conclude that physical filtration removes solid impurities, but it still may contain germs. For safe drinking, water must be boiled or treated.

Activity 2 Where Does It Go?

35 mins

Materials Required

A4 sheets, sketch pens/pencils, ruler

Instructions

- Ask students to draw a diagram showing the journey of wastewater from their home to a sewage treatment plant (or natural water bodies).
- Include: home → drains → open/underground sewer → treatment plant → river/wetland.
- Encourage them to mark untreated waste paths too.

- Discuss real-life issues in areas of Meghalaya where untreated sewage often flows into nearby rivers or farms.
- Ask students:
  - o "What happens if untreated water flows into streams?"
  - o "Why should we treat water before releasing it?"
- Conclude that proper drainage and sewage systems are essential to prevent waterborne diseases and keep our water sources clean.

Activity 3 Say No to Dirty Drains!

35 mins

Materials Required

Chart papers, sketch pens, crayons

Instructions

- Ask students to create awareness posters with slogans like "Keep the Drain Clean", "Stop Wastewater Pollution", etc.
- Use real examples from villages and towns—like polluted rivers near your town or local jhoras used for bathing or washing.
- Encourage them to show harmful effects of throwing plastic, oil, and garbage into drains.
- Ask students:
  - o "Have you seen any drain near your home that gets blocked often?"
  - o "What can we do as responsible citizens to stop it?"
- Conclude that community awareness is key. Small actions like not dumping waste into drains can protect our environment and health.

Assessment

35 mins

Choose the following:

1. Which of the following is the first step in wastewater treatment?
   a) Chlorination
   b) Sedimentation
   c) Aeration
   d) Filtration
2. The network of pipes that carries wastewater from homes is called:
   a) Water supply system
   b) Filtration network
   c) Drainage system
   d) Rainwater harvesting
3. Which useful product can be made from the sludge removed during wastewater treatment?
   a) Plastic
   b) Manure
   c) Charcoal
   d) Paint

Answer the following:

4. What is sewage?

   _____
   _____
   _____

5. How can we reduce wastewater generation at home?

   _____
   _____
   _____

6. Explain how a sewage treatment plant (STP) works to clean wastewater.

   _____
   _____
   _____
   _____
   _____
   _____

Answer Key

1. b) Sedimentation
2. c) Drainage system
3. b) Manure
4. Sewage is the wastewater released from homes, industries, hospitals, and offices. It contains waste materials like food particles, human waste, soaps, and detergents, and needs to be treated before disposal.
5. We can reduce wastewater by using water wisely—turning off taps when not in use, fixing leaking pipes, using buckets instead of showers, and reusing water for gardening.
6. A sewage treatment plant removes physical, chemical, and biological impurities from wastewater. First, large solids are removed through screening. Then, the water is allowed to settle (sedimentation), and sludge is separated. The liquid is aerated to help the growth of bacteria that break down organic matter. Finally, the treated water is disinfected with chlorine or UV light and released into rivers or used for irrigation. This process helps protect the environment and health.

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: 7		Subject: Science		
Roll No.	Name of the Student	Chapter: Wastewater Story		
		Level 1	Level 2	Level 3

Chapter 5 : Physical and Chemical Changes

Activity 1 Sweet but Reversible

35 mins

Materials Required

Sugar, water, transparent glasses, spoon

Instructions

- Instruct each student to mix sugar in water until it dissolves completely.
- Now keep the solution in the sun or warm it gently (teacher-led).
- After a while, water evaporates, and sugar crystals may be seen again.
- Relate this to how people in Meghalaya make jaggery (gur) from sugarcane juice by heating.
- Ask students:
  - "Can you taste the water? Does it taste sweet?"
  - "What happens if you leave it in the sun?"
- Conclude that dissolving is a physical change and reversible—no new substance is formed.

Activity 2 Bubble Trouble!

35 mins

Materials Required

Vinegar, baking soda, transparent glass, spoon

Instructions

- Provide each group (3-4 students) with a glass, a spoon of baking soda, and some vinegar.
- Ask them to slowly add vinegar to baking soda and observe.
- Bubbles form and a gas is released (CO_2).
- Relate to fermentation in traditional Khasi and Jaintia fermented bamboo shoot or rice dishes, where gas is released.
- Ask students:
  - "What caused the bubbles?"
  - "Can we reverse the change and get back baking soda?"
- Conclude that this is a *chemical change*—a new substance and gas are formed, which cannot be reversed.

Activity 3 Now Solid, Now Liquid!

35 mins

Materials Required

Ice cubes, metal or plastic bowls

Instructions

- Distribute ice cubes to each group (3-4 students) in a bowl.
- Let students observe them melt.
- Later, collect the melted water and put it back into the freezer (if available) or observe evaporation under the sun.
  - If sun is not available – use heat to vaporise the water
- Relate this to Meghalaya's winter mornings and how frost melts when the sun rises.
- Ask students:
  - "What change did you see when the ice melted?"
  - "Can we get back the ice?"
- Conclude that melting and freezing are physical changes and are reversible—no new substance is formed.

Assessment

35 mins

Choose the following:

1. Which of the following is a chemical change?
   a) Melting of ice
   b) Tearing of paper
   c) Burning of wood
   d) Breaking of glass
2. When magnesium ribbon is burnt, it forms:
   a) Magnesium oxide
   b) Iron oxide
   c) Zinc chloride
   d) Sodium sulphate
3. Which of these is a characteristic of a physical change?
   a) A new substance is formed
   b) Change cannot be reversed
   c) No new substance is formed
   d) Heat is always evolved

Answer the following:

4. What is a physical change? Give one example.

   _____
   _____
   _____

5. How can we prevent rusting of iron?

   _____
   _____
   _____

6. Differentiate between physical and chemical changes with examples.

   _____
   _____
   _____
   _____
   _____
   _____

Answer Key

1. c) Burning of wood
2. a) Magnesium oxide
3. c) No new substance is formed
4. A physical change is a change in shape, size, or state of a substance without forming a new substance. For example, melting of ice into water is a physical change.
5. Rusting can be prevented by painting, oiling, greasing, or galvanizing the iron surface. These methods protect iron from moisture and air which cause rust.
6. Physical changes do not form new substances and are usually reversible, like melting of wax. Chemical changes form new substances and are mostly irreversible, such as rusting of iron. In a physical change, only the physical properties like shape or state change, while in a chemical change, both physical and chemical properties change. For example, burning of paper is a chemical change, while folding paper is a physical change.

Learning Level Tracker

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Name of the Teacher:	**Assessment Date:**

Class: 7		Subject: Science		
Roll No.	Name of the Student	Chapter: Physical and Chemical Changes		
		Level 1	Level 2	Level 3

Chapter 6 : Respiration in Organisms

Activity 1 Breathe & Count

35 mins

Materials Required

Stopwatch, notebook, pen

Instructions

- Divide students into pairs.
- Ask one student to sit calmly and count their breaths for 1 minute while the other keeps time.
- Now, ask the student to do spot-jogging or 10 jumping jacks.
- Immediately after exercise, count the number of breaths again for 1 minute.
- Note the difference in breathing rate.
- Relate to physical activities done during farming, climbing hills, or traditional dances like Wangala in Meghalaya.
- Ask students:
  - "Did your breathing increase after exercise?"
  - "Why do you think this happened?"
- Conclude that during exercise, our body needs more energy, so respiration increases, and we breathe faster to supply more oxygen.

Activity 2 Breathing Without Lungs

35 mins

Materials Required

Transparent container with moist soil, live earthworm, magnifying glass

Instructions

- Place an earthworm in a moist soil container.
- Let students observe the skin closely (without harming the worm).
- Explain that earthworms breathe through their moist skin.
- Relate to farming in Meghalaya and how earthworms help by burrowing and aerating the soil.
- Ask students:
  - "Why is moist soil important for earthworms?"
  - "Can they survive in dry soil?"
- Conclude that some animals like earthworms breathe through their skin, and moisture is necessary for gas exchange.

Activity 3 Watch the Gills

35 mins

Materials Required

Transparent bowl/aquarium with a fish, observation sheet

Instructions

- Bring a live fish in a water-filled container to class.
- Ask students to observe the gill movement for 1 minute.
- Count how many times the gills open and close.
- Explain that fish take in dissolved oxygen from water using gills.
- Relate to the fishing communities in the rivers of Meghalaya, especially around Umiam Lake or Dawki River.
- Ask students:
  - "Do fish have lungs like humans?"
  - "How do they breathe underwater?"
- Conclude that aquatic animals use gills to absorb oxygen dissolved in water. Different animals have different organs for respiration.

Assessment

35 mins

Choose the following:

1. The process of breakdown of food to release energy is called:
   a) Digestion
   b) Breathing
   c) Respiration
   d) Excretion
2. The part of our body that helps in breathing is:
   a) Liver
   b) Diaphragm
   c) Stomach
   d) Pancreas
3. Earthworms breathe through their:
   a) Lungs
   b) Skin
   c) Gills
   d) Trachea

Answer the following:

4. What is breathing?

   _____
   _____
   _____

5. What is the difference between aerobic and anaerobic respiration?

   _____
   _____
   _____

6. Explain how breathing and respiration are related but different processes.

   _____
   _____
   _____
   _____
   _____
   _____

Answer Key

1. c) Respiration
2. b) Diaphragm
3. b) Skin
4. Breathing is the process of taking in oxygen-rich air (inhalation) and giving out carbon dioxide-rich air (exhalation). It is the first step in respiration and occurs through the nose, lungs, and diaphragm.
5. Aerobic respiration occurs in the presence of oxygen and produces carbon dioxide and water, while anaerobic respiration occurs without oxygen and produces alcohol or lactic acid and carbon dioxide.
6. Breathing is a physical process of inhaling oxygen and exhaling carbon dioxide. It helps in taking in the oxygen required for respiration. Respiration is a chemical process in which the oxygen taken in is used to break down food and release energy. While breathing is just the exchange of gases, respiration releases the energy that cells need to perform various functions. Hence, breathing supports respiration, but they are not the same.

Learning Level Tracker

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

Class: 7		Subject: Science		
Roll No.	Name of the Student	Chapter: Respiration in Organisms		
		Level 1	Level 2	Level 3

Chapter 8 : Reproduction in Plants

Activity 1 Explore a Flower from Inside

35 mins

Materials Required

Hibiscus/any local flower (e.g., Khasi Papaya), magnifying glass, chart sheet, pencil

Instructions

- Divide the class into small groups of 3–4 students.
- Give each group a fresh flower and a magnifying glass.
- Instruct them to carefully remove and identify:
  - Petals, sepals, stamen (anther and filament), and pistil (stigma, style, ovary).
- Let students paste the parts on chart paper and label them.
- Use locally found flowers like marigold or wild orchids common in Meghalaya.
- Ask students:
  - "Which part of the flower helps in reproduction?"
  - "What role does the pistil play?"
- Conclude that the flower contains reproductive parts and plays a key role in the formation of seeds and fruits.

Activity 2 Seeds and Their Story

35 mins

Materials Required

A variety of seeds (maize, papaya, etc.), paper plates, glue

Instructions

- Provide each group (3-4 students) with 5–6 different seeds.
- Ask them to observe and classify the seeds as:
  - With covering/without covering
  - Small/large
  - Lightweight/heavy

- Paste them on chart paper and label.
- Include seeds of local fruits like Sohphie, Sohra banana, and bay leaf plant seeds.
- Ask students:
  - o "Which seed is likely to be dispersed by wind or animals?"
  - o "Why do some fruits have many seeds and others just one?"
- Conclude that seeds vary in size, shape, and features based on how they are dispersed and how the plant reproduces.

Activity 3 Pollen on the Move!

35 mins

Materials Required

Coloured powder/chalk dust, flower drawings on paper, paintbrushes or earbuds

Instructions

- Draw two flowers on a sheet—label one "Stamen" and one "Pistil."
- Use a brush or earbud to transfer coloured powder from the stamen to the pistil.
- Tell how pollination leads to fertilisation.
- Relate to the pollination of orange trees, betel leaf creepers, and jackfruit in Meghalaya by bees and wind.
- Ask students:
  - o "What are some pollinators we see around our homes?"
  - o "Can plants reproduce without pollination?"
- Conclude that pollination is the transfer of pollen from stamen to pistil. It is vital for reproduction and formation of fruits.

Assessment

35 mins

Choose the following:

1. Which of the following is NOT a method of asexual reproduction in plants?
   a) Budding
   b) Fragmentation
   c) Pollination
   d) Spore formation
2. Which part of a flower develops into a fruit?
   a) Petal
   b) Ovary
   c) Stigma
   d) Anther
3. Which of the following is an example of vegetative propagation?
   a) Growing a new plant from a seed
   b) Cutting a stem and planting it in soil
   c) Formation of spores
   d) Cross-pollination in flowers

Answer the following:

4. What is vegetative propagation? Give one example.

   _____
   _____
   _____

5. What is pollination, and what are its types?

   _____
   _____
   _____

6. Describe the different methods of asexual reproduction in plants with examples.

   _____
   _____
   _____
   _____
   _____
   _____

Answer Key

1. c) Pollination
2. b) Ovary
3. b) Cutting a stem and planting it in soil
4. Vegetative propagation is a form of asexual reproduction in which a new plant grows from a part of the parent plant, such as roots, stems, or leaves. For example, a rose plant can grow from a stem cutting.
5. Pollination is the process of transferring pollen grains from the anther to the stigma of a flower. There are two types: **Self-pollination** (pollen transfers within the same flower or same plant) and **Cross-pollination** (pollen transfers from one flower to another of the same species, usually with the help of wind, water, or insects).
6. Plants reproduce asexually through various methods:
   - **Vegetative Propagation:** New plants grow from roots, stems, or leaves (e.g., potato, rose).
   - **Budding:** Small buds grow and detach to form new plants (e.g., yeast).
   - **Fragmentation:** The plant body breaks into pieces, each growing into a new plant (e.g., Spirogyra).
   - **Spore Formation:** Plants produce spores that germinate into new plants (e.g., ferns, fungi).

   These methods do not involve seeds and allow plants to reproduce quickly.

Learning Level Tracker

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

Class: 7		Subject: Science		
Roll No.	Name of the Student	Chapter: Reproduction in Plants		
		Level 1	Level 2	Level 3

Chapter 9 : Motion and Time

Activity 1 Is It Moving or Still?

35 mins

Materials Required

NIL

Instructions

- Conduct the activity in such a way that students perform it in pairs.
- Start the activity by discussing the following question to activate prior knowledge of students: How can you tell if something is moving or at rest?
- Now ask them to observe their surroundings – inside or outside the classroom to identify:
  - 5 objects they think are in motion
  - 5 objects they think are at rest
- Ask students to think carefully while observing and question themselves: "What clues tell me whether an object is moving or at rest?
- Draw the following table on the board and ask students to make the same in their notebooks.

Object in Motion	Why do you think it's in motion?	Object at Rest	Why do you think it's at rest?
Example: Ceiling fan	The blades are spinning	Desk	It stays in the same place

(Note for the teacher: For your reference, one example is in the table.)

- Guide the class in completing the table. Ask students to compare their observations with their peers and discuss their justifications.
- Discuss the following question with students: Did changing your viewing angle alter your observations?
- Conclude the activity by discussing the following points:
  - Objects are in motion if their position changes relative to a fixed point.
  - Objects are at rest if they remain stationary
  - A consistent reference point is essential for accurately observing motion and rest

Activity 2 Quick Walking Speed Comparison

35 mins

Materials Required

Measuring Tape, a watch with a second hand, and chalk

Instructions

- Divide students into small groups of 3-4.
- In an open space, quickly mark a clear straight line and a finish line 5 metres apart using chalk.
  (Note for the teacher: This step you can do a day before the class.)
- Ask two students of each group to walk from the start to the finish line while the other two members of the group note their time using the watch.
- Make sure each student in the group takes a turn walking and being the timer.
- Ask them to record the time taken by each of them in the notebook.
- Now ask each group of students to calculate the speed of each of their group members using the following formula:

$$Speed = \frac{Distance}{Time}$$

- Ask them to fill in the given table based on their observation.

Name of the member	Distance covered- 5 metres	Time taken (s)	Speed

- Guide students to compare the times recorded within their groups.
- Allow them to discuss who took the least time and who took the most time.
- Ask students to share their observations regarding the relationship between speed and time
  (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 Making a Simple Pendulum

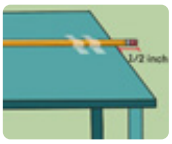
35 mins

Materials Required

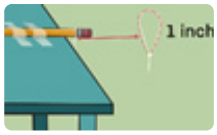
150 cm long thread, paper, small stone(bob), tape, stopwatch or wrist watch with second hand and pencil.

Instructions

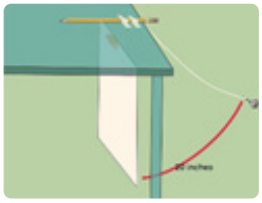
- Divide students into small groups of 3–4.
- Ask each group to tie a small stone (the pendulum bob) securely to one end of a string.



- Tape a pencil horizontally to the top edge of a table using masking tape, so that about half an inch of the pencil sticks out over the edge. This will act as the support for the pendulum.
- Instruct students to tie the other end of the string to the pencil, forming a loop. The length of the string from the pencil to the centre of the stone should be about 100 cm.



- Tape a piece of paper vertically to the side or behind the pendulum, so students can mark the exact position from where the stone is released.
- Ask students to gently pull the stone to one side, making sure the thread remains taut, and mark the release point on the paper.
- Instruct them to release the stone gently without pushing it, and let it swing freely.



(Note for the teacher: One oscillation is a complete movement from the starting point to the opposite side and back again.)

- Using a stopwatch or a mobile timer, ask students to measure the time it takes for the pendulum to complete 10 oscillations.

(Note for the teacher: Inform students that one oscillation is a complete back-and-forth movement. For example, in a pendulum, one oscillation is the movement from its starting point to the other extreme, and back to the starting point.)

- Now ask students using the watch, measure the time it takes for the pendulum to complete 10 oscillations.
- Ask students to record their observations in the following table.

S.No.	Time taken for 10 oscillations (seconds)	Time period (seconds)
1		
2		
3		

- Ask students to repeat this activity 3-4 times.
- Instruct them to calculate the time period for each reading of the pendulum by dividing the time taken by the number of oscillations.
- Ask each group to present their observation to the whole class.
- Conclude the activity by discussing that the time period of the pendulum is almost the same every time.

(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. If a simple pendulum completed 40 Oscillations in 80 seconds. What is the time period of the simple pendulum?
   a) 3200 s
   b) 160 s
   c) 2 s
   d) 0.5 s
2. Which of the following relation is correct?
   a) $Speed = Distance \times Time$
   b) $Speed = \frac{Distance}{Time}$
   c) $Speed = \frac{Time}{Distance}$
   d) $Speed = \frac{1}{(Distance \times Time)}$
3. In which of the following unit speedometer records the reading?
   a) m/h
   b) km/s
   c) m/s
   d) km/h
4. What is the basic unit of speed?
   a) m/s
   b) m/min
   c) km/min
   d) km/h
5. Riya takes 20 minutes from her house to reach her school on her bicycle. If the bicycle has a speed of 2m/s, calculate the distance between her house and the school.
6. Show the shape of the distance- time graph for motion in the following cases:
   a) A bus moving with a constant speed.
   a) A bus parked on a side road.
7. The age of a girl of class VII is 11 years and 4 months (Consider 30 days in a month). Express this age in seconds.
8. Anita can run a distance of 200 m in 40 seconds. Find the speed of Anita in m/s.
9. Identify the type of motion in each example:
   a) March past of soldier in a parade
   b) Motion of a child in merry- go- round
   c) Motion of a swing
   d) Motion of a child on a see-saw

10. The table below shows the distance covered by a snail at regular intervals of time.

Time (minutes)	Distance (centimetres)
0	0
2	1
4	2
6	3
8	4
10	5

a) Draw a distance-time graph using the data provided in the table. Put time on the x-axis and distance on the y-axis.

b) Describe the motion of the snail based on the graph you drew.

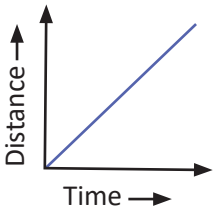
c) Using the graph, estimate the distance covered by the snail in 7 minutes.

Answer Key

1. The correct option is c) 2 s
2. The correct option is (b)
3. The correct option is (d)
4. The correct option is (a)
5. Speed = 2m/s, time taken = 20 minutes = 20 × 60 seconds = 1200seconds

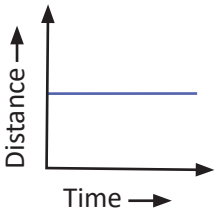
   Now $Distance = Speed \times Time$

   = 2 × 1200 = 2400m = 2.4 km
6. a) Uniform Speed



Straight Line

b) Stationary Object



Straight Line
Porollel to x-axis

7. 1 Year = 365 × 24 × 60 × 60 seconds

   11 year = 11 × 365 × 24 × 60 × 60 seconds

   = 346896000 seconds

   1 month = 30 days

   4 months = 4 × 30

   = 4 × 30 × 24 × 60 seconds

   = 1036800

   11 year and 4 months = 346896000 + 10368000

   = 357264000 seconds.
8. $Speed = \frac{Distance}{Time}$

   $= Speed = \frac{200m}{(40\ sec)}$

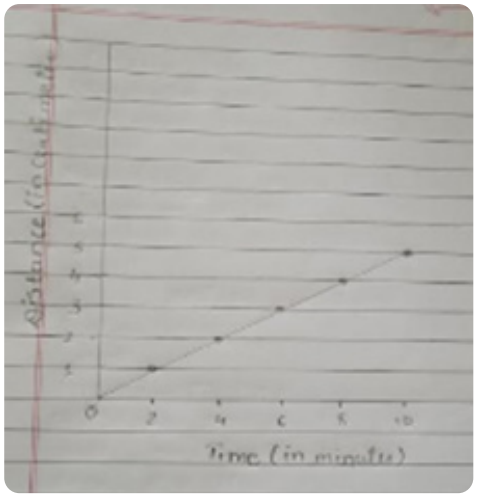
   The speed of Anita is 5m/sec.
9. a.) Motion in straight line (Rectilinear motion)

   b) Circular motion

   c) Periodic motion

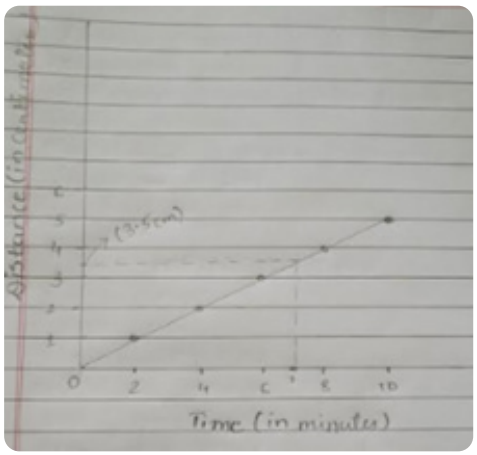
   d) Periodic motion

10 a)



b) The graph is a straight line. In a distance-time graph, a straight line indicates that the object is covering equal distances in equal intervals of time, which is the definition of uniform motion.

c) The distance covered in 7 minutes is 3.5 cm.



Learning Level Tracker

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

Class: 7		Subject: Science		
Roll No.	Name of the Student	Chapter: Motion and Time		
		Level 1	Level 2	Level 3

Chapter 11 : Light

Activity 1 Exploring Reflections: Measuring Distance and Observing Mirror Image

35 mins

Materials Required

Ruled notebook, plan mirror (small piece or compact mirror), eraser, pencil, and small paper labelled with “L” and “R”.

Instructions

- Conduct the activity in such a way that students perform it in pairs.
- Start the activity by asking students to open a ruled notebook flat on the table.
- Ask them to place the mirror vertically along the centre crease of the notebook.
- Now ask them to place the eraser on the page, 5 ruled lines away from the mirror.
- Ask them to look at the eraser’s image in the mirror.

- Tell them to use the ruled lines on the notebook to measure the distance from the object to the mirror and from the mirror to the image.
- Now instruct them to move the object to a different distance (e.g., 3 lines, 7 lines) and repeat the observation and measurement.
- After that, ask students to write letters “L” and “R” on a small paper and place it in front of the mirror.
- Ask students to observe the mirror image of the letters.
- Now randomly call a pair of students and encourage them to share their observation with the whole class.
- Conclude the activity by discussing the following points with them.
    - The image appears at the same distance behind the mirror as the object is in front of it.
    - The letters “L” and "R” appear flipped in the mirror image. This phenomenon is called lateral inversion and it occurs because the mirror reverses the left and right sides of the object.

(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 Spoon Mirror Magic – Exploring Concave and Convex Reflections

35 mins

Materials Required

A clean metal spoon and a pencil

Instructions

- Conduct the activity in such a way that students perform it in pairs.
- Inform students that they are going to explore the concave side i.e. inner surface of the spoon and the convex side i.e. outer surface of the spoon.
- Ask students to hold the spoon vertically with the inner curved surface facing them.
- Ask them to slowly bring their face or an object (like a pencil) closer to the spoon. Ask them to observe the image of object at different distances – far, medium and very close.
- Ask them to note down the Image orientation (upright/inverted) and size (smaller and larger) in their notebook.
- Now, tell them to turn the spoon around to face the outer curved surface. Ask them to observe their face or the same object on this surface.
- Encourage them to note down the Image orientation (upright/inverted) and size (smaller and larger) in their notebook.
- Ask students to tabulate their findings in the following tabular form and discuss their findings in groups.

Spoon side	Image orientation	Image size

- Write the following questions on the blackboard and discuss them with students:
  - Which side of the spoon showed an inverted image? At what distance did this happen?
  - How did the image change as you moved closer to the concave surface?
- Conclude the activity by discussing the following points with students:
  - The concave side of the spoon behaves like a concave mirror. It reflects light inward, and the image changes based on distance:
    - Close: Virtual, erect, and enlarged image.
    - Far: Real, inverted, and smaller image.
  - The convex side acts like a convex mirror, which always forms a virtual, upright, and diminished image, regardless of distance.

(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 Newton's Disc – Discovering White Light from Colours

35 mins

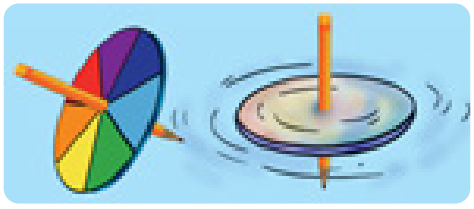
Materials Required

A piece of cardboard, a compass to draw a circle, a pencil, white paper, a scale, glue, scissors, 30 cm of thread, and colour pencils (VIBGYOR: Violet, Indigo, Blue, Green, Yellow, Orange, Red)

Instructions

- Conduct the activity in such a way that students should perform it in pairs.
- Ask students to draw two identical circles using a compass, one on cardboard and one on white paper.
- Instruct them to carefully cut out both circles with scissors.
- Ask them to divide the white paper circle into seven equal segments using a scale.
- Ask them to colour each segment in this order: Violet, Indigo, Green, Yellow, Orange, and Red.
- Ask them to paste the coloured paper onto the cardboard disc.
- Ask students to use a compass to poke two small holes near the centre of the disc, approximately 1 cm apart.

  (Note for the teacher: Ensure your presence and students' safety while they are working with scissors and a compass.)
- Instruct them to pass a 30 cm thread through the two holes, so the disc hangs like a button on a thread.
- Ask students to tie the ends of the thread to form a loop.
- Tell them to hold the thread at both ends and twist the disc several times.
- Ask them to pull and release the thread rhythmically to make the disc spin rapidly back and forth.
- Ask them to carefully observe the disc's colour as it spins.
- Encourage them to share their observations with their peer.
- Conclude the activity by discussing the following points with students:



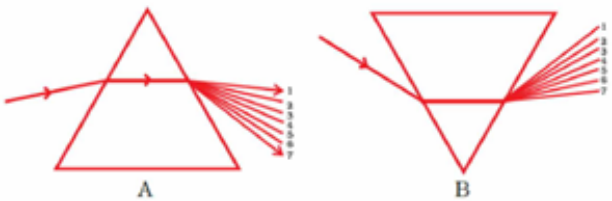
  - White light is a mixture of seven colours.
  - When the disc spins quickly, the coloured sections blend due to persistence of vision – the human eye cannot differentiate each rapidly flashing colour.
  - This creates the illusion of a white disc, confirming that all these colours combine to form white light.

(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. Which of the following mirrors is used by the dentist to see the magnified image of teeth?
   a) Plane
   b) Convex
   c) Concave
   d) Both convex and concave
2. Which is used for the rear view in cars and other vehicles?
   a) Concave mirror
   b) Convex mirror
   c) Concave lens
   d) Convex lens
3. Which type of image is formed by a concave lens?
   a) Real and larger
   b) Virtual and larger
   c) Real and diminished
   d) Virtual and diminished
4. Which type of image is formed using a convex mirror?
   a) Real, erect, and diminished
   b) Virtual, erect, and enlarged
   c) Real, inverted, and enlarged
   d) Virtual, erect, and diminished
5. A rainbow can be seen in the sky
   a) When the sun is in front of you
   b) When the sun is behind you
   c) only at the time of sunrise
   d) When the sun is overhead
6. Have you noticed that the word “AMBULANCE” is written in reverse on the front of an ambulance vehicle? Why is it written that way?
7. A person is standing 7m away from a plane mirror. How far will his image go?
   a) From the mirror
   b) From the person himself
8. Imagine a person looking into a unique mirror where the upper part of his body appears to be erect and magnified, the middle part erect and smaller, and the lower part erect and the same size. How is this special mirror constructed to create such varied reflections?
9. Why can’t we see the flame of a candle through a bent pipe?
10. Suppose you wish to obtain the real image of a distant object. Explain two possible ways in which you can do it.
11. Observe the following images and state the correct sequence of colours in the spectrum formed by the prisms A and B. What is depicted in the image?



Answer Key

1. The correct option is (c)
2. The correct option is (b)
3. The correct option is (d)
4. The correct option is (d)
5. The correct option is (b)
6. It is written in reverse so that drivers can read it correctly in their rear-view mirrors. This happens because plane mirrors reverse images left to right. This helps them quickly recognize the ambulance and give way during emergencies.
7. a) 7m
   b) 14 m
8. A concave mirror is used for the upper part of the body as it forms a virtual, erect, and magnified image. A convex mirror forms the middle section. Convex mirrors always produce a virtual, erect, and diminished (smaller) image of an object. A plane mirror makes up the lower section. A plane mirror always forms a virtual, erect, and same-sized image as the object.
9. You cannot see the flame of a candle through a bent pipe because light travels in a straight line. When the pipe is bent, the straight path of light emitted from the candle flame is blocked by the bends in the pipe. Since light cannot curve around the bends, it doesn't reach your eye, and therefore, you cannot see the flame
10. Two possible ways to obtain the real image of a distant object:
    a) By using a convex lens and a screen- In a convex lens, when the object is far away from the lens, results in forming real and inverted image.
    b) By using a concave mirror and a screen- By using a concave mirror, a real image is formed if the distance between the mirror and the object is distant from the mirror.
11.

Image A	Colour	Image B
1	Red	7
2	Orange	6
3	Yellow	5
4	Green	4
5	Blue	3
6	Indigo	2
7	Violet	1

The images show a prism that splits a beam of sunlight into seven colours.

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: 7		Subject: Science		
Roll No.	Name of the Student	Chapter: Light		
		Level 1	Level 2	Level 3

Chapter 12 : Forests: Our Lifeline

Activity 1 Trees are a Source of Dyes

35 mins

Materials Required

Beetroot skins, onion skins, spinach, a small piece of white cloth, and a beaker.

Instructions

- Divide the students into small groups of 4–5. Assign one fruit or vegetable per group from the following options:
  - Beetroot (red/pink dye)
  - Turmeric (yellow dye)
  - Spinach (green dye)
  - Red cabbage (purple/blue dye)
  - Pomegranate peels (light yellow-brown dye)
- Give each group a small quantity of their assigned ingredient, chopped into small pieces.
- Instruct each group to add the chopped ingredient to a small beaker or steel bowl.
- Ask them to add water to the beaker—the amount of water should be roughly double the quantity of the chopped ingredient.
- Under close teacher supervision, ask each group to place their beaker on medium heat.

  Allow the mixture to simmer for 10–15 minutes to extract the natural colour.

  (Note: This step should ideally be handled by the teacher or done in a safe, controlled space.)
- Once done, ask the groups to turn off the heat and let the coloured water cool down to room temperature.
- Provide each group with a small white cotton cloth. Ask them to rinse the cloth in cold water and squeeze out the excess.
- Instruct the students to place the damp cloth into the cooled natural dye and let it soak for a few minutes or until they are satisfied with the colour.
- Ask them to remove the cloth, observe the colour, and set it aside to dry completely.
- Once dried, ask students to cut a small piece of the dyed cloth and paste it into their notebooks as a sample.
- Conclude the activity with a class discussion on:
  - *What did you observe about the colours produced by natural ingredients?*
  - *How do forests and plants help us in our daily life?*
  - *Why might people have used natural dyes in the past?*

(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 Pass the Energy- The Food Chain Game

35 mins

Materials Required

- Role cards for each student with the forest organisms labelled as:
  - Sun, Producers (e.g., grass, bamboo, shrubs)
  - Primary consumers (e.eg., deer, grasshopper)
  - Secondary consumers (e.g., wild cat, snake)
  - Tertiary consumers (e.g., eagle, leopard)
  - Decomposers (e.g., fungi, earthworms)
- Yarn or rope (depending on the number of groups)
- A tag or symbol for “energy” (e.g., a paper sun, or even a ball) for one student in each group.

Instructions

- Divide the class into three or four smaller groups.
- Now distribute one role card to each student. Each card should mention:
  - The name of the organism
  - What it eats
  - Who eats it (if applicable)

  (Note for the teacher: Ensure that the cards represent a diverse range of organisms, including producers (plants), herbivores, carnivores, omnivores, and decomposers, relevant to a specific ecosystem (e.g., a forest, a grassland, an ocean).
- Inform each group to form a circle, with the sun standing at the centre.
- Now briefly explain the roles of different organisms using real-world examples from a familiar ecosystem (e.g., "Bamboo is a producer, like grass. Civet cats eat plants and small animals. Hornbills might eat fruits and insects."). Emphasise the concept of "who eats whom."
- Ask each student to introduce themselves to their group as the plant or animal they represent on their card, stating what they eat and who eats them.
- Start the game by giving the ball of yarn to the student with the sun card.
- Instruct the "Sun" to pass the yarn to an organism that directly depends on the sun for energy (e.g., a plant/producer)
- Ask the student holding the yarn (e.g., the plant) to pass the yarn to an organism that eats them (e.g., an herbivore).
- Then ask the next student to pass the yarn to the organism that eats them, and so on. Continue until the yarn reaches the animal at the top of that food chain (a carnivore – an animal that eats other animals).
- Once one food chain is complete, instruct the students to return the yarn to the "Sun." Start a new chain, repeating the process until every student holds at least one piece of yarn.
- Now, tell them to hold their part of the yarn tightly, creating a visible chain of connections.
- Once the chain is complete, pick one organism (e.g., a producer or a decomposer) and instruct the student representing that organism to "let go" of their string.

- Now facilitate a discussion by asking students the following questions:
  - What happened to the rest of the chain when one organism was removed?
  - How does this affect the entire system within the chain?
  - What does this chain tell us about the importance of each organism?
  - Who holds the most pieces of yarn, and what does that tell us about their role in the food web?
- Encourage students to share their observations and thoughts on these questions.
- Conclude the activity by discussing the following points with students:
  - Each organism, from the smallest plant to the largest predator, plays a vital role in maintaining the balance and health of the ecosystem. No organism is insignificant.
  - The removal or decline of even one species can have cascading effects, impacting multiple other organisms and potentially destabilising the entire food chain.

(Note for the teacher: Arrange the materials and create a role card for each student in advance.)

Activity 3 The Forest's Shield: Preventing Erosion and Floods

35 mins

Materials Required

Two plastic bottles, glass, water, bare soil, dry leaves, small twigs, grass clippings, and a small container (to collect runoff).

Instructions

- Conduct the activity in such a way that students should perform it in pairs.
  (Note for the teacher: Each student in the pair should take one plastic bottle.)
- Ask them to carefully cut the upper part of it.

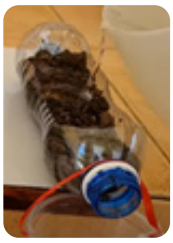

(Note for the teacher: This step might be best done by you or with very close supervision, or pre-cut bottles could be provided.)

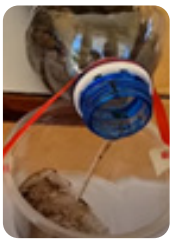
- Instruct each pair to fill both bottles with loose soil, ensuring it's spread evenly in each bottle.

- Ask them to cover the entire soil surface of one bottle with dry leaves, twigs, and grass. This represents the **"Forest Floor"** bottle, mimicking the protective layer found in a forest.

- Ask them to leave the soil in the second bottle completely bare. This represents the **"Bare Land"** bottle, representing an area without vegetation.

- Now, instruct them to position an empty collection container directly under the mouth of the "Bare Land" bottle to catch any water runoff.
- Ask them to hold a glass of water above the bottle and slowly pour an equal amount of water onto the soil in the **"Bare Land"** bottle. Observe what happens to the soil and the water.





- Now, ask them to repeat the same process, pouring an equal amount of water at the same height onto the **"Forest Floor"** bottle.

- Ask students to closely watch both bottles while pouring the water.
- Instruct them to closely observe the following things:
  - Soil displacement: How much soil is washing away with the water in each tray?
  - Water runoff: How quickly does the water flow off the surface, and how clear or muddy is it?
  - Absorption: Does one bottle seem to absorb more water than the other?

(Note for the teacher: You can also show another setup in which roots are holding the soil and how they are preventing soil erosion. You can make a comparison between the three setups and discuss the importance of the forest.)

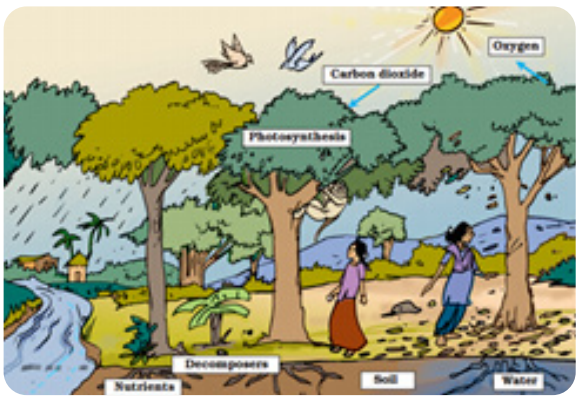
- Encourage them to share their observations with other pairs in the class.
- Conclude the activity by discussing the following points with students:
  - Forest as a Natural protector.
  - Preventing soil erosion.
  - Prevent floods.

(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. Which of the following has the strongest stem?
   a) A tree
   b) A bush
   c) A creeper
   d) A climber
2. Which of the following is not made from the wood obtained from the forest?
   a) Paper
   b) Furniture
   c) Thermocol
   d) Matchsticks
3. Which of the products is not obtained from a forest?
   a) Gum
   b) Honey
   c) Plastic
   d) Catechu
4. Which among the following forest animals is the smallest?
   a) Fox
   b) Boar
   c) Bison
   d) Porcupine
5. Riya wrote a food chain in the following way:
   Grass → insects → snake → bird → vulture
   The chain is not in the correct order. Help her write the food chain correctly.
6. What would happen if the forest disappeared?
7. "Forests are our lifeline." Explain.
8. Give any four factors that are responsible for the destruction of the forest.
9. Observe the given image and write any three activities going on in the forest based on this image.



10. Y and Z are two types of organisms that are found in the forests. Y eats up dead animals while Z breaks down the bodies of the dead animals into simpler substances.
    (a) Write one example of a Y-type organism.
    (b) What is the general name of organism Z?
    (c) Write one example of a Z-type organism.

Answer Key

1. The correct option is (a)
2. The correct option is (c)
3. The correct option is (c)
4. The correct option is (d)
5. Grass → Insect → Bird → Snake → Vulture
6. The following things happen if the forest disappears.
   a) The amount of carbon dioxide in the air will increase, increasing Earth's temperature.
   b) In the absence of trees, the soil will not hold water, which will cause floods.
   c) In the absence of trees and plants, the animals will not get food and shelter.
7. Forests are our lifeline for the following reasons
   a) It gives oxygen to keep us alive.
   b) It absorbs carbon dioxide, a gas that contributes to climatic changes if its concentration increases in the atmosphere.
   c) It provides us with wood, gum, medicinal plants, and species.
   d) It saves soil from soil erosion.
8. Factors responsible for the destruction of forests are:
   a) Construction of roads.
   b) Construction of buildings.
   c) Industrial development
   d) Increasing demand for wood.
9. The following are the three activities going on in the forest:
   a) Leaves of the plants give out oxygen.
   b) Plants consume carbon dioxide to prepare their food by the process of photosynthesis.
   c) Decomposers play an important role in providing nutrients to plants.
10. Two possible ways to obtain the real image of a distant object:
   a) Vulture
   b) Decomposers
   c) Fungi (mushroom)

Learning Level Tracker

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

Class: 7		Subject: Science		
Roll No.	Name of the Student	Chapter: Forests: Our Lifeline		
		Level 1	Level 2	Level 3

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