

OUR WORLD OF **SCIENCE**

PAKISTAN EDITION

Book

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Introduction

This Teachers' Guide has been developed to accompany Our World of Science textbook series. The Guide has particularly been designed with an aim to help you put your valuable class time and resources to the best use.

The detailed lessons plans in this Guide may be used as they are, or followed loosely depending upon your teaching strategies, resources, time allotted to Science at your institution and very importantly, the needs of your students. Remember, these are not the only ways to transmit knowledge; you can come up with your own plans to tailor the activities given in the lessons and divide your time accordingly.

STRUCTURE OF THE TEACHERS' GUIDE

This Guide has been divided broadly into two main sections: Lesson Plans and Worksheets.

Lesson Plans consist of the following key features:

- **Objectives:** Every chapter lists the learning objectives of the lesson which you may refer to before, during, and as you conclude the teaching of the chapter to ensure that you have covered everything.
- **Vocabulary Bank:** The vocabulary bank includes the relevant vocabulary which the students will require to be familiar with. You should encourage them to use it during class discussions. Make sure that you prepare the class softboard with the words displayed prominently. Drill these words daily. You can prepare flashcards or use other techniques like a thematic word wall on the softboard.
- **Lesson:** The detailed procedure of the main teaching of the lessons has been structured in a way to include activities and their variations, multiple teaching strategies, extra information, hands-on activities and crafts to clarify concepts and give ideas a concrete shape. Each lesson is divided into Warm up, Main Lesson and Recap sections. Be judicious in your choice of activities and you can mix and match different sections. The plans may also be used as they are. You may also improvise and contextualize ideas, incorporating them into your own teaching design.
- **Links:** Weblinks to relevant topics have been given to enhance the teaching process for you and to ensure complete understanding of chapters taught.



- **Evaluation:** Evaluation exercises have been included at the end of every lesson to help you assess and ensure how far key objectives for particular teaching session have been met.
- **Safety**

Specific safety measures have been included with activities in the Guide; however, exercise all necessary caution when conducting hands-on activities.

Some general ethical and safety precautions:

- In discussions involving a comparison of physical and cultural characteristics, be careful not to pass judgmental remarks or to let the students pass critical comments. Students come from different backgrounds and have varying intellectual and physical abilities. Similarly, cultural differences like dietary preferences may also vary. Exercise every caution not to offend their sensibilities. Be sure to emphasize that we are all different in our physical attributes, likes/dislikes, etc.
- Students may have various allergies from plants, animals, and edible items like pollen, dust, cats, and (pea)nuts. Try to find out any such instances from parents or the school nurse well in advance of any demonstration or field exercise.
- Make sure before tasting anything the students have clean hands.
- Ensure that students are under proper supervision when taking them for a visit to the park or to the playground for observation.
- The students must never look at the Sun directly, or sunlight reflected in a mirror, microscope, or through a hand lens etc. Warn them of permanent damage including blindness.
- Be careful when handling apparatus: electrical appliances, mercury thermometers, microscopes, glass beakers, test tubes etc.
- Seeds may be poisonous. Make sure that children do not put them in their mouth.
- Candles should be supported firmly in their proper holders.

Remember to go through the plans well in advance to make the necessary preparations, especially for topics like plants, the solar system and weather which require ample time to record results intermittently.



Answers to exercises in the textbook have been provided for each chapter.

Worksheets for every lesson are provided at the end of the Guide. Tear out and photocopy the worksheets to use as a reinforcement exercise, homework or for assessment.

TEACHING STRATEGIES

The philosophy behind our books is to break away from the traditional pedagogical practice of lecturing and focusing on a learner-centred approach. Always demonstrate, discuss and then engage the students in reading the text. Do not initiate any lesson by directly reading from the textbook. We particularly emphasize on collaborative learning in the classroom and encourage you to use various cooperative and interactive teaching strategies.

We have taken meticulous care to include a variety of such strategies in our lesson plans. They include:

Pair/Group Work: Students work in pairs to think about work assigned to them and then discuss amongst themselves before sharing with the class. Two approaches for this are:

Think-Pair-Share: Assign the students a particular task or give them a topic/question to think about. In pairs, the pupils will discuss the question or task, and then share their ideas with each other. Finally, the pupils will discuss their answers with the class.

Jigsaw Technique: This cooperative learning approach where pupils teach their group members what they have learnt. It works like this:

- a. Form 'home' groups where each member is assigned a different portion of a chapter to read. Also assign each student with a number, for example from 1–4. Each number denotes the portion assigned to them.
- b. All students assigned a particular task in their home groups will then form a group with other pupils assigned the same task. For example, all number 1s from their respective home group will come together, as will all number 2s, 3s, and 4s. They will study and discuss the material and become 'experts' in it.
- c. Now all the pupils will return to their respective home groups. They will teach each other what they have learnt about the material assigned to them.
- d. Your job is to facilitate this process and evaluate what they have learnt by asking them to make a presentation before the class, or by taking a quiz.



Gallery Walk: An excellent way to start/conduct/revise the lesson. Divide the class into at least 3–4 groups. Each group will be assigned a topic, which they will discuss and write the salient points of on a paper/chart and paste it on the wall. Every chart will be pasted in the room far apart, preferably on all four corners of the room, like an art gallery. Each group will now be stationed in front of another group’s poster.

The students in the group will read and discuss the points on the poster and write their observations on sticky notes which they will stick onto the poster. When the teacher claps or rings a bell, each group will rotate and move to the next poster and do the same. All groups will rotate in this manner until each group has had a chance to look at every group’s poster. All the groups will then end when they have reached their own group’s poster.

Loop cards: This is a popular educational game to keep students actively engaged. Prepare cards with a question on one side and answer on the other. The answer should be to a different question and not the one on the card. The number of cards you prepare should match the number of students in the class.

Distribute the cards, giving one card to each pupil. Begin by one student reading aloud the question on his/her card. The rest of their students will flip their cards to see who has the answer. The child bearing the correct answer will call out the answer and then it will be his/her turn to read out the question on his/her card.

If the child with the correct answer written on his/her card does not know that it is the answer to the question, whoever answers correctly will be the next to read out the question on his/her card. The students can be divided into teams as well.

Loop cards can serve as an excellent revision/evaluation strategy. It keeps the students thoroughly attentive because the card they hold may come up in the loop. The idea is to have all the children participate by asking and answering questions in a way that you come back in a loop to the ‘Start’ person.

KWL: This is a comprehension strategy to evaluate what the students have learned using a chart. You can make a three column table on the board or a flip chart labelled K, W and L. Before reading, first find out what the children already know about a topic (K). List those points on the flip chart. Then ask what they want to know about the topic (W). List these as well. After the reading and discussion, ask what they have learned about the topic (L). Once you have completed the chart, analyse it to see what learning has taken place. KWL gives the students a purpose for learning the topic and keeps them engaged.



Here is what the KWL chart may look like:

K What I/we know	W What I/we want to know	L What I/we learned
Write the what the students already know in this column	Write what the students want to know in this column	After the completion of the lesson write whatever the students have learned in this column

Circle Time: This is an excellent strategy to initiate discussions or use as part of your main lesson. Arrange the class in a fish bowl set-up or if there is enough room, ask them to sit in a large circle. This allows face to face interaction and helps in exchange of ideas, revision, and removal of misconceptions. This may be used in conjunction with any of the strategies above, for example the gallery walk. Each group can read out the comments left by other groups on their posters, leading to an interactive discussion.

Audio Visual Aids: Links to relevant websites have been provided in the lesson plans for different topics. Concepts are understood best only when they are seen or done practically. The children must experience phenomena in order to fully understand concepts like forces, electricity, materials, living things, etc.

Although every care has been taken to ensure that the lesson plans in this Guide will help facilitate learning through inquiry and practical activities, they are not necessarily to be followed rigidly. If you have trouble arranging the required resources for a lesson, feel free to improvise. Make the most of what you have readily available.

Science started with observation, and this is one of the first skills to be inculcated in children to foster the spirit of scientific enquiry, followed by collecting information, inference, experimentation, recording and analysing results to form a conclusion. A good teacher always tries to provide a variety of learning experiences to the students. Make every effort to connect phenomena to the experiences of the everyday lives of your learners. Take them to the playground or a nearby park, the music room, computer room, or any other place to engage them in a hands-on learning experience, encouraging them to observe and ponder over their findings.



Lesson Plans



Unit 1
Chapter 1
Living and non-living things



Objectives	<p>By the end of the chapter, students should be able to:</p> <ul style="list-style-type: none"> • learn about various features of living and non living, and dead things • understand that animals, including humans and plants, are living • identify living things as those which feed, move and breathe • discuss the growth and movement of plants • grasp that living things grow. • understand that living things need air, food and water to stay alive
Vocabulary Bank	<p>grow, breathe, move, living, non-living, alive, dead</p>

LESSON 1: 40 mins

5 mins	<p>Warm up: Elicit previous knowledge and write the word living and non-living on the board. Ask them if they are a living thing. <i>How do you know? We breathe, we can move,</i> etc. Write the answers on the board.</p>
30 mins	<p>Main Lesson: Take the students out to a walk in the playground and observe what they see e.g. empty cans, stones, caterpillars, ants, earthworms, etc.</p> <p>If this is not possible, then flashcards of objects plants, animals and other non-living objects like stationary items, cars, furniture should be shown and the children be asked to identify different things.</p> <p><i>Explain that non-living things do not breathe, eat or drink. Can the table move? Can your pencil breathe? Can our hair grow? Can your hair breathe? Can our hair eat and drink? Cars can move but they do not grow or breathe.</i></p> <p>Explain that living things feed, move and breathe. They also grow, and need food and water to stay alive. <i>All humans are living things.</i></p>



	<p>Plants are also living because they also breathe, grow and feed. <i>A small plant will grow into a tree. What will a kitten grow into? Do they both grow?</i></p> <p>Explain that dead things were living once, but now they do not need food, water, or air.</p> <p>Make three columns on the board labelled: Living, Non-living and Dead. Prompt children to group the observed objects as living, non-living and dead.</p> <p>Exercise p. 11 in the book should be done in pairs and answers discussed.</p>
5 mins	<p>Recap: Summarize the main points discussed. <i>Objects may be living, non-living or dead.</i> <i>Humans, animals and plants are living things.</i> <i>When living things stop feeding, breathing and moving, they are called dead things. They no longer need food or water or air because they are not alive.</i></p>

LESSON 2: 40 mins

5 mins	<p>Warm up: Give the class one minute to write down the characteristics of living things. Discuss the answers and record them on the board. Review that animals, humans and plants are living things.</p>
30 mins	<p>Main Lesson: Discuss growth and movement of plants and making children understand that how plants are categorized as living things though they cannot move from place to place.</p> <p>Read the text of the lesson and discuss the pictures. <i>What are the similarities between humans and animals?</i> Explain that they both feed, move, and breathe. Give examples: <i>Can we move? Can a cat move? Can a table move?</i></p> <p>Read the chapter and do Exercises 1,2, and 3 on pages 12 and 13.</p>
5 mins	<p>Recap: Ask the students to make a list of things that are necessary for living things to stay alive. Ask them to name one animal, plant and person as an example of a living thing.</p> <p>Make them to look around the room and name any three non-living things.</p>



Evaluation and Activities:

1. At the end of the chapter the worksheet **Living and Non-Living Things** can given to the students.
2. The following activity can also be given:

Objects	Does it breathe?	Does it eat?	Does it move?	Is it a living thing?
Fly				
Clock				

The table may be modified to include more objects which the teacher can help the children to analyse.

Answers

Exercise 1

- a) Answers may vary (Sameer, Maria, sunflower, cat, dog etc...)
- b) No, dead things cannot become living things.
- c) No, a non-living thing cannot become a living thing.
- d) Answers may vary (Pencil, chair, table, pen, bag etc...)

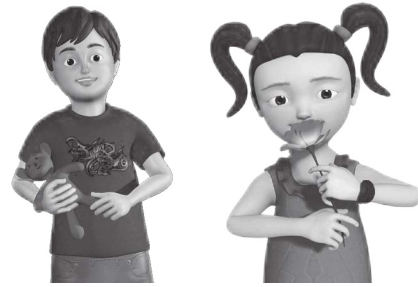
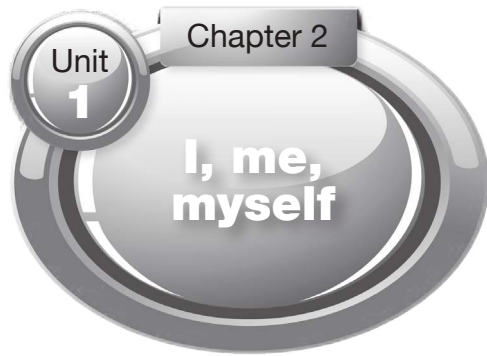
Exercise 2

- a) food , water
- b) air
- c) move
- d) food/water, air
- e) food, breathe

Exercise 3

- | | | |
|--------------------|-------------------|--------------------|
| Fish – dead | Bulb – non-living | Animal – living |
| Car – non-living | Bird – living | Chicken – dead |
| Butterfly – living | Leaf – dead | Watch – non-living |





Objectives	By the end of the chapter, students should be able to: <ul style="list-style-type: none"> • learn that humans have bodies with similar parts • understand that we have five senses which allow us to find out about the world • learn to identify different body parts and sense organs • match various sensory activities to the specific sense organ
Vocabulary Bank	hands, feet, nose, eyes, ears, mouth, tongue, skin, senses, sight, hearing, taste, touch, smell

LESSON 1: 40 mins

5 mins	<p>Warm up: Call 3 students in front of the class. Ask them to introduce themselves to everyone. Now ask the class to identify their similarities and differences. Write the answers given by the class on the board.</p> <ul style="list-style-type: none"> • Highlight similarities by asking questions like: <i>Do we all have eyes? Do we all have a nose? Do we all have ears? What about hands?</i> • <i>Are they all as tall as each other? Do you think they all have the same favourite colour/sport/subject?</i> <p>Explain that although humans may be different in their likes and dislikes, they have many similarities. With the help of this activity you can make students understand the differences in our voice and other physical features etc.</p>
30 mins	<p>Main Lesson: Prompt children by asking about parts of their face and body. <i>Where are your hands? Where is your nose? These are our ears. This is our skin. Do you all have teeth?</i></p> <p><i>Explain to the students that we all can see, smell, touch, hear and taste. We see with our eyes. We hear sounds with our ears. We taste with our?</i></p>



We touch with We smell with our Point to your eyes, ears, etc and encourage the students to do the same as you speak.

Explain that these factors are common between all human beings. We call these our 'senses'. Tell them that we all have 5 senses to help us know about things.

Read pages 14–17. The children should do Exercise 1 and 2 on senses and body parts from the book in class.

Sing this poem *Head, and Shoulders, Knees and Toes* with the class. The video may be shown as well which shows people of different ethnic backgrounds all pointing to the body parts all humans have in common:

<http://www.ouchh.com/NurseryRhymes/poems/head-shoulders-knees-and-toes>

The link below will offer you music to help you sing along with the music while pointing at the parts of the body. To make it more interesting, add your own names and body parts.

<http://www.dailymotion.com/video/xqbpqr-head-shoulders-knees-and-toes-music>

[Link this song with Chapter Three and this poem may be recited again while discussing differences between the appearance of human being.]

5 mins

Recap:

Ask children to find similarities between them and their partner. Ask them randomly for their answers.

LESSON 2: 40 mins

5 mins

Warm up:

Recap the previous lesson by asking relevant questions. *Where is your nose? Where are your feet? Feet help us to ...? We see with our...?*

Place a cut-out of the human body on the board. Ask the students to name the external body parts. Encourage everyone to participate. Prepare labels beforehand. Ask the children to name and locate parts of the body using drawings and labels.

OR

Prepare a chart of labeled body parts and paste it in the class. Drill the names of the parts by asking questions.



<p>30 mins</p>	<p>Main Lesson: Play ‘Simon Says’ with emphasis on naming parts and on identifying that humans all have the same parts. Say “Simon says touch your head”, “Simon says touch your ears”, “Simon says close your eyes” etc.</p> <p>Using multimedia or a computer, or simply by moving to and singing the song <i>Hokey Pokey</i>, form a large circle on the floor. Then simply follows the ‘instructions’ given in the song. When you sing, “You put your right foot in”, all of you will put your right foot in together and then out. When it says, “Do the Hockey Pokey”, turn around and then clap once, and then move onto the next instruction. Make up your own words to the song with different body parts e.g. “You put your right shoulder in...”</p> <p>Use these links to help you hear the song:</p> <p>http://www.youtube.com/watch?v=gLrZgMlpkeU</p> <p>http://www.gardenofsong.com/midi/hokeypokey9.mid</p> <p>Here is another game which can be played. Prepare a light medium-sized square box that can be rolled. Paste different body parts on each side of the box such as eyes, arms, legs, feet. Have each child take a turn in rolling the box like dice. The body part that shows on top is the part the children will touch. Whoever touches it first gets to roll the box. You can make it more interesting by changing the parts pasted to add variety.</p>
<p>5 mins</p>	<p>Recap: Recap all the body parts and their functions.</p>

LESSON 3: 40 mins

<p>5 mins</p>	<p>Warm up: Recap the previous lesson on senses by asking questions like: <i>With what do you smell a flower?</i> Prompt with adjectives to describe the senses: <i>How does perfume smell—pleasant/unpleasant</i> <i>How do chips taste—salty</i> <i>What is a police car siren like—loud</i> <i>What is a whisper like—soft</i> <i>The sun is—bright</i></p>
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30 mins

Main Lesson:

Relate the sense organs with the five senses. For this you can plan out activities and exercises below.

Give children a series of short activities related to each of the five senses.

Listen and identify sounds on tape, look at objects, such as an apple or guava with a magnifying glass, smell a lemon, liquid detergent, identify objects in a feely bag, taste salty and sweet foods. Ask children questions about the five senses and where the sense organs are located in the body e.g. *How did you find out what was in the bags? Which part of your body did you use when you smelled the lemon?*

Tell a story in which children have to point to the relevant sense organ:

I went to the market yesterday. I saw (eyes) many colourful fruits and vegetables. However, it was so noisy that I decided not to stop (ears). I went to the nearby park instead. I stopped to smell the flowers as I entered the park (nose). Many children were playing there with brightly coloured balloons (eyes). Suddenly I heard (ears) the ice-cream truck coming. I bought an ice cream cone and bit into it (mouth). It was delicious (mouth). It melted so quickly that some of it fell onto my hands. It felt cold on my skin (point to hands). I looked at my watch (eyes), it was almost 5 o'clock, so I decided to hurry home.

Students will do worksheet **I, me, myself**.

The students will complete Let's Find Out for Ourselves on page 18 and 19 in the book.

The link below contains additional information and very interesting facts about the senses.

<http://www.cyh.com/HealthTopics/HealthTopicDetailsKids.aspx?p=335&np=152&id=2726#>

A crossword puzzle at:

<http://www.cyh.com/games/hotpots/yoursenses.htm>

is an excellent reinforcement exercise which can be done together on multimedia. It not only discusses senses, but the relevant vocabulary to describe them too.

5 mins

Recap:

Review that just like our body parts that help us to move, our five senses help us to become aware of our surroundings and to respond to it with our actions. *We sense with the help of our sense organs. Senses help control our*



actions. How would you prevent yourself from bumping into your friend who is standing in line in front of you when you are coming up after the assembly? You can see that person and so you know how to control the movements you make with your legs and feet.

Evaluation:

At the end of the chapter, ask the students:

1. Which sense comes to you mind when you see the following things:

	OBJECTS	SENSES
a.	Perfume	Smell
b.	Chocolate	Taste
c.	Hot tea	Touch
d.	Song	Hearing
e.	Television	Sight

2. Give one word answers to the following:

- i. Which sense organ do you use when you smell perfume?
- ii. Which sense organ do you use for hearing a song?
- iii. Which body part do we use while writing?
- iv. Which body part do we use while watching television?
- v. Which body part do we use while playing football?

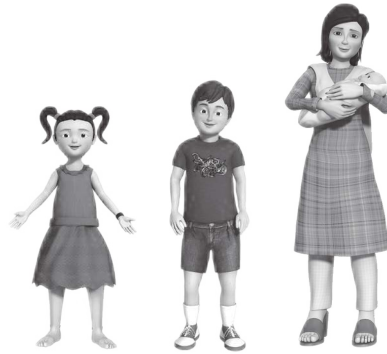
Answers

Exercise – 1

a) sight b) touch c) smell d) hear e) taste



Unit 1
Chapter 3
Growing up



Objectives	By the end of the chapter, students should be able to: <ul style="list-style-type: none"> • understand that humans and animals grow and change • understand that there are similarities and differences between humans • learn to ask questions and make suggestions about growing and getting older • learn about racial differences • learn to match young and adults of the same animals • realize the changes during the process of growth in living things
Vocabulary Bank	growth, change, tall, short, young

LESSON 1: 40 mins

5 mins	<p>Warm up: Prompt the students by writing the word ‘grow’ on the board and asking them what comes to mind. Write their responses like become bigger, taller, look different, large etc. on the board like a spider map.</p> <p>Pick their responses like become larger or changing, elicit previous knowledge about similarities and differences between human beings. <i>Did you look the same when you were a baby? How have you changed? Do you look like the person sitting next to you?</i></p>
30 mins	<p>Main Lesson: Read pages 22–25 from the book. As you read explain that we grow and change: <i>We change by becoming stronger. Our body grows.</i> However, we are still unique. <i>Do you like and dislike the same things as your friends? Are you all good and poor at the same subjects/sport/? Do you all have the same favourite food?</i></p> <p>Ask them to compare the pictures on page 24. What are the similarities and differences between these children? Ask them to observe that although all</p>



	<p>humans are alike in physical appearance (body parts), each one is still unique. Explain that as people may belong to different parts of the world they are different in appearance. Yet they are all humans just like us.</p> <p>You may refer to the following link:</p> <p>http://www.dailymotion.com/video/xqbpqr_head-shoulders-knees-and-toes_music</p> <p>for the video of the song <i>Head, and Shoulders, Knees and Toes</i> (see Chapter 2, Lesson 2) as it shows people of different races singing the song and highlighting that all humans are essentially the same with similar needs.</p> <p>Explain that our ability to learn new activities which we found harder earlier increases as we grow up. Ask the students what are the things that their younger siblings cannot do. Also ask about the things that they cannot do but their parents can. <i>We learn new things. Which activities can you perform now that were not possible when you were a baby?</i></p> <p>Through this discussion, the children will understand the phases of growth a human goes through.</p> <p>The students will do Exercise 1 and Exercise 2 in their notebooks. The teacher should facilitate Exercise 1.</p>
5 mins	<p>Recap:</p> <p>In pairs, the students will discuss three ways they are similar and different from their partner. You may also sing <i>Head and Shoulders ...</i> given in Chapter 1 to highlight similarities between humans in spite of racial/ethnic differences.</p>

LESSON 2: 40 mins

5 mins	<p>Warm up:</p> <p>Recap the important points learnt in the last lesson: We all grow and change in many ways. We look different. We learn new things that we could not do before.</p> <p>We are all the same physically as humans but different in our likes and dislikes.</p>
30 mins	<p>Main Lesson:</p> <p>Prepare flashcards with pictures of different animals and their young. <i>This is a chick. It will grow up to be a cat. This is a cub. It will grow up to be a lion.</i></p> <p>Exercise 3 and 4 will be done in class.</p>



Everyone will work on Let's Find Out for Ourselves on page 26 in the book.

This may be done by dividing the class into groups of four or five. The teacher will have to help conduct this activity with each group or by calling each group one by one in front of the class and helping them arrange themselves according to height and recording the results in their books.

You can also ask the students to draw the clothes they used to wear when they were young and draw the clothes they wear now. Explain to them that as they are growing they are changing but they do not notice it.

5 mins

Recap:

Recap the lesson by reviewing that all living things grow, breathe and, feed. Living things grow and change in size and in appearance. A puppy grows and becomes a dog. A human baby grows into an adult. It learns to walk, talk, and runs. We cannot do so many things which an adults can do easily. We will be able to do them as we grow older.

Evaluation:

At the end of the chapter, the following activity may be carried out to evaluate the students.

Ask the children to take a computer paper and paste 2 photographs:

- i. When they were a baby
- ii. A recent photograph

Write the differences and similarities they see in both the pictures. Talk about the changes they respond to and write a few simple lines.

My hair is longer now.

I am taller.

I wear larger clothes.

I did not have teeth.

The worksheet **Growing up** may be also be given.



Answers

Exercise 1

Answers will vary

Exercise 2

Answers may vary:

- a) height, strength, weight etc.
- b) height, weight, hair, facial looks, abilities to perform different activities etc.
- c) I can see, I can talk, I can hear, I can write, I can read.

Exercise 3

- a) baby b) toddler c) boy d) adult



Unit 2 Chapter 4
Humans and animals



Objectives

By the end of the chapter, students should be able to:

- understand that animals and humans move
- make observations and comparisons of the way animals move
- realize that people of different age groups have different ways of movement e.g. a baby crawls, a boy jumps then runs and an adult walks etc.
- understand that humans and animals need to eat and drink to stay alive
- realize that different animals eat different food
- understand that humans eat variety of food
- identify the things that are similar between human and animals

Vocabulary Bank

move, crawl, hop, gallop, fly, slither, burrow, skip, roll, twist, walk, run

[It would be helpful if this Science lesson is integrated with an English lesson focusing on the development of vocabulary related to movement and feeding.]

LESSON 1: 40 mins

5 mins

Warm up:

Elicit previous knowledge that humans, animals and plants are all living things. They have food, breathe, and grow.

Ask the students to think of how animals move. *Have you ever seen a spider move?*

After this brainstorming session, call a student in front of the class and ask him/her to act out in front of the class how that animal moves. The rest of the class has to guess which animal is being described. This should be done for four or five animals.



30 mins	<p>Main Lesson: Read page 30 in the book together. Ask question, <i>Both animals and humans are living things. But how are humans different from animals?</i></p> <p>Read pages 31–32 from the book. Ask them to look at the pictures on page 31.</p> <p>Ask how humans move. Is it the same as animals?</p> <p>Highlight that although animals and humans move in different ways. As humans grow, we crawl, walk, then run. Animals have particular movements and they move in specific ways.</p> <p>Explain that although there are many kinds of animals, they all move differently. Focus on the words used to describe their movements. These words should be shown on flashcards before the next lesson or put up around the classroom or softboard and drilled several times.</p> <p>The video on the link below is very helpful to enhance vocabulary on animal movements.</p> <p>http://vimeo.com/41446127</p> <p>It should be shown on multimedia to the students to enforce animal movement and the respective vocabulary.</p> <p>Exercises 1 and 3 should be done as class work.</p>
5 mins	<p>Recap: Review the main points and summarize them. Humans and animals are living things. They move in different ways. Drill the vocabulary words.</p>

LESSON 2: 40 mins

5 mins	<p>Warm up: Show some of the food that different animals eat and ask the students to name the animals that eat them, for example, show them a banana (monkey); show them carrot (rabbit) etc. You may prepare flash cards as well with pictures of different foods consumed by animals.</p>
30 mins	<p>Main Lesson: Clarify that not only do animals and humans move differently, they also eat different things. <i>What do you like to eat?</i></p>



Explain that humans eat food that may come from plants or animals to keep our bodies strong and healthy. Now do Exercise 2 together (see Activities below). Prepare small pieces of paper with names of different animals and their movement written on each. A game of charades can be played where a child mimes (acts out) the movement of a particular animal and names the movement e.g. horse-gallops. Whoever guesses correctly will be the next one to act out.

It is a good idea to ask children for their ideas about the food and drink taken by different, familiar animals e.g. cats, dogs, birds, fish and humans and help them to record these in drawings or simple charts. This can be an extension of Exercise 2 on page 36.

Prompt students by asking them what their pets eat, etc. This exercise can be done on chart paper for the students to complete by pasting pictures of foods and placing them in the correct category of food eaten by which living thing.

Worksheet **Humans and Animals** may be completed in class or at home.

5 mins

Recap:

Review that humans and animals eat, move and rest. Animals move in different ways than humans. Animals and humans all need sleep. Discuss Let's Find Out for Ourselves on page 35 and give it for homework for completion and pasting of pictures.

Evaluation:

At the end of the chapter evaluate the students with this simple exercise:

In how many different ways can you move?

Write down as many ways as you can think of. Answers will vary like walk, run, jump, hop, skip, twist, roll etc.

Answers

Exercise 1

- a) woman (she is a human)
- b) sunflower (cannot move from one place to another like a baby or snail)
- c) dog (eats meat)



Unit 3 Chapter 5
Plants around us



Objectives	<p>By the end of the chapter, students should be able to:</p> <ul style="list-style-type: none"> • understand the different stages a plant go through during its growth • learn that plants have a variety of shapes and sizes • understand that plants, like all living things, grow • recognize that most of the plants have roots, stem and leaves and many have flowers too • understand that plants are useful for humans • make observations of the plants and to record their observations using drawings and short phrases • draw and label parts of a plant
Vocabulary Bank	<p>root, leaf, stem, root, soil, flower, oxygen, carbon dioxide, seeds, seedling</p>
Preparation	<p>Observing plants grow may require short periods of time over several weeks. This activity should be prepared in advance so that children can be shown different stages of plant growth while they are covering the unit about plants. The children should make a drawing of the planted seed.</p>

LESSON 1: 40 mins

5 mins	<p>Warm up: It is highly recommended to show children, as an introduction, as many plant examples in different locations in the school garden as possible. Alternatively, seeds of different plants may be shown e.g. apple, lemon, <i>cheeko</i>, etc Ask students what these will grow into when planted.</p> <p>Teachers should engage students in growing a plant from seed or from a seedling. This activity is very interesting and motivating for the children.</p>
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Children may have grown seeds e.g. cress in preschool. In that case, it is recommended to explore how different plants develop e.g. beans, peas, *moong* beans, sunflower. Let's Find Out for Ourselves on page 42 may be done first in advance as it may take 2-3 weeks for the bean or sunflower to sprout.

30 mins

Main Lesson:

Ask all students to look at page 38 and read Sameer's dialogue. Remind the students that plants, like animals and humans, are living things, which grow and change.

Show the students a green flowering plant. Ask them to name the parts. Explain that just like the parts of our body, the parts of a plant have a special function to perform.

Show them flashcards of different plants. Explain that some may be flowering and other non flowering plants.

Some children have the misconception that 'weeds' and trees are not plants. This should be made clear.

Drill the plant parts given in the vocabulary bank above.

Explain the following terms as well:

- **Shoot:** the first part of a plant that appears from above the ground from a seed
- **Oxygen:** the air animals and humans must breathe in order to stay alive
- **Carbon Dioxide:** The air that we breathe out is used by plants to make food for themselves. Plants then release oxygen in the air.

Read pages 39-43. Keep repeating the names of the parts and their functions with reference to your plant and the pictures. *Where is the stem in this plant? The stem, like a road, will transport or carry the nutrients (food) and water from the roots to the rest of the plant.* The children will do Exercises 1, 2 and 3.

5 mins

Recap:

Summarize the main points discussed. Plants are important because they help us live. Plants are also living things which grow, feed and breathe. There are many different types of plants. Plants have different parts that do different things.



LESSON 2: 40 mins

5 mins

Warm up:

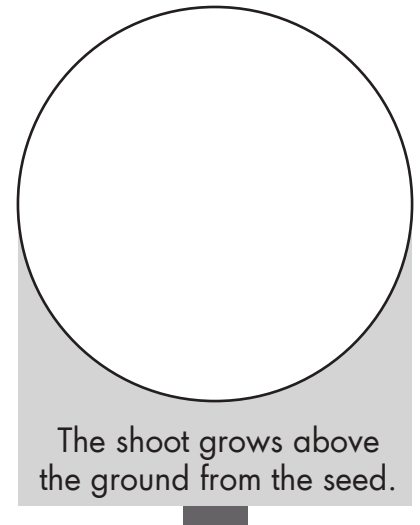
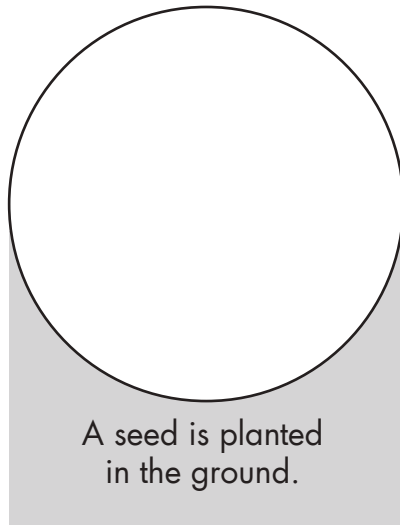
Link this lesson with the previous one. Show the children a flowering plant and ask them to name the parts.

30 mins

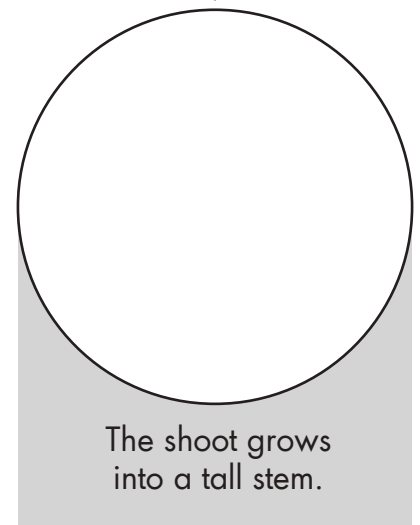
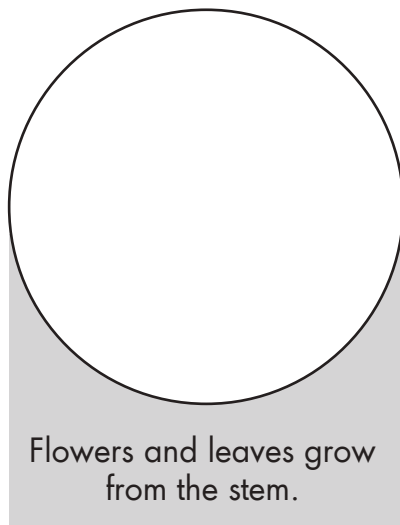
Main Lesson:

Now show the students the sunflower/bean plant planted earlier. *What difference do you see? A small plant has sprouted. How do you think this happened? We planted the seed in soil, watered it regularly and placed it in a place where there was plenty of sunlight. It will grow into a large plant.*

Students should draw a picture of the seedling at different stages by completing the sheet below.



Growing a Plant



The children may do worksheet **Plants Around Us**.

5 mins

Recap:

Summarize that plants grow in different stages. Just like the parts of our body perform different functions, parts of a plant also perform different important functions.

Safety:

1. Some children are allergic to pollen. They should be kept away from flowers and flowering plants.
2. Some plants e.g. Dumb Cane or ivy are poisonous.
3. Many unpackaged seeds bought from the market may have been treated with pesticides and should not be handled by children.
4. Seeds brought from their home gardens may be safer to use.

Evaluation:

At the end of the chapter, the following exercise may be given to evaluate the students.



Plant roots and stems



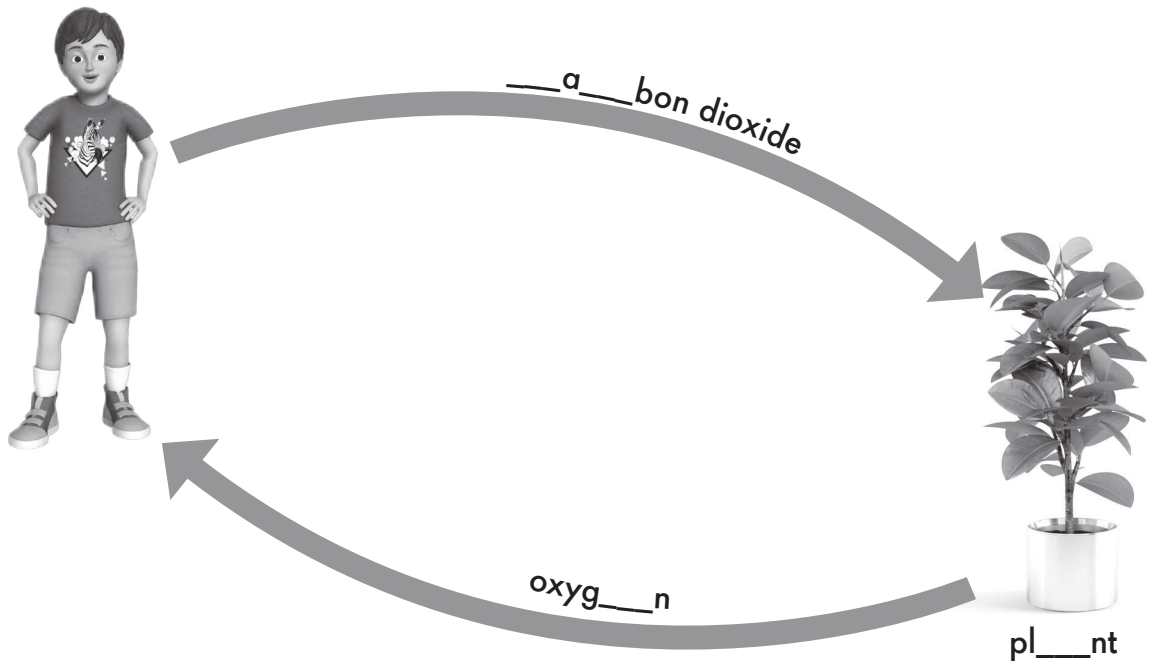
1. Fill in the missing words. Use the word bank to help you.:

- The roots of a p_____ are very important. The r_____ also suck up w_____ and nutrients from the soil to help the plant g_____ and stay h_____.
- The s_____ of the plant is like its skeleton. It helps to hold the plant up. It also carries water and nutrients to the food factory in the plant's l_____.

Word bank

leaves
plant
water
healthy
roots
stem
grow

2. Plants are important for us to survive. Look at the diagram below and label it correctly. Then arrange the letters in the circle to form a word that completes the sentence.



We must _ _ _ _ about plants. [Answer: care]

1. The following activity may also be performed:

Fill in a transparent vase with water and place a few with long stemmed white coloured flowers in it. Pour red coloured ink in the vase and leave aside. Observe after 3 days.

How do you think the colour travelled? Allow them to explain using the correct scientific words.



Answers

Exercise 1

Answers will vary.

Exercise 2

- a) Leaf: It makes food for plants.
- b) Flower: It gives seeds for new plant.
- c) Stem: It transfers water and minerals from roots to other part; it also transfers food from leaves to other plants.
- d) Roots: It takes water and minerals from soil.

Exercise 3

- 1. a
- 2. c
- 3. c
- 4. b
- 5. c



Unit 3 Chapter 6

Plants our pals



<p>Objectives</p>	<p>By the end of the chapter, students should be able to:</p> <ul style="list-style-type: none"> • understand and realize the basic necessities of plants • highlight the usefulness of plants • make observations of the plants grown in different conditions and use drawings to record their observations and show results • recognize the importance of soil, water and sunlight for plants to grow well
<p>Vocabulary Bank</p>	<p>smell pleasant, clean the air, breathe, absorb, nutrients, minerals, source of food, home, tidy</p>

LESSON 1: 40 mins

<p>5 mins</p>	<p>Warm up: Link this chapter with the previous one. Drill the names of the parts of the plant.</p> <p>Refer to the sunflower/ bean plant you had planted. Review that the seed was planted in soil, watered regularly and placed in sunlight.</p>
<p>30 mins</p>	<p>Main Lesson: Divide the class into 3 groups. Each group will be responsible for one tray each in Let's Find out for Ourselves.</p> <p>Note:</p> <ol style="list-style-type: none"> 1. Teachers should provide as many opportunities as possible, to observe growing plants to students under different conditions. 2. For this early level, it is advisable to stick to two conditions i.e. light and water. However, if students are curious and point out the third factor i.e. carbon dioxide, then do not avoid the discussion. 3. There might be increases in heights of plants which do not have sufficient light because the plants are growing towards the light.



4. Keeping in mind the above point, children may need some guidance to draw a conclusion from the results of the hands-on activity in Let's Find Out for Ourselves e.g. the one in the dark didn't look healthy [height of the plant will not be considered as a sign of plant health here].
5. At this stage children would be expected only to describe and not attempt to explain what happened.

Read pages 46-48. Keep eliciting previous knowledge by asking why plants are useful. *Look at the pencils you are holding. Where do you think the wood they are made of comes from?*

Exercises 1,2 and 3 should be done in class.

5 mins

Recap:

Recap that healthy plants need soil, water, sunlight and air to be healthy. Healthy plants can then be useful for humans and animals in many ways. We must take care of plants. Now ask:

What would happen to your plant if you...

...stopped giving it water?

...dropped it into an ocean?

..placed it in the dark?

...pulled it out of the dirt?

...put it in the freezer?

Why?

Evaluation:

The worksheet **Plants Our Pals** may be given for homework. The exercise below may also be done.



Circle the items that this plant needs to survive:



soil



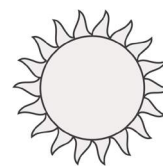
hammer



moon



rain



sun

Answers

Exercise 1

- a) breathe
- b) minerals
- c) clean
- d) home
- e) food

Exercise 2

- 1. c
- 2. a
- 3. b
- 4. a
- 5. a

Unit 4 Chapter 7

Sorting materials



<p>Objectives</p>	<p>By the end of the chapter, students should be able to:</p> <ul style="list-style-type: none"> • understand that there are many types materials • recognize that materials may be natural or man-made • name various natural sources of materials • learn that every material has many properties and we can explore some of their properties by using our senses • understand that materials can be used in a variety of ways • group materials in different ways, such as according to their sources or to their properties
<p>Vocabulary Bank</p>	<p>materials, objects, natural, man-made, wood, leather, metal, fur, cotton, paper, plastic, clay, rock, sand, hard, soft, rough, smooth, heavy, light, bendy, strong, waterproof, transparent</p> <p>Teachers should provide ample exposure to the relevant vocabulary by using it time and again. Make a list of names of materials and words to describe them and put up on the board.</p>

LESSON 1: 40 mins

<p>5 mins</p>	<p>Warm up: Start the lesson by asking the students to name the items you point to in the classroom like the table, board, duster, uniform, pencil, notebook, softboard, shoes etc. and keep on writing these names on the board.</p> <p>After you are done, tell the students that the things you have written are all objects. <i>These objects are all made of different materials.</i> Elaborate on what materials mean. <i>What is this ruler made of? Plastic. It can also be made of wood. The object is the ruler. The material is wood or plastic used to make it.</i></p> <p>Through these observations, students will start distinguishing between objects and materials with specific characteristics.</p>
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30 mins

Main Lesson:

Ask the class what material is used to make the objects that are written on the board.

Make sure that you make it clear that by 'material' we are not referring to fabric or cloth. Also, distinguish between 'material' and 'object'. Your desk is made of wood. Wood is the material. Your desk is the object which has been created from wood. Every objects is made from some kind of material.

Prompt the students with relevant questions. Where do you think materials come from?

Paper is made of wood. We get wood from...? Explain that trees are found naturally, so wood is a natural material. There are two types of materials, natural and man-made.

Explain that we get natural materials from the animals, plants, or under the ground. Man made materials are made by humans using natural materials. Revert to the example of the ruler. The ruler is made of wood or plastic. When it is made of wood, it is made of a natural material. When it is made of plastic, it is made from a man-made material.

Now point to the window. Glass is not found under the ground. It does not come from plants or animals. So, it is a man-made material. Glass is made from sand, a natural material found on Earth.

Make two columns on the board. Label one Natural Material and the other Man-Made Material. Ask the students to sort the objects written at the beginning of the lesson as being made from natural or man-made sources.

Read the chapter and do exercises 1 and 2.

5 mins

Recap:

Ask the students to look around their classroom and find an object made of metal, plastic, cloth and glass.

They can then fill in the table below.

Object	Made of which material	Hard/soft	Heavy/light	Smooth/Rough	Bendy/Stiff	Waterproof/ Not waterproof?

This can also be done as a chart activity where the children will draw or paste pictures and display the information in the table above creatively.



5 mins

Warm up:

Review that all objects are made of materials. These materials are obtained from natural or man-made sources. Different materials have different properties, which we can tell by feeling them. *How does your uniform feel? It is soft. It is made of cloth/fabric. How does your chair feel? What is it made of? Why is it not made of rubber or paper?*

30 mins

Main Lesson:

This lesson requires loads of hands-on experience for the students. Provide them with a variety of materials and encourage them to find out about each material using all of their five senses.

The students should sit in a large circle. Place objects in the middle like a piece of chalk, a mug, a stone, a newspaper, a calendar, a plastic bottle cap, keys, tissue paper, ribbon, denim etc. Each child will pick up one object, name it, and describe how it feels. Encourage them to use appropriate descriptive words like smooth/rough, heavy/light, hard/soft and other adjectives from the Vocabulary Bank which you should put up on the board.

Now blindfold a child. The rest of the children will choose an object and use appropriate vocabulary to describe it to the blindfolded child, who will guess the object without touching it.

OR

The teacher should prepare in advance 3 cloth bags containing some objects made of different materials like a soft toy, some keys, a table tennis ball, a tennis ball etc.

The teacher would also need to prepare 2 or three card board boxes with some openings in the lid through which a child's hand can go in. In each of these boxes place four beakers each containing sand, oil, liquid soap or dish-washing liquid, and water. Cover carefully with the lid with the openings. Make five or six stations in the class. On each station place either a feely bag or a box with the liquid and sand containers. Ask children to take turns to feel and describe objects in the feely bag as well in the box.

Let's Find Out for Ourselves page 60–61 and Exercise 3 page 63 and should be done in class. Let's Find Out for Ourselves should be done once the children have explored the materials in the activities above during the lesson.



Safety:

1. Glass objects may be avoided or used with extreme caution with young children. Children could be shown glass items/objects that are not likely to fall/slip out of their hands e.g. children could touch windows etc.
2. Do not bring objects with sharp edges or corners to class to use in this lesson.
3. Exercise caution that the children should not taste the detergent, soap, sand, etc.

5 mins

Recap:

Ask a child to come up and think of an object. He/she will describe it using the words to describe it. The class will try to guess which object it is.

Evaluation:

At the end of the chapter, the worksheet on **Sorting Materials** may be given to evaluate the students.

You can take help from this exercise as well:

1. Name the material from which the following objects are made up of:

Pot: _____



Toy Car: _____



Spoon: _____



Chair: _____



Shirt: _____



Answers

Exercise 2

- Telephone – plastic – man made
- Clay lamp – clay – natural
- Box - cardboard – natural
- Wrapping paper – paper – natural
- Ball – rubber – natural

Exercise 3

- a) Teddy bear - Fluffy
- b) Glass - Transparent
- c) Pencil – sharp
- d) Ruler – hard
- e) T- Shirt – soft
- f) Rock - rough



Unit
4

Chapter 8

Using materials



<p>Objectives</p>	<p>By the end of the chapter, students should be able to:</p> <ul style="list-style-type: none"> • identify different materials used in various objects • learn to think what the material would need to be like for making a certain object • sort out a suitable material for a specific purpose from a variety of materials • understand that we can explore some of the properties of a material by using simple tests • learn to suggest how to test an idea about whether a material (fabric or paper) is suitable for a particular purpose • learn to record suggestions and conclusions by completing simple sentences • understand that materials can be used in a variety of ways based on their properties • understand that an object can be made from different materials
<p>Vocabulary Bank</p>	<p>materials, objects, natural, man-made, wood, leather, metal, fur, cotton, paper, plastic, clay, rock, sand, hard, soft, rough, smooth, heavy, light, bendy, strong, waterproof, transparent</p> <p>Teachers should provide ample exposure to the relevant vocabulary by using it time and again. Make a list of names of materials and words to describe them and put up on the board.</p>
	<p>[NOTE: This lesson, like the previous one, requires lots of hands-on experience for the students. Provide them with a variety of materials and encourage them to find out about each material by devising and using some simple tests.]</p>



5 mins

Warm up:

Start the lesson by asking the students to take out their water bottles and placing it on their desk.

Ask them to look closely at their bottles. Ask them what material they think have been used to make the bottles. Write their answers on the board, plastic, metal, etc.

What kind of qualities should the material used to make a water bottle have?
Write answers on board: It must be strong, it should keep the water cold, it should be easy to carry and store, etc.

Why do you think it is not made of clay? It will break easily, it is harder to carry because it is heavy. It will keep the water very cold like in an earthen vessel (matka) at home, but for a water bottle to be carried to school everyday, clay would not be suitable.

We use materials which are suitable to make certain objects.

30 mins

Main Lesson:

Continue the discussion that we must choose the right material for an object.

What would you use to make a window? You would have wood or metal for the frame. *The panes would be made of?* Let the students respond to why we would use glass. Prompt them by saying would we use black coloured glass, or clear glass? Make them understand that we would use through which we can see through, and encourage them to use the word 'transparent'.

Why do you think we will not use paper or cloth?

Now place any three objects in front of wood, plastic, and glass on the table. For example, a wooden ruler, pencil, wooden pen holder, etc, plastic box, markers, polythene bag, and a toy; glass decoration, drinking glass, mirror etc.

The students will sort the materials into groups according to the materials they are made from: wood, plastic, and glass. You can make three columns on the board and write the names of the objects in each.

Now explain to the students that one material may be used in a number of ways to make different objects, like the ones on the table. However, the one object can be made using different materials. *Look at this wooden pen holder. Can it be made of plastic? It can also be made of glass. Your water bottles can also be made of plastic or glass, but we use plastic because glass is easily breakable and not suitable for bringing to school everyday, even though it is waterproof.*

Read pages 64–67 and complete Exercises 1 and 2.



5 mins	<p>Recap: Review the main points of lesson. Objects are made of different materials like glass, wood, metal, stone, plastic, etc. All materials have specific properties which is why we use them. They may be heavy or light, strong or weak, smooth or rough, etc. We can tell the properties of a material mainly by sense of sight and touch.</p>
	<p>Safety:</p> <ol style="list-style-type: none"> 1. Glass objects may be avoided or used with extreme caution with young children. 2. Do not bring objects with sharp edges or corners to class, to use in this lesson. However, do show pictures to show some sharp objects like shards of broken glass, knife, scissors etc.

LESSON 2: 40 mins

5 mins	<p>Warm up: Review the main points from the previous lesson. <i>Materials have different properties, That is why we use them to make certain objects. But same objects may be made using different materials. The chairs you are sitting on may be made from wood, plastic, or metal depending on their use and on what we like to use. A chair in a garden will most probably be made of plastic because...?</i> Elicit responses from the students. Answers may vary that it is lighter, easier to lift and move, easy to wash and clean.</p>
30 mins	<p>Main Lesson: Bring an umbrella to the class. Ask the students what materials are used to make it. As they identify the materials, record them on the board. Ask why they think each material has been used. Now recap how specific objects are made from certain material and not others. Explain that materials have to be tested for their properties before they can be used. To demonstrate this, divide the class into groups of 3. Ask the students that if the umbrella was torn and had to be repaired which material would be the best to repair it: newspaper, piece of polythene/plastic bag, and some soft loosely-woven cloth like <i>malmal</i>? Ask them to note their predictions down. The students should respond that the correct material should be waterproof. In order to check, a test of the material must be carried out to check if it is waterproof. Provide each group with a beaker of water and a dropper. Every group will lay out each material on the desk and drop two droppers full of water onto each material. The same amount of water must be dropped on each</p>



material. The material will be lifted up and checked to see if the water has gone through on the table. Record the results on the board. The students will find that newspaper is waterproof but it cannot be used to repair an umbrella because it can get torn easily.

Hence, plastic is the most suitable in this case.

This entire activity can be connected to Let's Find out for Ourselves on page 68. Help them fill in the table to complete the exercise. Prompt children in such a way that they can explain that they can explain why the materials have been used by describing their properties.

5 mins

Recap:

Review the main points discussed in lesson.

Evaluation:

At the end of the chapter, the worksheet **Using Materials** may be given to evaluate the students.

Answers

Exercise 1

- Answers may vary (wood, rubber, plastic, cotton, glass etc)
- We choose a material according to its properties.
- Answers may vary (wood, rubber, plastic, cotton, glass etc)
- Answers may vary (pencil, chair, cupboard, house etc)
- Metal, wood and plastic

Exercise 2

1. b 2. a 3. a 4. b

Exercise 3

- bricks/cement – it is hard and strong
- water proof
- it is transparent
- Wool
- Plastic
- Wood



Unit
5

Chapter 9

Light and dark



<p>Objectives</p>	<p>By the end of the chapter, students should be able to:</p> <ul style="list-style-type: none"> • learn that darkness is the absence of light • understand that light is essential for seeing things • learn that when it is dark, senses other than sight can be used to help find and identify things • identify and name some different sources of light • understand that there are many sources of light which may be natural or artificial • differentiate between a natural light source and man-made light source • realize that light sources vary in brightness • explain that the Sun is a source of light even when it is behind a cloud • understand why objects are easier to see in bright light
<p>Vocabulary Bank</p>	<p>dark, light, natural light sources, artificial/man-made light sources, torch, warning light, Sun, candle, lantern, bright, black, night, day, reflect/shine</p> <p>Provide ample exposure to the relevant vocabulary by using it time and again. It may be a good idea to make a list of such words and phrases used to make comparisons e.g. darker/darkest, bright/brighter/brightest etc. with the students to be put up on class softboard.</p>

LESSON 1: 40 mins

<p>5 mins</p>	<p>Warm up: After you enter the classroom, switch off the lights.</p> <p>Now ask the students if they can see properly or not. And what difference do they observe when the light was switched on and now.</p> <p>Variation: If your classroom is not dark enough, ask questions. <i>Can you see anything in a dark room? What if there is a sudden power breakdown at night and your UPS (Uninterrupted Power Supply) or emergency battery does not work? Can you see anything?</i></p>
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Explain that we need light to see things. We can only see when there is light. Explain what darkness is: We cannot see when it is dark because darkness is the absence of light.

30 mins

Main Lesson:

Continue the discussion by asking where do you think light comes from? Draw a circle on the board. Write sun in the centre of the circle on the board. Ask the students to work in pairs, and think of as many sources of light as possible. Write all of these on the board in around the circle. Explain that the sun is the most important source of light.

This unit like the previous unit requires lots of hands-on experience for the students. Provide them with a number of opportunities to observe light, partly dark and dark situations.

Take the children outdoors and without looking at the Sun, ask them to decide when it goes behind (or emerges from) a cloud. Ask children to explain how they can tell. Make a list of children's suggestions. Use this activity to clear the misconception; children sometimes have that night is caused when the Sun goes behind a cloud. Help them identify changes that occur when the Sun goes behind a cloud and recognize that these are different from changes at night when there is no sunlight falling on a particular place on the Earth.. Ask them to find different objects which give light, even though these objects may be switched off at that time. Ask the children to draw as many pictures as they can recall of objects which give light. The activity sheet below can also be given.

The students will identify and circle the light sources and colour them. The teacher can help them to label the sources.



5 mins	<p>Recap: Ask relevant questions to summarize the lesson.</p> <p><i>What do we need to be able to see?</i></p> <p><i>Can we see when it is dark? Why?</i></p> <p><i>Which objects give off light?</i></p> <p>Ask the students to list down sources of light (objects that gives us light are also included) and mention whether the source is natural or man-made.</p>
	<p>Safety:</p> <ol style="list-style-type: none"> 1. Teachers should warn children NEVER to look directly at the Sun. Blindness can result. 2. Use lighted candles inside a tall glass container or empty jam jars to prevent accidental burns or fire. 3. Stubby candles are also easy and relatively safe to use as they do not knock over easily. All naked flames are best used in a metal tray e.g. shallow metal tray filled with dry sand. Children should be kept away from flames.

LESSON 2: 40 mins

Preparation:

Bring a torch, candle, matchstick, table lamp and ball to class.

5 mins	<p>Warm up: Continue from the previous lesson and recap that we can only see when there is light. We cannot see anything in the dark. Connect with the previous lesson to link with sources of light. Show them the objects and ask them to name the objects. This should be easier now as the children have had plenty of practice in the previous lesson.</p>
30 mins	<p>Main Lesson: Explain that sources of light may be natural, like the sun, or man-made like the lightbulb.</p> <p><i>Why do you think we can see during the day? The sun is the most important source of natural light. Natural means that it is not made by humans. Point to the classroom light. Is that a natural or artificial source of light? Why?</i></p> <p>Ask which of the objects named are natural and which are artificial. Record the answers on the board.</p>



	<p>Worksheet Light and Dark can be given to the students.</p> <p>Do Let's Find Out for Ourselves. Use this exercise to help them explore other options to find locate and identify things when their sense of sight cannot be used. The exercise will help them reach the conclusion that when it is dark other senses can be used to help find and identify things.</p> <p>Link this up with the question: <i>What do you think people without sight use senses? Which sense do you think they would use the most?</i></p>
5 mins	<p>Recap: Summarize the main points again about the importance of light.</p>

LESSON 3: 40 mins

5 mins	<p>Warm up: Recap that the Sun is the most important natural source of light. Elicit previous knowledge by asking: <i>At night, what sources of light do we use when there is no Sun?</i> Write the answers on the board. Explain that we use artificial sources</p>
30 mins	<p>Main Lesson: Read pages 72–74 from the book. Explain that some light sources are brighter than others.</p> <p>Complete exercises 1, 2 and 3 together in class.</p> <p>Additional explanation may be given that the moon itself does not produce light, but it reflects light from the Sun.</p> <p>For homework, the students can be asked to draw a night-time scene with all light sources e.g. moon, stars, streetlights, car headlights, lights in houses, decoration, shops, etc. They can be asked to label N for natural and A for artificial.</p>
5 mins	<p>Recap: Ask relevant questions about the main points of the lesson, light, darkness, and sources of light.</p>

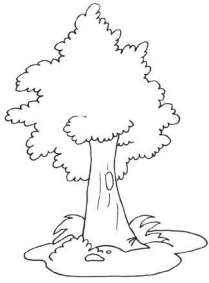


Evaluation:

At the end of the chapter, plan a worksheet to evaluate the students.

You can take help from this exercise as well:

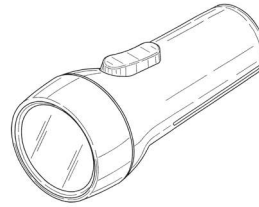
Colour the pictures that are the sources of light:



TREE



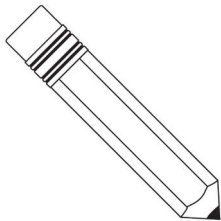
CANDLE



TORCH



MOON



PENCIL



LIGHT BULB



CHAIR



BALL

Answers

Exercise 2

1. b

2. b

3. c

4. a

5. c

Exercise 3

- sun – natural
- fire – natural
- firefly – natural
- computer – artificial
- street lights – artificial
- moon – natural

Unit 6 Chapter 10
Making a move



Objectives	<p>By the end of the chapter, students should be able to:</p> <ul style="list-style-type: none"> • learn that there are many sorts of movement which can be described in many ways. • identify four directions of movement: forward, backward, right, left • observe and describe different ways of moving. • understand that an object moves when it changes its position • relate movement and changing directions • understand the concept of push & pull
Vocabulary Bank	<p>move up, down , forward, backward, swing, turn, go round, fast faster, slow, slowest, right, left, push, pull</p>

LESSON 1: 40 mins

5 mins	<p>Warm up: Ask the children to stand up and remain still. It will not be possible for them to remain still for a very long time. <i>We and the world around us are moving all the time.</i></p> <p>At this point the class can be taken to a nearby park or school playground to introduce the topic.</p> <p>OR</p> <p>Alternatively, the teachers could ask children about things that move. These should be things they encounter frequently like toys, bicycles, swings, cars etc.</p>
30 mins	<p>Main Lesson: Push the toy car forward. Explain that it has to be pushed. <i>I pushed the car to make it move.</i></p>



Now pull it backward. *I pulled the car to make it move backward.*

Now push the car to the right. *The car was moving forward, but now I have moved it to the right. Pushing can change direction of a moving object.* Now move it to the left.

Children often have the misconception that 'movement' means only moving from place to place. It is important to clarify this wrong notion. This can be done by emphasizing movements in which objects change direction or speed (speed up or slow down).

Divide the class into groups of four. Motivate children to find things in the classroom that can be moved. e.g. window, door, table, chair drawer. Ask them to make suggestions about how these objects can be made to move. Now let them actually move the objects.

Let them decide whether they were right when they made suggestions about moving the objects. Finally tell them to specify objects which they moved by pushing and those which they moved by pulling.

What are some objects that can be pushed? What are some objects that can be pulled? Are there objects that can be both pushed and pulled?

Make a T-chart on the board with the headings Push and Pull, and Both. Write their responses on the board.

OR

The teacher can also prepare a chart divided into three columns, Object, Push, and Pull. Fill in the responses as they are discussed. Students will record these objects and add others for each force. They will go back and add the words, 'push and pull'.

Here are some examples of responses:

Push: buttons on a mobile/keyboard/doorbell, pencil onto your paper, marker/chalk on the board, pencil into a pencil sharpener, etc.

Pull: zippers, shoelaces, toys with strings, socks on your feet, etc.

Both Push and Pull: chairs, swings, etc.

The worksheet **Making a Move** will be completed in class. Encourage students to move around and try out some of the activities themselves as they answer the questions on the worksheet.

[It may seem to take up a lot of class time but discussions and hands-on activities will help students understand the key concepts.]

5 mins:

Recap:

Review that all objects in the world move with a push or a pull. *Any type of push or pull is called force. I can lift this chair with a pull. I can push it into the desk.*



Objects usually move in four directions; forward, backward, right or left. They can also move fast or slow, or they can stop with the help of a push or a pull.

I can make this toy car stop with the use of force.

I can also make it grow fast or slow depending on how hard I push or pull it.

LESSON 2: 40 mins

5 mins

Warm up:

Review that all objects move with the help of a push or pull called force. Demonstrate with a toy car with a string tied to it. *Am I pushing or pulling this car?*

30 mins

Main Lesson:

Read page 78-80 from the book.

Do all exercises.

Do the Let's Find Out for Ourselves activity and discuss the results.

5 mins

Recap:

Ask relevant questions to summarize the lesson:

What are the four ways in which objects usually move? Forward, backward, turning right, turning left

Can objects move by themselves? No, a force has to be present

What is necessary to make them move? A force like a push or a pull

Safety:

1. Supervise the students very carefully as they move about pushing and pulling doors, windows, toys and other materials brought to class. They may injure themselves or others.
2. In case a visit to a nearby park is planned then it must be carried out in accordance with school guidelines for ensuring safety and security of the students outside the school.

Evaluation:

At the end of the chapter use this exercise to evaluate the students:

1. Make a list of things that move on the ground.
2. Make a list of things that move in water.
3. List down the things you see in your class room that can move.



Answers

Exercise 1

1. Horse cart – pull
2. Trolley bag – pull
3. Toy car – push
4. Mason trolley – push
5. Bicycle – push
6. Drawer – pull

Exercise 2

1. Roller coaster – fast
2. Bicycle – slow
3. Motorbike – fast
4. Horse carriage – slow
5. Motorboat - fast



Unit 6 Chapter 11
Push and pull



Objectives	<p>By the end of the chapter, students should be able to:</p> <ul style="list-style-type: none"> • understand that everything needs a push or a pull or a twist to make it move • identify push and pull • differentiates between forces as being big and or small • learn how objects start moving, change direction or stop moving • identify the cause of motion • realize that heavy things are difficult to stop • realize that fast things are more difficult to stop than slow things • recognize that it is not only humans that make things move by pushing i.e. some unseen forces are also at work in causing movement
Vocabulary Bank	<p>force, push, pull, twist, stretch, bend</p>

LESSON 1: 40 mins

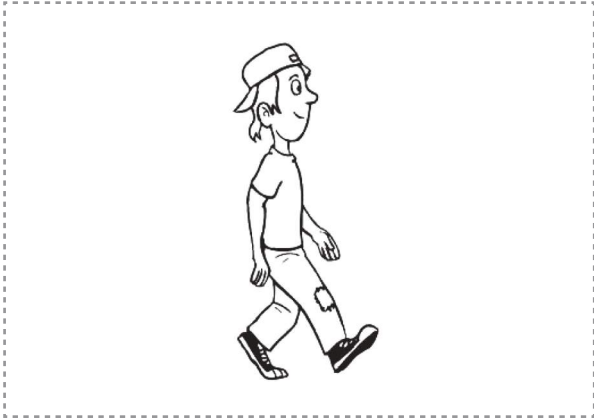
<p>5 mins</p>	<p>Warm up: Connect this lesson with the previous one by explaining that a force is a push or pull that can change an object's position, and put it in motion. Brainstorm different ways children push and pull things to move them. They might push a door to open it, or pull a door to close it. They might push a shopping cart, pull a wagon behind them, push someone on the swings or pull flowers to pick them.</p> <p>You may use videos of a park or playground showing some joyrides, swings or merry go round to introduce the topic. Alternatively, the teacher could use photos and pictures.</p>
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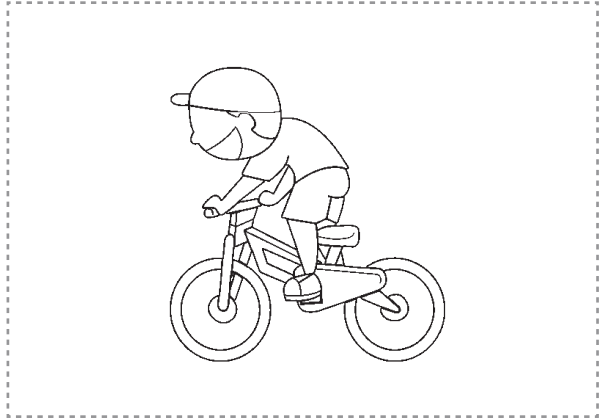
	<p>Recap the relevant vocabulary related to movement used in the previous chapter [move up, down, forward, backward, swing, turn, go round, go faster, slow or fast].</p>
<p>30 mins</p>	<p>Main Lesson: Give children coins, marbles, or other small objects to push on the floor or on a flat surface. <i>What happens to the motion of the object when they push harder?</i> Explain that when they use more force, the object might move faster or move farther.</p> <p>Introduce the concept of speed. <i>Speed describes how fast something moves. Fast-moving objects go farther distances in a small amount of time. Slow-moving objects take much longer to go the same distance.</i></p> <p>Have children think about heavy and light objects. <i>Which is harder to put into motion: a bowling ball or a beach ball?</i> Children should know that you need more force to put heavier objects in motion. To demonstrate this, give them a chance to throw the lighter and the heavier ball.</p> <p>Read pages 84–86. Complete Let’s Find Out for Ourselves together. It would be a good idea for the teacher to prepare and bring these objects to class for a demonstration.</p> <p>Precaution: Do NOT allow any student to crush a tin can. Warn them that this is very dangerous and nobody should try this at home or in class.</p> <p>Exercises 1, 2 and 3 should be completed in class.</p>
<p>5 mins</p>	<p>Recap: Summarize the main points discussed in the lesson.</p>
	<p>Evaluation: At the end of the chapter, the worksheet Push and Pull may be given to evaluate the students.</p> <p>You may also take help from the following exercise:</p>



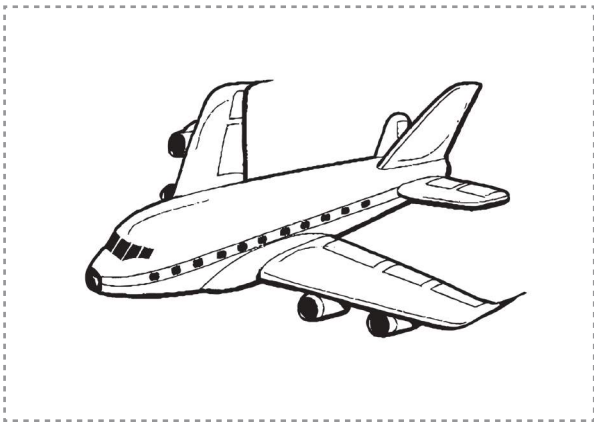
1. Look at the picture below. Decide which moves the fastest. Which moves the slowest?



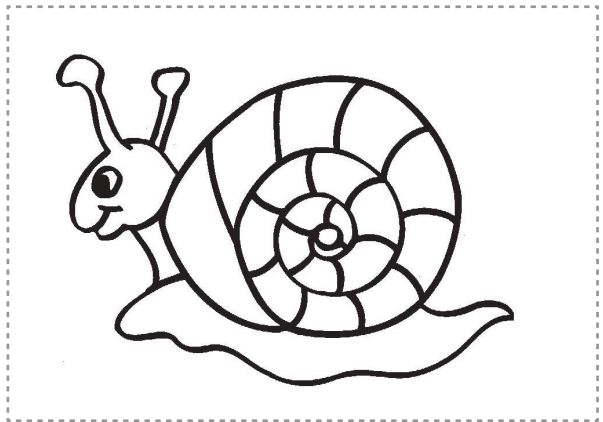
child walking



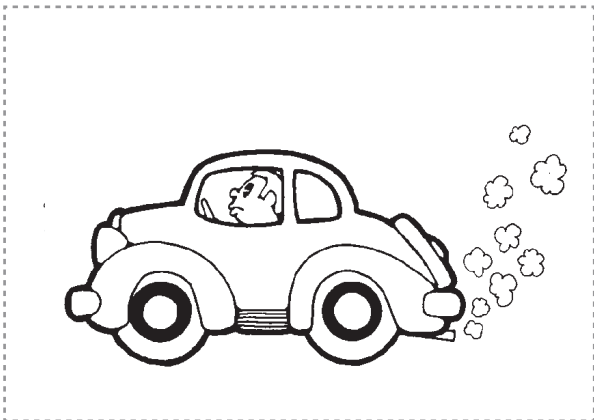
child cycling



aeroplane flying



snail crawling



car driving



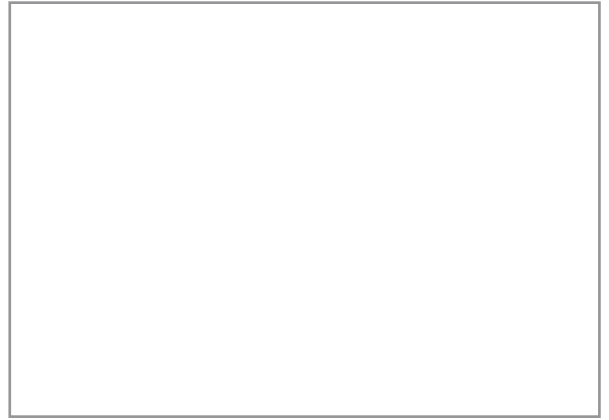
baby crawling



2. Cut out the pictures and paste them in order.



slowest



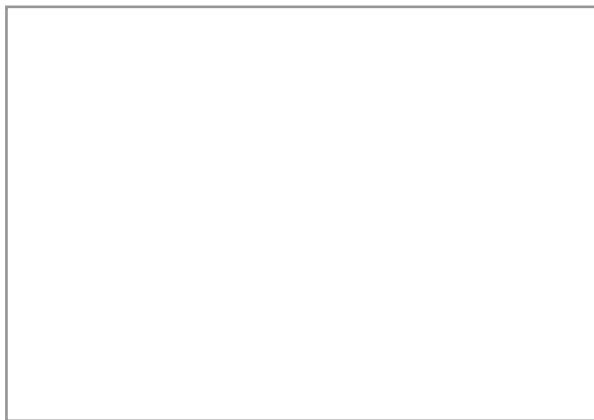
quite slow



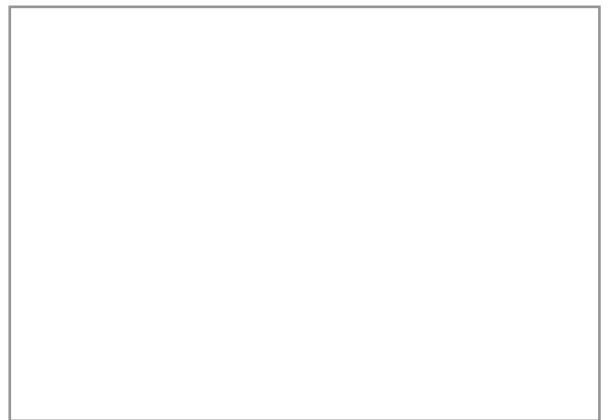
Medium



Quite fast



very fast



fastest



Answers

Exercise 1

- a) It is a push force applied on both sides of the object.
- b) By pushing or pulling the direction of force can be changed.
- c) Something can move fast by pushing or pulling it with force.
- d) Something can be slowed down when it is pushed or pulled in the opposite direction.
- e) Engine produces force for machines.

Exercise 2

- 1. Push
- 2. Push
- 3. Pull
- 4. Twist

Exercise 3

- 1. b
- 2. c
- 3. c
- 4. c
- 5. a



Unit 7 Chapter 12
Sounds



Objectives

By the end of the chapter, students should be able to:

- realize we hear with our ears
- realize there are sounds all around us
- understand there are many different sources of sounds
- explore sounds using their sense of hearing
- make observations of sounds by listening carefully
- realize there are many different ways of making sounds
- understand that the greater the force applied the louder sound produced e.g. as you bang a drum harder, the sound gets louder
- recognize that sounds vary in many ways and these characteristics of sounds allow us to describe and categorize sounds
- turn ideas about hearing into questions that can be tested
- make and record observations
- identify different ways in which simple musical instruments make sounds
- group instruments/ objects that make sounds in similar way
- understand difference between pleasant and unpleasant sounds

This unit requires lots of hands-on experience for the students. Provide them with a number of opportunities to hear a different of sounds in a variety of settings.

Vocabulary Bank

soft, loud, harsh/unpleasant, silence, quiet, rattling, ringing, buzzing, whirring.

Help children describe sounds using a range of appropriate vocabulary. Make a list of sound effects and sound vocabulary like words and phrases used to make comparisons e.g. louder than, softer than, just the same with the students and put up on the class softboard for reference and reinforcement. The list may include the following words:

murmur	blast	hoarse	chuckle
silence	clash	yelp	laugh
drip	cry	roar	bark
echo	hiss	scream	whine
tap	howl	shout	whimper
rumble	hum	snap	giggle
loud	mutter	beat	slap
harsh	noise		



5 mins

Warm up:

Introduce the chapter by a one minute 'listening break' in the classroom. Ask the children to sit silently with their eyes shut. Ensure that children keep completely silent. Ask them what sounds they heard. List these on the board

Ask them to identify the source of the sound. *How do we hear sounds? Our ears help us to hear sounds and understand where they are coming from and what is making them.*

By eliciting previous knowledge, you can now move onto the lesson.

30 mins

Main Lesson:

- Ask the children to sit in a circle. *What kind of sounds can you make?* They will give different answers like sounds from their mouth using their voice e.g. talking, whistling, clapping, stomping, tapping, shuffling, snapping, slapping, clicking of fingers, whispering, sighing, blowing, whistling, singing, screaming, humming, laughing, barking, whining, whimpering, crying, giggling. List these sounds in their journal (the teacher can demonstrate these or a child can do these and the rest of the students can copy it).

OR

You can also sing *If You're Happy and You Know It*:

http://www.dailymotion.com/video/x14d2h1_if-you-re-happy-and-you-know-it-nursery-rhyme_tv

- Ask them: *Can animals also make sounds?* Elicit answers from the class and note them.

OR

Sing *Old McDonald had a Farm*. You may add your own animals to expose the children to a large variety of sounds.

http://www.dailymotion.com/video/xzcdqz_old-macdonald-had-a-farm-nursery-rhymes_music

- Now show them a variety of musical instruments e.g. a tambourine, a small drum, a flute, and a string instrument. Pass the instruments around to let them explore the sounds they make. Explain that the sounds are being made when we shake, hit, pluck or blow into different objects. Help children describing these sounds e.g. high, low, loud, quiet, soft, neutral, unpleasant, noisy, rattling, and ringing etc. It would be a better to conduct this activity in the music room.



Let the children understand that sounds may be loud or soft. Ask a child to beat the drum loudly. *The harder you bang, the louder the sound becomes.* Whisper close to the students. *Is my voice soft or loud? If I scream, will it be a loud sound? Sounds which are very loud can be unpleasant. Sounds which are soft and soothing can be pleasant to hear. Can you think of any pleasant and unpleasant sounds?*

- You may also play a recording of different sounds for the students. A very useful link for teachers to use with their students while teaching about sound is <http://soundbible.com/1455-Train-Horn-Low.html>

SoundBible.com offers thousands of free sound effects, sound clips, and straight up sounds. These sounds can be used by teachers' to provide a large variety of listening experiences to the students.

OR

Make children listen to and identify more sources of some familiar sounds from the environment. This may be done by recording common sounds in the environment e.g. a car engine, birds tweeting or chirping, schoolchildren singing the National anthem in the assembly, a flute playing, footsteps, a tap running. Alternatively you could record voices of different children in the class speaking. Play the tape and then ask children to identify who they are.

Prompt the students by asking which of the sounds are loud/soft, pleasant/unpleasant.

The worksheet **Sounds** should be done in class.

5 mins

Recap:

Summarize the main points of the lesson.

We hear with our ears.

We can make different sounds with our voice and body (singing, whistling, clapping).

Sounds can be loud or soft. The more force we use, the louder a sound will be and the less we use, the softer it will be.

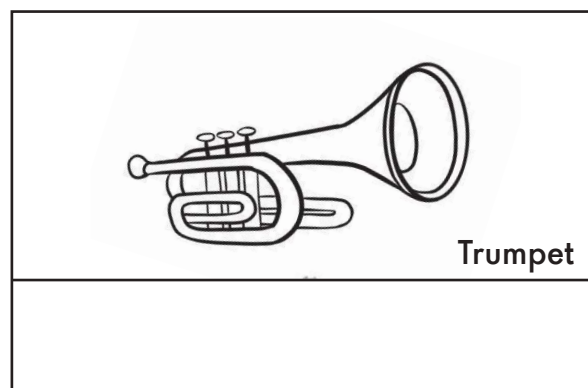
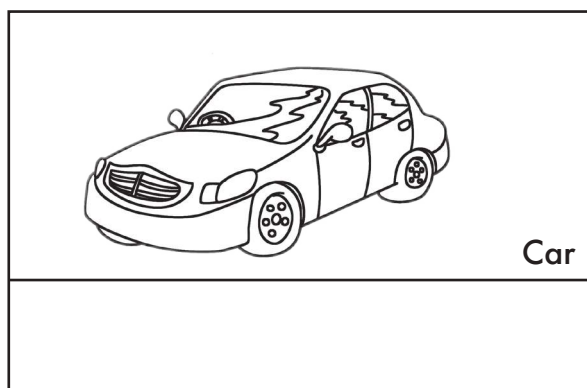
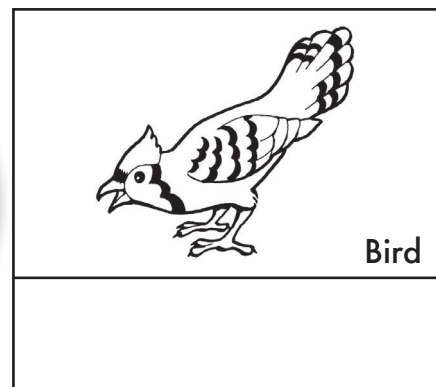
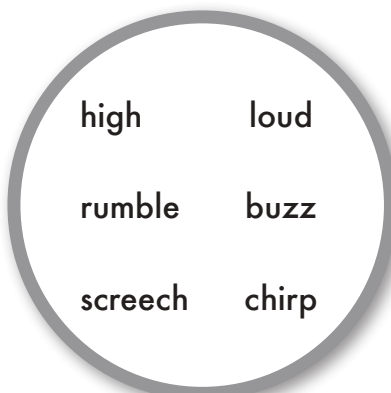
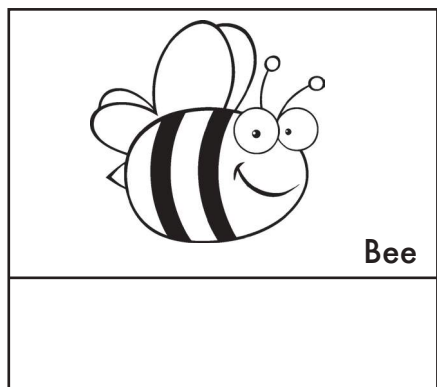
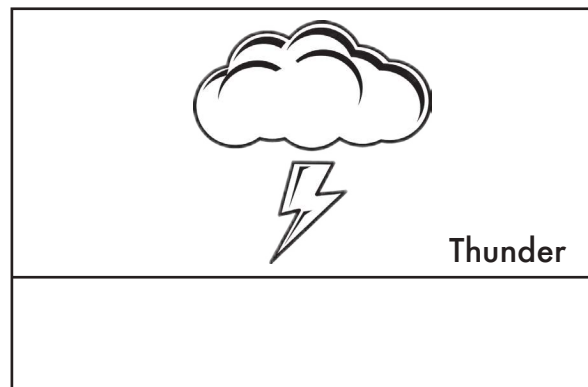
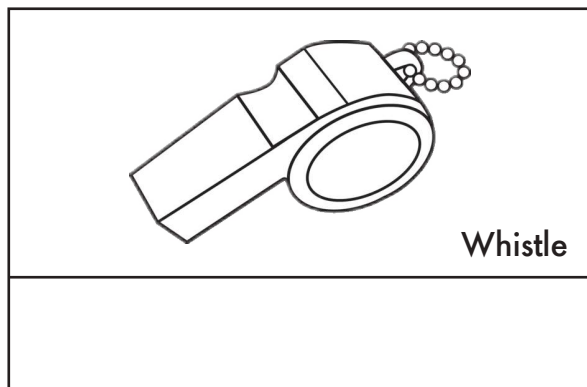


LESSON 2: 40 mins

5 mins	Warm up: Ask the children how we hear sounds. <i>We hear with our ears.</i> Show prepared pictures of ears belonging to animals like cat, dog, horse, elephant etc. Explain that some animals have ears which cannot be seen, such as birds and fish. <i>Sounds can be heard more clearly when their source is closer than when they are far away.</i> Demonstrate this practically by closely jingling bells or shaking the tambourine close to the students, and then sending a child outside to play it again with the classroom door closed. <i>When was the sound louder?</i>
30 mins	Main Lesson: Read pages 90–92. Do Let's Find Out for Ourselves. [Precaution: Be careful with glass bottles. Collect them for disposal once the activity is over.] Complete exercises 1, 2, and 3 in class.
5 mins	Recap: Review the important points of the lesson. Clarify that 'noises' are also 'sounds' but that 'noise' usually refers to unpleasant sound.
	Safety: <ol style="list-style-type: none">1. Warn children it is dangerous to put objects into their ears (unless specially designed e.g. earplugs) and they must never insert anything inside their ears.2. Warn children loud sounds can be harmful and can cause permanent damage to their hearing.
	Evaluation: The students may be evaluated by giving them the following exercise to complete:



Look at the pictures below. Choose one word which describes the sound each thing makes. Remember to colour the pictures.



Answers

Exercise 1

Answers may vary. Some examples:

1. salt shaker, rattle (toy)
2. guitar, sitar
3. drum, door
4. harmonica (mouth organ), trumpet

Exercise 2

- a) sounds
- b) siren
- c) families
- d) plucking, hitting
- e) sound, direction

Exercise 3

- a) false
- b) true
- c) false
- d) false
- e) false



Unit 8 Chapter 13

Earth and sky



Objectives	By the end of the chapter, students should be able to: <ul style="list-style-type: none"> • learn and understand about the Earth and other planets • learn about the Sun, Moon and stars • understand the phases of moon
Vocabulary Bank	Sun, Moon, star, planet, hot, light, bright, deserts, mountains, valley, plains, crescent, quarter, phases, solar system, universe

LESSON 1: 40 mins

5 mins	<p>Warm up: Show a globe to students at start of the chapter. Explain that Earth is shaped like a ball, called a sphere and this is how the earth looks like from space. <i>Do you see more water or land?</i></p> <p><i>There is a lot of water on Earth and less land.</i></p> <p>Ask them if they have seen the sky at night. Ask them look at the sky a day before the lesson. What do you see? Stars and Moon. Can you see them during the day? No, because the Sun shines brightly during the day.</p>
30 mins	<p>Main Lesson: Explain that the Earth is a planet. It has water and oxygen which is why humans and animals can live on it. There are eight planets. Tell them that the Earth is made up of 70% water and 30% land. The 70% consists of oceans, seas, rivers, lakes, streams and the other 30% consists of deserts, mountains, valleys, and plains.</p> <p>[You may need to elaborate on planets slightly without confusing the children. A planet is an object that moves around a star. The Earth moves in a circle around the Sun.]</p>



There are many objects in the sky. We usually see them better at night. What do you see when you look at the sky at night? Ask them to describe the sky using appropriate vocabulary. The moon was shining. The stars were bright. Prompt by asking were they large or small? Were they near or far away?

Explain that stars are very far away from the Earth. That is why they look so small. *Stars are made of very hot gases give off their own light.*

The Sun is also a star. It is hot and bright. Remind the students that they must never ever look at the Sun directly. *Have you ever seen the stars at night?* Explain that we cannot see the stars during the day because the Sun shines so brightly during the day time.

There are stars larger than the Sun, but the Sun is the nearest to the Earth, that is why we can feel its heat and its shining light.

You can demonstrate this with a simple experiment by taking a table lamp and lighting a candle near it. Ask the children if the candle light can be seen easily in the bright lamp light. Now turn the lamp off and try to make the classroom dark. Ask if the candle light appears brighter now. Explain that the lamp is like the Sun, and the candle light like the stars. We cannot see the stars during the day because of the bright Sun, even though they are there in the sky.

5 mins

Recap:

Review the main points discussed in the lesson.

Our planet Earth is shaped like a sphere. It has water and air which we need to survive. There is more water than land on Earth. There are shiny objects in the sky like the stars, Sun and Moon. Stars make their own light. The Sun is the closest star to the Earth.

LESSON 2: 40 mins

5 mins

Warm up:

Review that planets are objects found in space that circle around the Sun. *Earth is a planet. The stars and moon are found in the sky but they are not planets.*

What about the Moon? The Moon shines at night. It is also there during the day but we cannot see it because of the bright light from the Sun.



30 mins

Main Lesson:

Continue the discussion by explaining that the Moon is not a planet. It moves around the Earth and not the Sun.

Ask students about the shape of the Moon. Ask a few students to come up and draw the shape of the moon on the board. Some may draw a crescent and some a full moon. *Why does it keep on changing?*

Now explain the phases of the Moon. *Stars produce their own light. The Moon does not produce its own light but reflects the light of the Sun.*

What we see when the Moon shines is sunlight reflected off the Moon.

The phase of the Moon is how much of the moon appears to us on Earth to be lit up by the Sun. As the Moon orbits or circles the Earth, the phase changes several times during the month.

An activity can be planned by taking 8 'children planets' and making them stand in an oval. After that make a child stand in the middle of the oval. By this activity you can make the children aware of the concept of the solar system, arrangement of planets and their movement around the Sun. A child can also be the Moon to show how it circles the Earth.

Read the chapter and complete all the exercises. Let's Find Out for Ourselves may be discussed in class and the children may find the pictures for their home assignment.

5 mins

Recap:

Summarize the main points of the lesson.

A planet is an object found in space which revolves around the Sun. The Moon is not a planet. The Moon does not make its own light. We can see the Moon's light at night because it reflects light from the Sun. The way the Moon looks during different times of the month is called a phase.

Evaluation:

At the end of the chapter, the worksheet **Earth and Sky** may be given to evaluate the students.

You can also take help from this exercise:

Give a one word answer:

1. How much of the Earth is covered with water?
2. The Earth revolves around which star?
3. How many phases of the Moon you see in a month?
4. What two things Earth has which the other planets do not?
5. What are stars?



Answers

Exercise 1

1. a
2. a
3. c
4. c

Exercise 2

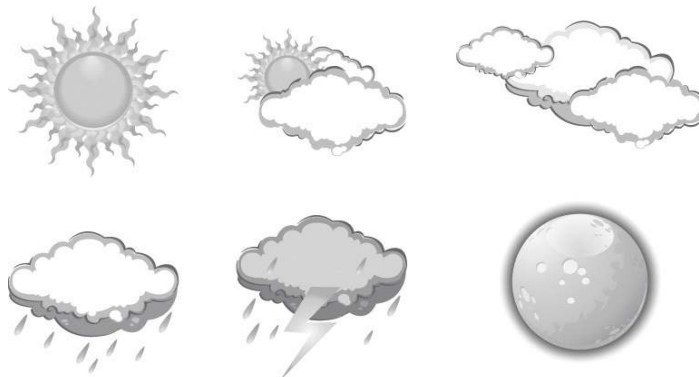
- a) false
- b) true
- c) false
- d) false
- e) true

Exercise 3

- a) oxygen, water
- b) many
- c) do not
- d) Stars are
- e) The Moon



Unit 8 Chapter 14
Weather



Objectives	<p>By the end of the chapter, students should be able to:</p> <ul style="list-style-type: none"> • understand the conditions of weather • identify the four seasons in a year, summer, winter, autumn and spring • acknowledge the monsoon season • identify the instruments to measure different weather conditions
Vocabulary Bank	<p>weather, sunny, windy, hot, foggy, rainy, seasons, spring, summer, autumn/fall, winter, thermometer, wind vane, rainy gauge</p>

LESSON 1: 40 mins

5 mins	<p>Warm up:</p> <ol style="list-style-type: none"> 1. Start the children by asking: <i>How is the weather today? How was it last week?</i> <i>Which season do you think it is?</i> <p>OR</p> <p>You can also switch off the fans and ask the students how they are feeling. If they say they feel hot, ask them which season makes you feel hot? <i>How do you feel in winter? Do you like the rainy season?</i> <i>Why?</i></p>
30 mins	<p>Main Lesson: Read pages 102–104. Discuss the pictures.</p> <p>Explain that the condition of the air and sky over some time is called weather. <i>Weather is what it is like every day.</i></p> <p>The types of weather may be discussed: rain, snow, sunshine, clouds, wind, fog. Show them the images on multimedia if possible.</p> <p><i>The weather remains the same for several months at the same time every year. We call it a season.</i> Although the children must have learnt about the four seasons</p>



in their previous grades, it's better to ask them so that they can recall it easily.

How many seasons are there in a year? Which is your favourite season? Why?

Elicit answers by prompting. *Summer is... (hot). Autumn is... (dry). Winter is... (cold). Spring is sunny and pleasant.*

Repeat the names so that the students understand that the seasons occur in a cycle. It is a good idea to prepare a chart on the softboard for all four seasons, giving them the opportunity to speak to increase their class participation. A pictorial chart can show how the stages through which a tree changes in winter, spring, summer and autumn.

Introduce and explain the monsoon season. *Do you enjoy yourself in the rain during your summer vacations? That is called the monsoon season. Monsoon is the season which occurs after the summer season. It is the season with strong winds and rain.*

Explain that there are special instruments to help us record the weather.

Exercises 1,2, and 3 will be done in class.

Start work on Let's Find Out for Ourselves as a home assignment and check the next day, every day for one week, to help children complete the table for the whole week.

5 mins

Recap:

Review the main seasons and weather types. You can ask which season it is in different months.

December? Winter

September? Autumn

July? Summer

April? Spring

LESSON 2: 40 mins

5 mins

Warm up:

If possible, show the instruments that are used to measure weather in the class. Ask the class why they think it is important to know about the weather conditions. *Who do you think would want to know how the weather conditions will be on a particular day? Why?*



Record their responses and link it with the fact that pilots, drivers, sailors and people going outdoors will need to know what the weather will be like for their safety or to plan their activities. *Drivers, pilots and sailors need to know about fog, storms and winds, snow etc. Why would you want to know about the weather? Will you be able to hold your cricket match or picnic during rain or fog?*

30 mins

Main Lesson:

A lot of interesting activities and class projects may be planned to acquaint the children with the weather, instruments for measurement and knowing its forecast for the day(s).

The students can make the following crafts:

An fun activity may be done where the children prepare a windsock. A windsock is a device for showing the speed and direction of the wind.

Materials required: A coloured sheet of A4 paper, glue or stapler, crepe bunting in different colours, string, clothes peg.

Method: The children will draw or colour the A4 sheet. They can decorate it with stickers.

Then roll the paper up, end to end, and glue or staple it together. Glue the buntings around the bottom inside of the windsock. Punch two holes in the top of the windsock, across from each other. Lead the string through the punched holes, and tie a knot at the end. Hang the windsock with a clothes peg in the classroom. The children can take their windsocks home to see how fast and in which direction the wind blows.



Another activity is the weather mobile.

Materials required: 2 medium-sized bamboo sticks/ clothes hanger, string of different lengths, chart/coloured paper, colour pencils/paints/crayons

Method: Divide the class into groups of 4. Each group will prepare a weather mobile. Two large bamboo sticks will be crossed over one another. A plastic clothes hanger can also be used. Each child in the group will prepare



	<p>one shape representing the weather, e.g. a rain drop, sun, cloud, snow/snowflake, dry orange-brown leaves, bright coloured plants and flowers, a blob of wind (the example in the book may be used), lightening symbol etc. These may be coloured and hung with strings on the sticks. You will need to help them knot the strings.</p>
5 mins	<p>Recap: Ask the children what they would use to measure different weather conditions by giving them different weather situations.</p>
	<p>Evaluation: At the end of the chapter, give the worksheet Weather to evaluate the students. You can also give the following exercise: Give a one word answer:</p> <ol style="list-style-type: none"> 1. In which season do you wear a sweater? 2. In which season do you wear t-shirts and shorts? 3. You use an umbrella when it's....? 4. What do we use to measure temperature?

Answers

Exercise 1

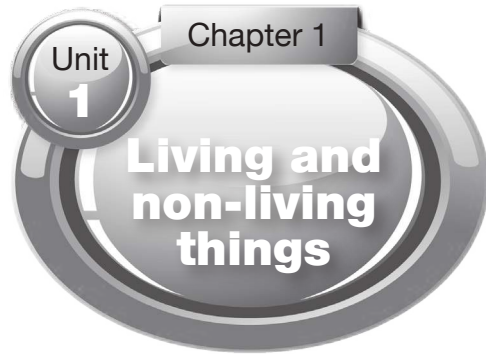
- a) sunny and hot
- b) monsoon
- c) wind vane

Exercise 2

- a) day to day
- b) weather
- c) rain gauge
- d) season
- e) winter
- f) clouds
- g) snow







Name: _____

Class: _____

Date: _____

non-living things

food

water

air

Using the words above, complete the sentences below.

All living things need _____ to drink.

All living things need to eat _____.

_____ cannot move from one place to another.

All living things need _____ to live.

List 5 Living things:

List 5 Non-living things:



Unit 1
Chapter 2
I, me, myself

Name: _____

Class: _____

Date: _____

Draw something you can see, hear, smell, taste and touch:

The drawing area contains five large, empty ovals arranged around a central cluster of five circular icons. The icons represent the five senses: an eye (sight), an ear (hearing), a nose (smell), a tongue (taste), and a hand (touch).



Unit 1
Chapter 3
Growing up

Name: _____

Class: _____

Date: _____

We change as we grow up. Cut and paste the pictures and place them in order showing stages of our growth.



1

2

3

4

5

6



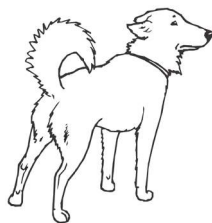
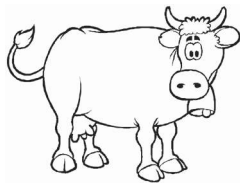
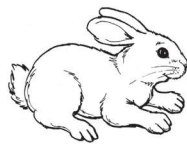
Unit
2
Chapter 4
**Humans
and animals**

Name: _____

Class: _____

Date: _____

Match the animal to the food or drink it takes:



Unit 3 Chapter 5
Plants around us

Name: _____

Class: _____

Date: _____

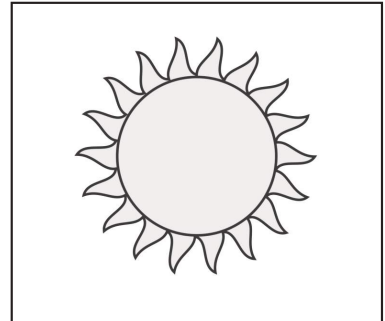
Number the following pictures in the correct order.



1 Get a plant pot.



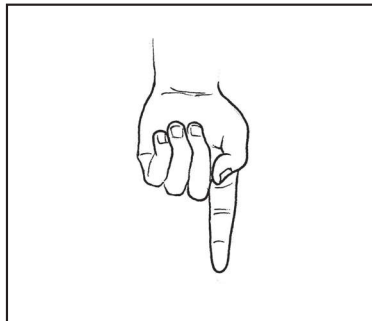
Drop a seed into the hole.



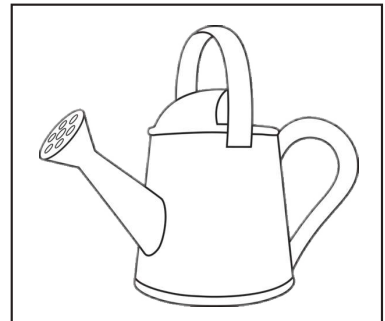
Put the pot somewhere light and warm.



Put some soil into the pot



Make a hole in the soil.



Give the seed some water.

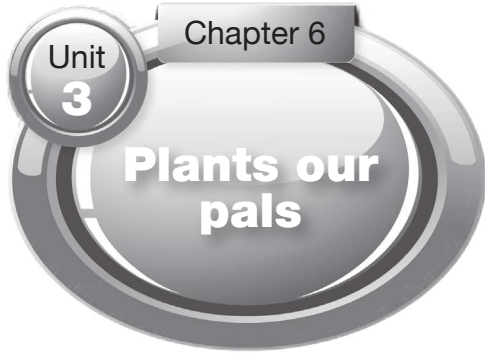


Put a label in your pot



Fill the hole with soil.





Name: _____

Class: _____

Date: _____

Name 5 things made up of wood that you can see inside your class room:

_____	_____
_____	_____

Make a list of 3 flowers that you like the most:

Write few lines on 'A Tree'



Unit 4 Chapter 7
Sorting materials

Name: _____

Class: _____

Date: _____

Draw at least 2 things in your home or classroom that are made from the following materials:

Plastic

Wood

Glass



Unit
4

Chapter 8

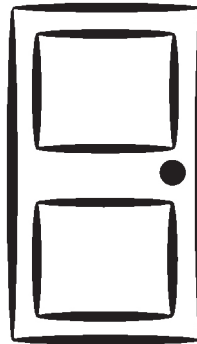
Using materials

Name: _____

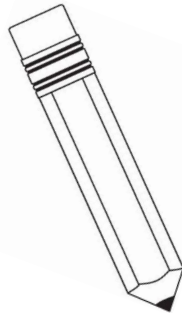
Class: _____

Date: _____

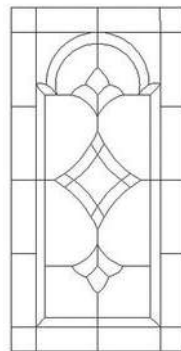
Put a '✓' in front of the materials you think are used in making of the following items:



- Nails
- Glass
- Wood
- Plastic

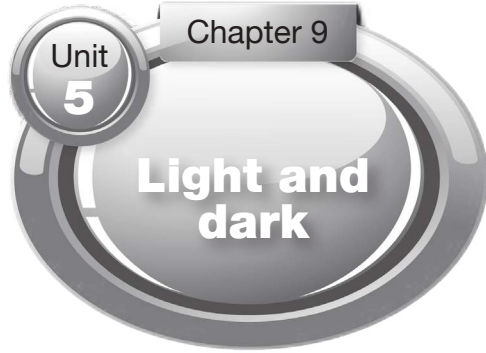


- Plastic
- Lead
- Wood
- Clay



- Wood
- Silk
- Nails
- Glass





Name: _____

Class: _____

Date: _____

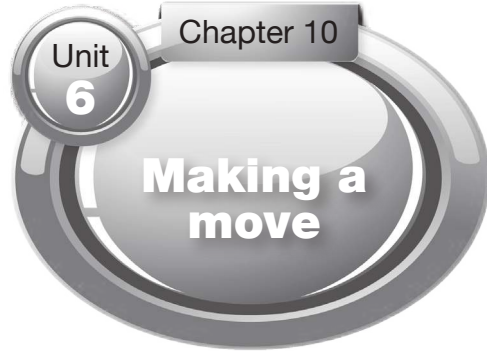
Sun natural see dark artificial

Using the words above, complete the sentences below.

1. When there is no light; we say it is _____.
2. In the presence of light we are able to _____.
3. _____ is the main source of light.
4. Light sources are _____ and _____.

Natural Source		Artificial Source	
1.		1.	
2.		2.	
3.		3.	
4.		4.	





Name: _____

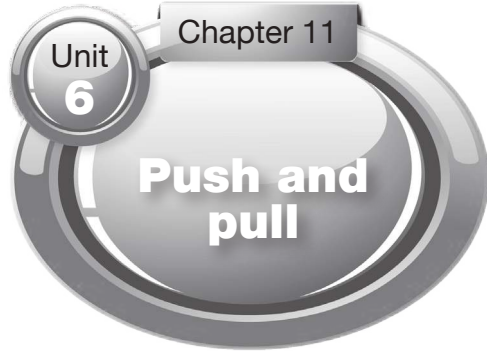
Class: _____

Date: _____

Read the actions and decide whether it is a push or a pull.

- | | |
|--|---|
| 1. Picking apples off a tree.
<input type="checkbox"/> Push
<input type="checkbox"/> Pull | 6. Opening a bag of chips.
<input type="checkbox"/> Push
<input type="checkbox"/> Pull |
| 2. Throwing a ball.
<input type="checkbox"/> Push
<input type="checkbox"/> Pull | 7. Stapling some papers together.
<input type="checkbox"/> Push
<input type="checkbox"/> Pull |
| 3. Using the brakes on a bike.
<input type="checkbox"/> Push
<input type="checkbox"/> Pull | 8. Typing on a computer keyboard.
<input type="checkbox"/> Push
<input type="checkbox"/> Pull |
| 4. Cutting fruits.
<input type="checkbox"/> Push
<input type="checkbox"/> Pull | 9. Putting a pair of trousers on.
<input type="checkbox"/> Push
<input type="checkbox"/> Pull |
| 5. Opening a car door.
<input type="checkbox"/> Push
<input type="checkbox"/> Pull | 10. Scoring a goal in football.
<input type="checkbox"/> Push
<input type="checkbox"/> Pull |





Name: _____

Class: _____

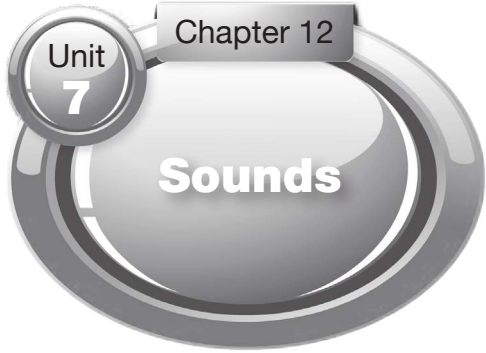
Date: _____

Squashing, bending, twisting and stretching can change the shape of objects.

Will these things change, not change or bounce back?

Materials	Predict- what do you think will happen?	Result
Bag of sand		
Sponge		
Cotton Reel		
Elastic band		





Name: _____

Class: _____

Date: _____

Categorize the following sounds as pleasant or unpleasant sounds:

drumming sirens humming crying singing
drilling truck horns violin music flute

Pleasant Sound	Unpleasant Sound



Earth and
sky

Name: _____

Class: _____

Date: _____

Fill in the missing letters to complete the words.

[Hint: The words can be found on pages 96, 97, and 98.]

1. ___ a ___ t h

5. ___ o ___ n t ___ i ___

2. P ___ a n ___

6. V a ___ e ___

3. O ___ g e ___

7. ___ t ___ r s

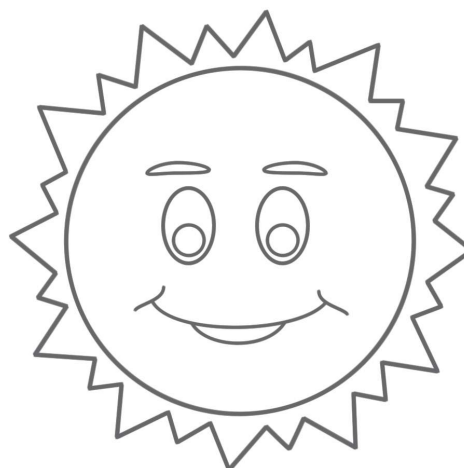
4. D e ___ e ___ t

8. M ___ n

Colour the given picture:



Earth



Sun





Name: _____

Class: _____

Date: _____

thermometer spring four sunny wind-vane
monsoon rain-gauge

Using the words above, complete the sentences below.

1. There are _____ seasons in a year.
2. The weather is _____ during summer.
3. We can see new flowers and new leaves growing in the _____ season.
4. The rainy season after summer is called _____ season.
5. A _____ measures temperature.
6. A _____ measures how much rain falls.
7. A _____ shows the direction of wind.



