

Voyager TEACHER
MANUAL

Voyager

**GENERAL SCIENCE
GRADE 4**

TEACHER MANUAL

THE **HONEYCOMB**
SERIES


GREYCAPS
LEADING A LEARNING REVOLUTION

Welcome

WELCOME DEAR TEACHER,

It is always wonderful to interact with teachers who are directly connected to the development of children in various fields of study, in their school life.

General Science is a subject which gives a peek into the world we live in, to a child. Voyager's interactive storytelling format and amusing characters give life to the topics and at the same time, enhance the learning process.

We, at Greycaps, appreciate the time and effort you are giving to this series and are being part of a future in interactive learning.

P.ick B. Lin

Voyager

What's in it?

How will
this manual
help?

This manual is designed to help you, the teacher, to understand:

- 1. The objective & offerings of the book*
- 2. The content structure and format*
- 3. Teacher inputs that enhance the student experience month-on-month*
- 4. The benefits to the teacher and student*
- 5. Answers to various exercises*
- 6. The measurable take away*

Honeycomb series

About Voyager

Meet Buzz and Rocky

Structure & Framework

Features

Objectives of Voyager 4

Chapter summaries (incl. exercise answers)

Evaluation

Benefits

The sections
you will find...

Honeycomb Series

We, at Greycaps, are proud to present a textbook series with a difference which enhances the teaching and learning experience.

The Philosophy

The honeybee is an intriguing creature in the animal kingdom. Its characteristics reflect being adaptable, agile, well-organised, creating synergy and working in harmony. It's sole purpose is to create the honeycomb and strive for perfection in creating each hexagonal cell in the honeycomb. The queen Bee gathers the efforts of all the honeybees and motivates them to strive for perfection.

We believe that this life skill can be borrowed from nature and applied into the school classroom.



Every teacher is like the **queen bee** – focussing on students' different capabilities and striving to attain harmony within the classroom.

Each student is like a **honeybee** – focussing on better learning and perfection.

This novel philosophy, initiated by Greycaps, is the cornerstone by which we create engaging material for our young learners.



Honeycomb Series

OBJECTIVES

CO-EXISTENCE IS THE KEY

Learning is a collective effort and not an individual effort. Group learning enhances better understanding and decreases dissonance among students.

INTEGRATION ON LIFE SKILLS INTO TEACHING METHODOLOGIES

Learning takes place in every walk of life – from taking our first steps to a person landing on the Moon. Learning's from life skills is, perhaps, the most essential part of overall student development.

BRIDGING THE GAP

Students in a classroom learn at different levels, therefore, there is a need for the teacher, to adopt various innovative methods to bridge gaps between the understanding levels of the first child and the last child.

About Voyager

Voyager

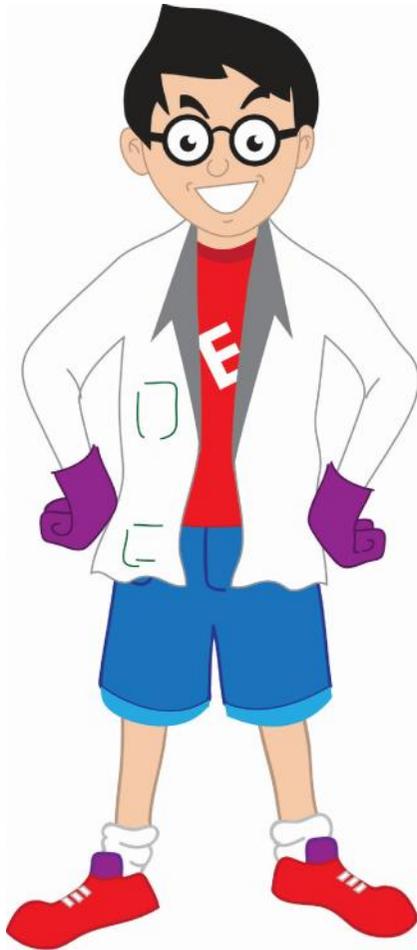
GENERAL SCIENCE



The world of science is constantly evolving in the world we live in. New experiments, new inventions and new discoveries change the face of science on a regular basis. Voyager is a book that enables young learners to capture how science has helped the human race from time immemorial.

Equipped with a storytelling format, it is tailored to be generationally relevant to children of this era. Engaging students through a storyline, Voyager is a relaxed, fun way to learn the basics of general science and to get acquainted with changes and advancements in the field of science.

Hello!



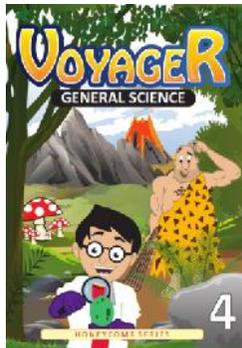
Meet Buzz, a young boy who enjoys conducting experiments of his own. He happens to build a time machine and travel back in time. He stumbles upon Rocky, the caveman, and strikes a friendship with him.

Buzz's journey is chronicled in Voyager. In essence, science is a subject which constantly evolves with new discoveries and experiments. It is in this spirit that the Voyager Series has been created.



Structure & Framework

Student



TEXTBOOK
Equipped with a storytelling format and many other exciting features.

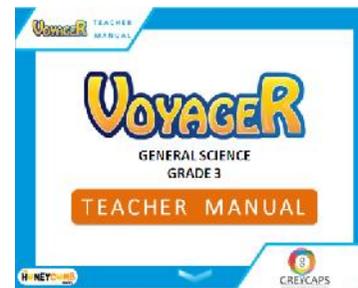


EVALUATION
Assessments sheets provided online for teachers to evaluate students.

Teacher



CURIOSITY KIT
An aid provided for teachers to reinforce concepts through quizzes and other activities.



TEACHER MANUAL
Provided online to act as a guide for teachers.

IN THE TEXTBOOK

Features



The creation of characters brings concepts to life and enables better learning.

Interactive exercise formats at the end of each chapter, which follows the concept of learning by teaching.



Activity based learning becomes an integral part of overall child development.



FACT HOPPER

Interesting trivia based information that enhances knowledge.

IN THE CURIOSITY KIT

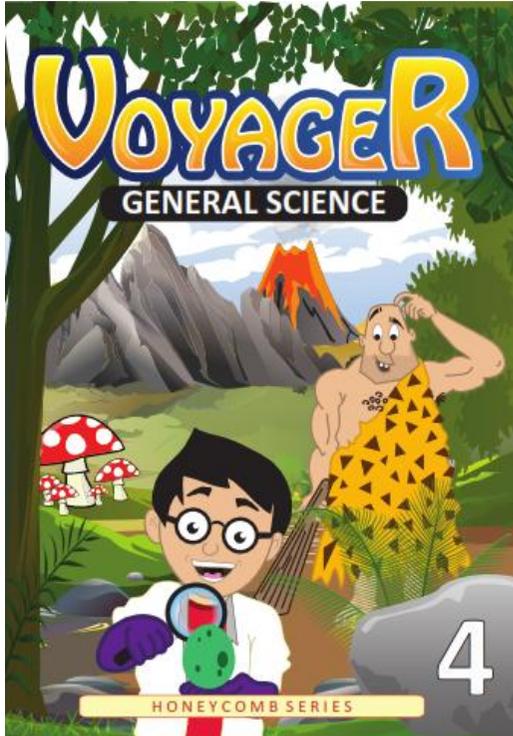
Features

The **Curiosity Kit** is designed to reinforce teaching material in a fun and innovative way for school students. It is a set of activities and games which will enable teachers to create a fun-filled atmosphere in the classroom. It ensures wholesome learning and easier recall of facts related to the subject at hand.



- 🔍 The Voyager Grade 4 kit contains 54 cards.
- 🔍 The cards are divided into chapters in tandem with the textbook and are colour coded.
- 🔍 Each chapter contains activities with a set of instructions for the teachers and enumerates how it will be beneficial for the students.

Objectives of Voyager 4



Voyager 4 continues with understanding surroundings and how we interact with them. Students will be acquainted with their immediate environment and then progress towards understanding the world at large.

The objectives of Voyager 4 are as follows:-

- Sparking curiosity (new topics)
- Enlisting the assistance of narrative learning
- Encouraging learning by teaching
- Encouraging learning through activities

Chapter Summaries

HOW PLANTS MAKE THEIR
FOOD

SAFETY AND CLOTHING

ANIMAL LIFE

OUR UNIVERSE

FOOD AND THE HUMAN
BODY

MATTER AND FORCE



HOW PLANTS MAKE THEIR FOOD

- 1 How Plants Make their Food**

The chapter explains the basics of the process by which plants make food, by explaining the structure of a leaf, the process of photosynthesis, how plants use their food, etc. The chapter also elaborates upon the plants which cannot make their own food and the ways in which plants are beneficial to us.
- 2 Adaptations in Plants**

Adaptation is necessary for survival. This chapter discusses the various adaptations in plants based on regions and weather conditions. The chapter also introduces new concepts such as floating plants, etc.

HOW PLANTS MAKE THEIR FOOD

1

How Plants make
their Food

Answers

**DO
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- (i) – Plants prepare abundant food during summer and store them in different parts of the plant like stem, roots, etc. During winter, the plants shed their leaves but the stem and root is alive. The plant survives on the stored food during winter.
- (ii) – During winter, the stored food in the leaves is consumed by the plants, leading to a breakdown of chlorophyll. When the chlorophyll disappears from the leaves, the other pigments appear making it look red or yellow.



Page
11

- 1) Answer the following in your notebook.
- a. Plants requires water, sunlight, carbon dioxide and chlorophyll for

the process of photosynthesis.
b. The process of making food in plants is called photosynthesis. The

* These answers may be unique to each student. Teachers may also get an assortment of responses from students based on what they have learnt from the chapter.

HOW PLANTS MAKE THEIR FOOD

1

How Plants make
their Food

Answers



Page
11 & 12

plant prepares its own food with the help of sunlight, water, carbon dioxide and chlorophyll. Chlorophyll absorbs energy from sunlight and mixes with carbon dioxide and water, to prepare a type of sugar called glucose. This glucose is stored in the stem, roots, fruits and seeds as starch. Oxygen is produced as a waste product at the end of this process.

c. The different parts of the leaves are:-

i) Chlorophyll – This pigment, present in leaves, gives a green colour to

- ii) the plant.
- iii) Leaf blade – Flat part of the leaf.
- iv) Mid vein – Thin tube running in the middle of the leaf that helps in carrying water and minerals from roots to the leaves and carry back the prepared food.
- v) Side veins – Tiny veins emerging from mid veins which transport water and minerals to different parts of the leaf.
- vi) Leaf apex – The tip of the leaf.
- Stomata – Small pores present on the lower side of the leaf. During photosynthesis, carbon dioxide enters

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HOW PLANTS MAKE THEIR FOOD

1

How Plants make
their Food

Answers



Page
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through these pores and oxygen is given out.

d. The sugar or glucose prepared by the plant is used for different things such as:-

- i) To prepare new cells, and repair and replace the old ones.
- ii) To produce energy for growth. To produce flowers, fruits, seeds and leaves.
- iii) To store food in different parts of the plant such as roots, stem, leaves, fruits and seeds.

e. Plants play an important role in the conservation of the environment and help to maintain the balance in nature. They help in keeping the environment free from poisonous gases, which make the air around us unfit for breathing. They provide a habitat for animals to live in. Plants hold the soil, thus, preventing soil erosion.

f. Plants are important for our survival in the following ways:-

- i) When we eat fruits, vegetables,

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HOW PLANTS MAKE THEIR FOOD

1

How Plants make
their Food

Answers



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- nuts, etc, we eat the food prepared by plants. The energy that is stored in these plants is passed into our body which helps us to work.
- ii) Plants give out oxygen, which is essential for the survival of all animals.
 - iii) Plants also provide food for the animals.
 - iv) Some plants give us products like gum, rubber, resin, etc.
 - v) The wood from the trees is used to make paper and furniture. Some
- leaves and stems are used to make baskets and furniture.
- vi) Many plants are used to make medicines.
 - vii) The dead and decayed part of the plants are used to make compost, which is used as a natural fertiliser.
- 2) State whether true or false.
- a. True
 - b. True
 - c. False
 - d. False
 - e. False

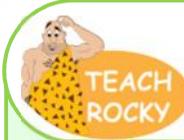
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HOW PLANTS MAKE THEIR FOOD

1

How Plants make
their Food

Answers

Page
11 & 12

- 3) Fill in the blanks.
- Photosynthesis
 - Oxygen
 - Mid vein
 - Carbon dioxide
 - Stomata

- 4) Choose the right answer.
- Glucose and oxygen
 - Green
 - Food
 - Stem
 - Both

* These answers may be unique to each student. Teachers may also get an assortment of responses from students based on what they have learnt from the chapter.

HOW PLANTS MAKE THEIR FOOD

2 Adaptations in plants

(Answers)

**DO
THIS** Page
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The aquatic plants have adapted to living in the water. Unlike human beings, who are terrestrial animals, the surface of aquatic plants contains cuticles, which helps in absorption of water in plants. There are air spaces in stems and leaves that allow it to stay afloat.

 **Page
19**

1) Complete this mind map about various adaptations in plants.

- a. Deserts
Stem – thick stem used to store food and water

Leaves - reduced to spines, to prevent the loss of water

Roots - spread out wide and deep, to absorb as much water as possible

* These answers may be unique to each student. Teachers may also get an assortment of responses from students based on what they have learnt from the chapter.

HOW PLANTS MAKE THEIR FOOD

2 Adaptations in plants

Answers



Page
19 & 20

b. Mangrove

Stem -

Leaves – adapted to salty water

Roots – special roots called stilt roots, coming out of the soil can be seen.

These take in air directly from the atmosphere

c. Coastal regions

Stem – sturdy barks to withstand winds

Leaves – thick and bear long stripes to tolerate the winds

Roots – long roots which firmly anchor the tree.

d. Aquatic

Stem – have air spaces that allow them to float

Leaves – have air spaces that allow them to float

Roots – roots are either attached to the bottom of the ponds, or stay afloat

2. Fill in the blanks.

- | | |
|---------------------|---------------------|
| a. Habitat | d. Stilt roots |
| b. Cactus | e. Submerged plants |
| c. Palm and coconut | |

* These answers may be unique to each student. Teachers may also get an assortment of responses from students based on what they have learnt from the chapter.

HOW PLANTS MAKE THEIR FOOD

2 Adaptations in plants

(Answers)



Page
19 & 20

3) Choose the right answer.

- a. Parasitic plant
- b. Underwater plants
- c. Come out of the soil to take in air
- d. Transpiration
- e. Stem

4) Give one example of each.

- a. Lotus
- b. Conifers
- c. Pitcher plant/Venus Fly trap/Sundew plant
- d. Mushroom
- e. Dodder/Mistletoe

* These answers may be unique to each student. Teachers may also get an assortment of responses from students based on what they have learnt from the chapter.

ANIMAL LIFE

3

Adaptations in Animals

Similar to plants, animals too need to adapt for survival. The chapter gives a brief explanation of the types of adaptation that have taken place in different kinds of animals. The chapter also explains adaptations based on environment, food, defence, etc.

4

Reproduction in Animals

Reproduction is the process by which life cycle continues. Children need to understand this concept in context of their surroundings, which means understanding reproduction in animals. Reproduction in mammals as well as animals that lay eggs, life cycles of birds and insects, are a few concepts that are discussed in the chapter.

ANIMAL LIFE

3

Adaptation in Animals

Answers

DO Page
THIS 24 & 28

Snakes hear with the help of their jaws, as they have no external ears while they smell with the two nostrils, as well as with their forked tongue, which also helps in tasting. This is not the case with other animals, as they have a nose to smell, ears to hear and tongue to taste.

Animals like tigers live in the woods, which allows them to blend in with their surroundings. Butterflies and honeybees are found on bright and colourful flowers and hence, their body pattern and colour are bright. Snakes live in forests and hence, are usually green, black or brown in colour.

* These answers may be unique to each student. Teachers may also get an assortment of responses from students based on what they have learnt from the chapter.

ANIMAL LIFE

3

Adaptation in Animals

Answers



Page
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1) Choose the right answer.

- a. Helps an organism survive in its environment
- b. Stems store water
- c. The animal's environment
- d. To blend with the surroundings
- e. They develop lungs and limbs

2) Answer the following questions in your notebook.

- a. Some animals merge with their surroundings, making it difficult for enemies to notice them easily.

This is known as camouflage. It is important in animals as they need to protect themselves from their enemies.

- b. Animals living in cold places cannot survive due to shortage of food. Hence, they either migrate or hibernate. Some animals move to warmer places where the climate is favourable and where there is availability of food. They travel back home when winter ends. This movement of animals from one place to another is called migration.

* These answers may be unique to each student. Teachers may also get an assortment of responses from students based on what they have learnt from the chapter.

ANIMAL LIFE

3

Adaptation in Animals

Answers



Page
30 & 31

Many animals go to sleep for a long period of time during the winters. they spend most of their time in underground caves or burrows. These animals eat a lot during summer and their bodies store the extra food as fat for the winter months, when food is scarce. This is called hibernation.

c. i) Arboreal animals – Animals that live on land and spend a lot of time on trees. E.g. monkeys, squirrels, etc.

- ii) Aerial animals – Animals that fly with the help of their wings. E.g. birds, bats, insects, etc.
- iii) Omnivores – Animals that eat both plants and animals. E.g. bears, crows, etc.
- iv) Aestivation – Some animals go to sleep in the long summer months. This is known as summer sleep or aestivation. E.g. crocodiles, lungfish, etc.
- v) Amphibians – Animals that live both on land and water. E.g. frog, salamander, etc.

* These answers may be unique to each student. Teachers may also get an assortment of responses from students based on what they have learnt from the chapter.

ANIMAL LIFE

3

Adaptation in Animals

Answers



Page
30 & 31

d. There has been a continuous change in the habitat and hence, animals need to adapt to these changes. They physically adapt themselves to their surroundings over time. Animals that aren't able to adapt to these changes die out slowly and become extinct. Dodo birds and Dinosaurs are two animals that have become extinct.

e. Animals that are not far from becoming extinct are called endangered animals. Certain human activities like deforestation, have led to the loss of animal habitat. As a result, animals are unable to adapt to the new surroundings and hence, die. Rhinos, Indian lion, African elephants, Arabian Oryx, etc. are some endangered animals.

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ANIMAL LIFE

3 Adaptation in Animals

Answers



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3) Match the name of the animal, with the statement on how it defends itself.

- a. Good sense of smell and hearing, sharp hooves and horns
 - b. Shell, pinching claws
 - c. Has a white coat which matches the snow
 - d. Has a painful sting
 - e. Changes its colour
- Chameleon
 - Deer
 - Tortoise
 - Polar bear
 - Honeybee
-

* These answers may be unique to each student. Teachers may also get an assortment of responses from students based on what they have learnt from the chapter.

ANIMAL LIFE

3 Adaptation in Animals

Answers



**Page
30 & 31**

4) Name one adaptation of body covering or body part, that helps these animals to survive in their environment.

Animal	Body Covering	Body Part to get food for survival
a. Snake	Scales	Forked tongue, Entire body
b. Fish	Scales that are waterproof	Nostrils, mouth
c. Camel	Long eyelashes, nostrils	Large hump to store water
d. Eagle	Strong feathers	Sharp eyesight
e. Duck	Webbed feet	Beaks used to detect food, grab and swallow

* These answers may be unique to each student. Teachers may also get an assortment of responses from students based on what they have learnt from the chapter.

ANIMAL LIFE

4

Reproduction in Animals

(Answers)



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- 1) What am I?
 - a. Kangaroo
 - b. Tadpole
 - c. Caterpillar (larvae)
 - d. Platypus
 - e. Bat
- 2) Answer the following in your notebook.
 - a. Insects lay eggs which go through stages of development, before they become an insect. For e.g. butterflies lay eggs which turn into a

caterpillar, then a pupa and later, become a butterfly. Insects like cockroaches lay eggs which develop into a nymph and then become adult cockroaches.

b. A butterfly lays its eggs on leaves. When they hatch, caterpillars (larvae) come out. The caterpillar feeds on leaves and quickly grows in size. It then makes a cover for itself, which is called the cocoon. Here, the caterpillar grows into a butterfly. This stage is called pupa. After a few days, the cocoon breaks open and the butterfly comes out.

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ANIMAL LIFE

4

Reproduction in Animals

Answers



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- c. Mammals give birth to babies. In mammals, the babies grow inside the body of a mother. When babies are born, they cannot take care of themselves. The mother feeds them with her milk and cares for them until they are able to take care of themselves.
- d. Frogs lay a large number of eggs in lakes and ponds. These are jelly-like and the egg clusters are called spawns. The young ones which hatch out of these eggs, are called tadpoles.
- e. They do not have legs and swim with the help of fins. They have gills for breathing underwater. After two months, limbs and legs appear, the feeding habits change and the tadpoles turn into adult frogs. This process is called **metamorphosis**.
- e. The egg contains a yellow liquid called the yolk, which has a dark portion called embryo. A white, watery substance called the albumen surrounds the yolk and provides the embryo with water.

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ANIMAL LIFE

4

Reproduction in Animals

Answers

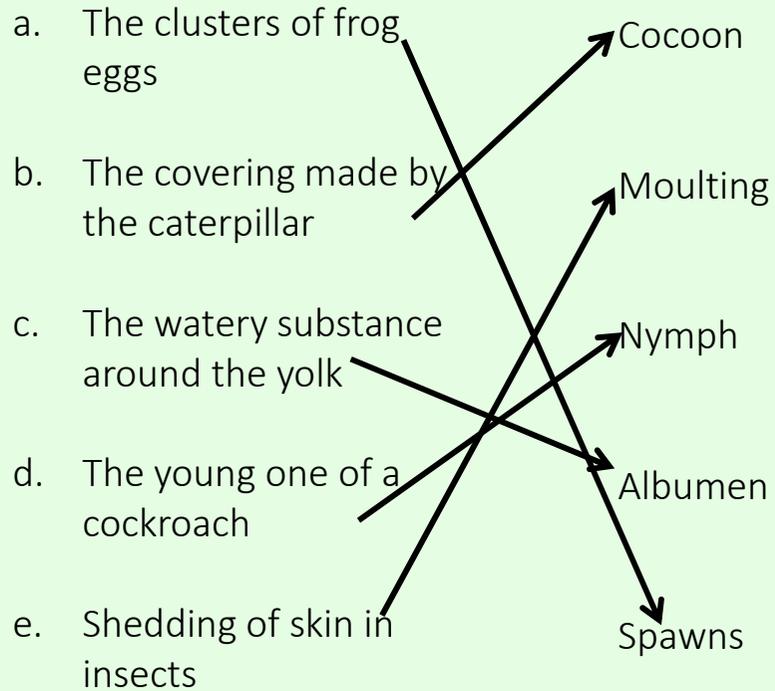


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3) State whether true or false.

- a. True
- b. False
- c. True
- d. False
- e. False

4) Match the right words to the descriptions given.



* These answers may be unique to each student. Teachers may also get an assortment of responses from students based on what they have learnt from the chapter.

FOOD AND THE HUMAN BODY

- 5 Food and Digestion**
The chapter sheds light upon the different types of nutrients that we get from food, the importance of a balanced diet, detailed explanation of the process of digestion, cooking and good eating habits.
- 6 Teeth**
The chapter brings to the fore, differences between temporary and permanent teeth, the various types of teeth, structure of a tooth, etc. It also explains in brief, dental problems and how to take care of one's teeth.
- 7 Microbes**
We are surrounded by microorganisms not visible to us. Children need to understand the presence, advantages and disadvantages of these microorganisms. The chapter lists the types of microbes and how they may cause harm. Also mentioned in the chapter, is the usefulness of certain microbes.

FOOD AND THE HUMAN BODY

5

Food and Digestion

Answers

**DO
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The dinner can include anything like chapati, rice, dal, curry, curds, chicken, fish, etc.



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1) Answer the following in your notebook.

a. The nutrients required for the body are:-

- i) Carbohydrates – Rice, potato
- ii) Fats – Ghee, oils
- iii) Proteins – Cheese, fish

- vi) Vitamins – Fruits, vegetables
- v) Minerals – Milk, nuts
- b. A diet which provides us with all the nutrients required by the body, is a balanced diet.
- c. A process by which food is broken down into substances that can be easily absorbed by blood, is called digestion.

* These answers may be unique to each student. Teachers may also get an assortment of responses from students based on what they have learnt from the chapter.

FOOD AND THE HUMAN BODY

5

Food and Digestion

Answers



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- i) The process of digestion begins in the mouth.
 - ii) The front teeth break the food into small pieces and the back teeth grind it into a fine paste.
 - iii) The saliva present in the mouth softens the food and breaks down the starch into simple substances. Saliva is a special juice made by the salivary glands.
 - iv) The tongue then pushes the food down the food pipe. This process is called swallowing.
- d.
- i) From the stomach, the food goes into the small intestine.
 - ii) The liver produces a special juice called bile and the pancreas also produce digestive juices. These juices also flow into the small intestine.
 - iii) These juices break down the food into simpler substances. They digest the carbohydrates, fats and proteins present in the food.
 - iv) These nutrients are in a liquid form, which are absorbed by blood vessels and sent to different parts of the body.

* These answers may be unique to each student. Teachers may also get an assortment of responses from students based on what they have learnt from the chapter.

FOOD AND THE HUMAN BODY

5

Food and Digestion

Answers



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- v) The undigested food enters the large intestine.
- e. i) Cooking makes food easy to digest and tasty.
- ii) It also kills germs, which could cause diseases if they enter the body.
- f. Good eating habits are as follows:-
- i) We need to eat food that contains a balanced diet. Too much of fried foods and sweets can cause indigestion.
- ii) Chewing food well is important for digestion.
- iii) Do not talk while you eat.
- iv) Have food at regular intervals.
- v) Sit down and eat a relaxed meal.
- vi) Eat clean food with clean hands.
- vii) Rinse your mouth before and after eating.
2. Answer the following with the help of the clues given.
- | | |
|----------|------------|
| a. Apple | d. Oranges |
| b. Bread | e. Milk |
| c. Egg | f. Cheese |

* These answers may be unique to each student. Teachers may also get an assortment of responses from students based on what they have learnt from the chapter.

FOOD AND THE HUMAN BODY

5

Food and Digestion

Answers



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3. In the space given, name the nutrients that are present in the food items mentioned below.
- Vitamins, minerals, fibre
 - Fats, vitamins, minerals, carbohydrates, protein
 - Vitamins, minerals, carbohydrates
 - Proteins, vitamins, carbohydrate, minerals, fats
 - Fats, proteins, vitamins
 - Fats, minerals, proteins
4. Choose the right answer.
- The body's food-processing system
 - The saliva changes some of the starch in the food to sugar
 - Juices mix with the food and the stomach squeezes it
 - It is absorbed into the blood through blood vessels
 - Mouth, food pipe, stomach, small intestine, large intestine and rectum

* These answers may be unique to each student. Teachers may also get an assortment of responses from students based on what they have learnt from the chapter.

FOOD AND THE HUMAN BODY

6 Teeth

Answers



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1) Unscramble these terms.

- | | |
|-----------|-------------|
| a. Decay | f. Floss |
| b. Enamel | g. Fluoride |
| c. Smile | h. Plaque |
| d. Cavity | i. Rinse |
| e. Chew | j. Molar |

2) Choose the right answer.

- a. Talk
- b. Crown
- c. Enamel
- d. Pulp

3) Fill in the blanks.

- a. Cementum
- b. Plaque
- c. Enamel
- d. Fluoride
- e. Teeth

4) Answer the following questions in your notebook.

- a. Teeth help in cutting and grinding the food. They also help us speak clearly and look good.

* These answers may be unique to each student. Teachers may also get an assortment of responses from students based on what they have learnt from the chapter.

FOOD AND THE HUMAN BODY

6 Teeth

Answers



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- b. Each tooth is attached to the jaw bone with the help of roots. A bone-like structure called the cementum, fixes each tooth firmly to the jawbone. The part of the tooth that is visible and not covered by gum, is called crown. The crown of each tooth is covered with a shiny substance called enamel, which is the hardest substance in the body. Below the enamel is a layer of dentine, which protects the innermost part of the
- c. The different types of teeth are:-
- i) Incisors – they have flat ends that help in cutting and chopping of the food.
 - ii) Canines – they have sharp, pointed edges that help in tearing the food.
 - iii) Molars and pre-molars – they are flat, broad teeth which crush and grind the food.
 - d. When we eat, small bits of food get stuck between the teeth. This food gets spoilt in the presence of germs
- tooth, called the pulp.

* These answers may be unique to each student. Teachers may also get an assortment of responses from students based on what they have learnt from the chapter.

FOOD AND THE HUMAN BODY

6 Teeth

Answers



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50 & 51

and bacteria in the mouth, thus causing cavities. Over time, these cavities get bigger and when the bacteria reach the pulp, the tooth hurts. This is called tooth decay.

- d. We can take care of our teeth in the following ways:- (Choose any three)
- i) We should brush twice a day and also clean our tongue.
 - ii) Rinse our mouth after eating.

- iii) We should not eat too many sweets and chocolates.
- iv) We should use toothpaste with fluoride as it helps in removing plaque.
- v) We should use dental floss occasionally to clean between the teeth.
- vi) We should eat food that is rich in vitamins and minerals.

* These answers may be unique to each student. Teachers may also get an assortment of responses from students based on what they have learnt from the chapter.

FOOD AND THE HUMAN BODY

7 Microbes

Answers



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- 1) Answer the following questions in your notebook.
- a. Tiny organisms, which are not visible to the naked eye and can be seen only with the help of microscope are called microbes.
 - b. Microbes are seen with the help of an instrument called microscope.
 - c. The four types of microbes are:-
 - i) Bacteria
 - ii) Virus
 - iii) Protozoa
 - iv) Fungi
 - d. Typhoid, tuberculosis and pneumonia are caused due to bacteria.
 - e. The uses of microbes are:-
 - i) Some bacteria help change milk into curd.
 - ii) Some bacteria convert the dead and decaying matter into manure, which is used as fertiliser.
 - iii) Yeast is a fungus used to make bread soft and spongy.
 - iv) Some bacteria help in digesting food.

* These answers may be unique to each student. Teachers may also get an assortment of responses from students based on what they have learnt from the chapter.

FOOD AND THE HUMAN BODY

7 Microbes

(Answers)



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- v) Some bacteria help in producing vitamins in the human body.
- 2) Fill in the blanks.
- Microbes
 - Yeast
 - Typhoid / Tuberculosis / Pneumonia
 - Virus

* These answers may be unique to each student. Teachers may also get an assortment of responses from students based on what they have learnt from the chapter.

SAFETY AND CLOTHING

- 8 Keeping Safe**

Safety is another important aspect that needs to be taught and built into the children's minds from a young age. The chapter discusses various safety measures that need to be followed at various locations, the concept of first aid and how to use it correctly.
- 9 Clothes we wear**

Clothing is a part of our everyday lives. The chapter provides a brief on the different type of clothes worn in different seasons, the materials these clothes are made of and how to take care of clothes.

SAFETY AND CLOTHING

8 Keeping Safe

Answers

**DO
THIS** Page
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- i) When the person faints:- Loosen any tight clothing around the person, like a tie, dupatta, first button of shirt, etc. Sprinkle some water on his/her face. Slowly lift the person by his/her legs to ensure the blood flow to the brain.
- ii) In case of a dog bite:- Clean the wound immediately and run it under water for a few minutes. Squeeze the wound slightly, to allow bleeding as this will help germs which entered the body due to the bite, come out. Take the victim to the doctor immediately, as he/she may need some injections.
- iii) In case of snake bites:- Tie a piece of cloth a few centimetres above the bite, tightly. Make a small cut above the bite, to let the poisoned blood flow out. Take the victim to the doctor immediately.

* These answers may be unique to each student. Teachers may also get an assortment of responses from students based on what they have learnt from the chapter.

SAFETY AND CLOTHING

8 Keeping Safe

Answers



Page 59 & 60

1) Which of the following pictures are safe and which are not?

x	✓	✓	x
x	✓	✓	x
x	✓	x	✓

2) Answer the following.

a. Any event that occurs suddenly, causing damage and injury, is called an accident.

- b. The immediate treatment given to an injured person before the medical help arrives, is called first aid.
- c. Antiseptic kills the germs and prevents infection. Hence, it is kept in all first aid boxes.
- d. We need to follow some rules while on the road. They are:-
- i) Always use the footpath while walking. If not, walk on the extreme left side of the road.

* These answers may be unique to each student. Teachers may also get an assortment of responses from students based on what they have learnt from the chapter.

SAFETY AND CLOTHING

8 Keeping Safe

Answers



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59 & 60

- ii) Cross only at zebra crossing. If not, look left, look right and then left again, and cross when the road is clear.
- iii) When the signal for pedestrians, changes to red, the pedestrians should stop walking.
- iv) When on a cycle, always use the left side of the road.
- v) Be careful at crossroads and turnings.
- vi) Always wear the seatbelt while seated in a car.
- vii) Always obey the traffic policemen and the traffic signal.
- e. i) In case of burns – Place the victims hand under cold, running water. In case of blisters, cover it with a dry, clean bandage.
- ii) When a person faints – Make the person lie down. The head should be lower than the body, so that the brain gets extra blood supply and oxygen. Do not crowd around the person and ensure that there is fresh air around him/her.

* These answers may be unique to each student. Teachers may also get an assortment of responses from students based on what they have learnt from the chapter.

SAFETY AND CLOTHING

8

Keeping Safe

(Answers)



Page
59 & 60

3) Fill in the blanks.

- a. First Aid
- b. Zebra
- c. Green
- d. Left
- e. Calamine

4) State whether true or false.

- a. False
- b. True
- c. True
- d. False
- e. False

* These answers may be unique to each student. Teachers may also get an assortment of responses from students based on what they have learnt from the chapter.

SAFETY AND CLOTHING

9 Clothes we wear

(Answers)

**DO
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People in snowy areas wear thick, woollen clothes. They wear light, synthetic clothes inside and wear one or two woollen sweaters or thick jackets, over the other clothes. They also wear muffler, woollen caps and woollen gloves or mittens. Thick boots are worn that help them walk in the snow. Some people prefer to wear thermal wear.

Doctor, policeman, nurse, lawyer and pilot. People wear certain uniforms to identify themselves with their professions. It also helps common people identify people's profession by their uniform and seek help. For e.g. in case you find a person driving rashly on the road, you identify a traffic policeman from the uniform that he wears and inform him about the rash driver.

* These answers may be unique to each student. Teachers may also get an assortment of responses from students based on what they have learnt from the chapter.

SAFETY AND CLOTHING

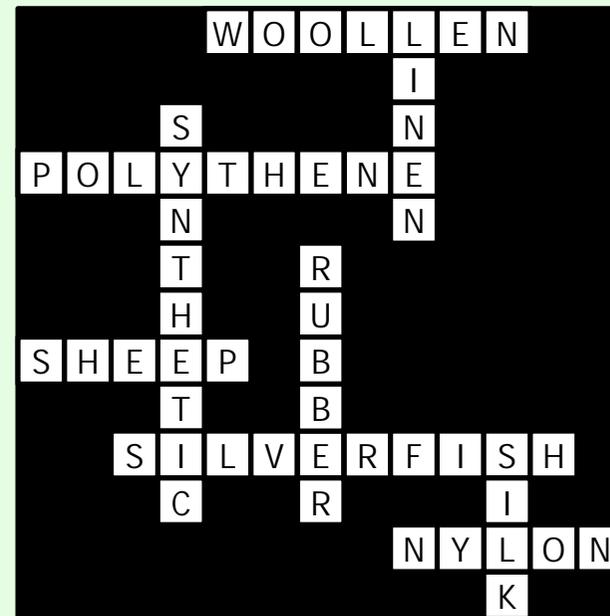
9 Clothes we wear

Answers



Page 64 & 65

- 1) State whether true or false.
 - a. True
 - b. True
 - c. False
 - d. False
 - e. False
- 2) Complete the crossword with the help of the clues given below.



* These answers may be unique to each student. Teachers may also get an assortment of responses from students based on what they have learnt from the chapter.

SAFETY AND CLOTHING

9 Clothes we wear

Answers



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64 & 65

3) Answer the following questions in your notebook.

a. We wear clothes for the following reasons:-

i) To protect ourselves from heat, dust, rain, insects and cold.

ii) To make us look good and stylish.

b. People belong to different professions. In order to identify themselves with their professions, people wear different clothes. This is called a uniform. Doctors, policemen,

pilots, lawyers, firemen and students wear uniforms.

c. During summer, we sweat a lot and release heat from our body. The cotton clothes that we wear during summer absorb the sweat and allow the heat to escape from our body. If we wear woollen clothes during summer, it will not allow the heat to escape and hence, we will feel warmer. So, we should wear cotton and not woollen clothes during summer.

* These answers may be unique to each student. Teachers may also get an assortment of responses from students based on what they have learnt from the chapter.

SAFETY AND CLOTHING

9 Clothes we wear

Answers



Page 64 & 65

- 4) Give reasons for the following.
- a. Woollen and silk clothes attract silverfish. Hence, we use naphthalene balls and neem leaves to keep away the silverfish.
 - b. Raincoats are made up of waterproof material, which keep us dry during the rainy season. Hence, we wear raincoats during rainy season.
 - c. Nylon is a synthetic fibre which is strong and dries easily. It has less air space, as compared to cotton

clothes and it does not wrinkle easily. Hence, nylon is more durable than cotton clothes.

- 5) Look at the images below and write whether they can be classified under summer, winter or rainy season.



Summer



Rainy



Rainy



Rainy

* These answers may be unique to each student. Teachers may also get an assortment of responses from students based on what they have learnt from the chapter.

SAFETY AND CLOTHING

9 Clothes we wear

Answers



Page 64 & 65



Winter



Summer



Summer



Summer



Winter



Winter



Summer



Winter



Winter



Rainy



Winter



Rainy



Winter



Rainy

* These answers may be unique to each student. Teachers may also get an assortment of responses from students based on what they have learnt from the chapter.

Chapter Summaries

OUR UNIVERSE

10

Our Earth and Solar System

As they grow older, children become curious about the world around them, starting with the planet that they live on and their environment. The chapter elaborates on the Solar System in detail, Earth's structure, movement and seasons. It also introduces the children to some new terms.

11

Air, Water and Weather

This chapter gives a brief about the air around us and explains new terms. It explains the concepts of evaporation, condensation, precipitation and its forms. The chapter also elaborates upon impurities in water and various methods of removing these impurities.

Chapter Summaries

OUR UNIVERSE

12

Natural Resources

Natural resources are very important to our existence and one such resource is soil. The chapter details the nature and composition of soil, while also shedding light on the problem of soil erosion and the ways in which it occurs. The chapter also stresses upon the importance of soil and states methods of soil conservation.

13

Environment

The environment we live in, needs to be clean in order for us to lead a healthy life. The chapter explains the meaning of the term environment and throws light at issues such as deforestation, pollution and its types, effects of pollution and how to protect the environment.

Our Universe

10

Our Earth and
Solar System

(Answers)

**DO
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Mercury – Budha
Venus – Shukra
Mars – Mangal
Jupiter – Guru

Saturn – Shani
Uranus – Arun
Neptune - Varun



Page
75 & 76

- 1) Based on the position of the Sun, what would the weather be in the two hemispheres under the following conditions?

Season in
Northern
Hemisphere

- a. Summer
- b. Winter

Season in
Southern
Hemisphere

- a. Winter
- b. Summer

* These answers may be unique to each student. Teachers may also get an assortment of responses from students based on what they have learnt from the chapter.

Our Universe

10

Our Earth and
Solar System

Answers



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75 & 76

2) Answer the following in your notebook.

Star	Planet
Stars have light of their own. They are called luminous objects.	Planets do not have light of their own. They are called non-luminous objects.
Stars remain fixed in one place.	Planets revolve around the Sun, which is also a star.

- b. The inner planets are Mercury, Venus, Earth and Mars. The outer planets are Jupiter, Saturn, Uranus and Neptune. The planets have a fixed orbit and revolve around the Sun. They do not have light of their own and reflect the light of the Sun.
- c. The imaginary lines on the Earth divide the Earth into two equal parts. The important imaginary lines are Equator, Tropic of Cancer and Tropic of Capricorn.

* These answers may be unique to each student. Teachers may also get an assortment of responses from students based on what they have learnt from the chapter.

Our Universe

10

Our Earth and Solar System

Answers



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- b. The rotation of the Earth causes day and night. When the Earth is facing the Sun, we have day, while the other side of the Earth is night.
- c. The two movements of the Earth are:-
- i) Rotation of the Earth - The Earth spins on its own axis and it is called rotation. This rotation causes day and night. It takes 24 hours for the Earth to complete one rotation.
- ii) Revolution of the Earth - The Earth also moves in a fixed path called an orbit, around the Sun. This is called revolution. The revolution causes seasons. The Earth takes $365 \frac{1}{4}$ days to complete one revolution.
- 3) Fill in the blanks.
- a. Constellations
b. Dwarf
c. Asteroids
d. Shooting star
e. Equator

* These answers may be unique to each student. Teachers may also get an assortment of responses from students based on what they have learnt from the chapter.

Our Universe

10

Our Earth and Solar System

Answers



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4) Search for the following words in the word grid.

A	G	E	A	X	I	S	N	I	W	X	N	M
P	L	A	N	E	T	M	Y	W	E	A	N	M
U	U	H	G	O	A	T	U	P	S	C	N	F
P	W	Y	L	T	J	F	K	Q	A	I	G	N
K	P	O	R	B	I	T	U	K	T	Q	N	W
C	P	R	N	A	H	Z	R	P	E	Q	H	V
D	O	L	G	X	U	O	A	C	L	A	Z	W
D	K	M	E	W	A	W	C	I	L	V	W	W
D	K	G	E	L	O	C	K	Q	I	F	R	A
L	W	R	T	T	B	K	Z	G	T	C	Q	A
C	L	D	R	W	E	F	N	G	E	O	M	R
V	G	B	O	L	I	E	A	S	S	T	A	R
A	S	T	E	R	O	I	D	C	G	Z	Y	R

5) State whether true or false.

- a. False
- b. False
- c. False
- d. True
- e. False

* These answers may be unique to each student. Teachers may also get an assortment of responses from students based on what they have learnt from the chapter.

OUR UNIVERSE

11

Air, Water and
Weather

(Answers)

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Generation of electricity in rivers using turbines, drying of clothes, winnowing, generation of electricity in windmills, sailing of ships, etc.

When water is heated, it turns into vapour. When hot water comes out of the tap, water vapour comes out as well. The hot water that comes out of the tap is less hot as compared to the vapour. This water vapour, being in a gaseous form, moves freely in the air. When it touches the surface of the mirror or window pane, the mist is formed.

* These answers may be unique to each student. Teachers may also get an assortment of responses from students based on what they have learnt from the chapter.

OUR UNIVERSE

11

Air, Water and Weather

Answers



Page 86 & 87

- 1) Answer the following questions in your notebook.
- a. The difference in the heating and cooling down of land and water is called breeze. The two types of breeze are:- land breeze and sea breeze.
- When the cool air blows from the sea to land, it is called sea breeze, which blows during the day. As the sun sets, the land cools faster than the sea. The air begins to blow from land to sea. This is land breeze.

- b. When air cools, the water vapour in the air cools down and changes back into water. This process is called condensation.
- c. When clouds pass through cooler air, they get cooled further. The water drops become heavier. When they become very heavy, they fall to the Earth as rain. This is called precipitation. The different forms of precipitation in nature are:-
- | | | |
|----------|-----------|---------------|
| i) Rain | iii) Snow | v) Fog & Mist |
| ii) Hail | iv) Dew | vi) Frost |

* These answers may be unique to each student. Teachers may also get an assortment of responses from students based on what they have learnt from the chapter.

OUR UNIVERSE

11

Air, Water and
Weather

(Answers)



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- d. The different methods of water purification are:-
- i) Sedimentation – The process in which impurities settle at the bottom of the container, is called sedimentation.
 - ii) Decantation – The method of collecting clear water after the impurities settle down, is called decantation.
 - iii) Filtration – This is a process by which all insoluble impurities are completely removed by passing the
- impure water through a porous medium.
- iv) Chlorination – Chlorine gas is passed through water, or chlorine tablets are added to impure water to make it pure. This is called chlorination.
 - v) Boiling - By boiling water, germs are killed, making it pure.
- e. Water is polluted by dirt, germs and harmful chemicals from our houses and factories, which are thrown into the water bodies.

* These answers may be unique to each student. Teachers may also get an assortment of responses from students based on what they have learnt from the chapter.

OUR UNIVERSE

11

Air, Water and
Weather

(Answers)



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2) Fill in the blanks.

- | | |
|--------------|----------------|
| a. Humidity. | f. Water table |
| b. Foggy | g. Water |
| c. Frost | h. Sun |
| d. Six | i. Heavier |
| e. Filters | |

3) Who am I?

- a. Rain
- b. Monsoon winds
- c. Hail
- d. Snow
- e. Boiling

4) Choose the right answer.

- a. The Sun
- b. Water becomes warm and changes from liquid into water vapour
- c. Precipitation
- d. Oceans
- e. Condensation
- f. Evaporation, condensation, precipitation
- g. All of the above
- h. Dew

* These answers may be unique to each student. Teachers may also get an assortment of responses from students based on what they have learnt from the chapter.

OUR UNIVERSE

12

Natural Resources

Answers



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93 & 94

1) Answer the following questions in your notebook.

a. Soil is important because:-

- i) We get food and materials for the construction of houses.
- ii) We need soil to grow fruits, vegetables and flowers.
- iii) Soil contains important things such as seeds, spores, insects and worms.
- iv) Animals get nutrients from the plants that grows in the soil.

- b. The different layers of soil are:-
- i) Topsoil - This is the uppermost layer of the soil, made up of living and decomposed materials like leaves, plants and bugs.
 - ii) Subsoil – This layer is located below the topsoil and has clay and mineral deposits. It contains lesser organic materials than the layers above it.
 - iii) Bedrock – This layer is below the subsoil and is made of slightly unbroken rock and only a little bit of organic material.

* These answers may be unique to each student. Teachers may also get an assortment of responses from students based on what they have learnt from the chapter.

OUR UNIVERSE

12

Natural Resources

Answers



Page 93 & 94

- c. The removal of topsoil by natural forces such as rain, wind, etc. is called soil erosion. It results in the loss of the valuable top soil and important nutrients that are necessary for crops to grow. Soil erosion can be prevented by:-
- i) Planting trees – The roots of the trees hold the soil firmly in its place preventing the soil erosion.
 - ii) Making bunds or embankments – The bunds or embankments block the floods and waves preventing

- iii) Using terrace or contour farming - This kind of farming slows down the flowing of the water and prevents it from washing the soil away from farmlands.
 - iv) Crop rotation – This method helps in restoring the fertility of the top soil.
- 2) State whether true or false.
- a. True
 - b. False
 - c. True
 - d. True
 - e. True

* These answers may be unique to each student. Teachers may also get an assortment of responses from students based on what they have learnt from the chapter.

OUR UNIVERSE

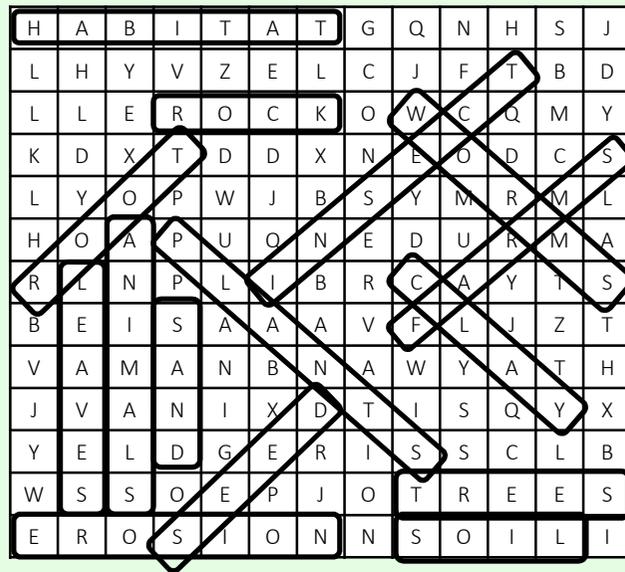
12 Natural Resources

Answers



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93 & 94

3) Find the following words in the grid.



- 3) Give reasons for the following.
- Bedrock has slightly unbroken rocks and does not allow water to pass through its layer. Hence the roots of plants are not found in bedrock.
 - Rivers do not remain still and keep flowing. The force at which they flow break up particles along the river bottom and carry them downstream.
 - All life on Earth depends upon soil, as direct or indirect source of food. Hence, soil is an important natural resource.

* These answers may be unique to each student. Teachers may also get an assortment of responses from students based on what they have learnt from the chapter.

OUR UNIVERSE

12

Natural Resources

(Answers)



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- d. The roots of the plant hold the soil particles together preventing soil erosion.
- e. Wind can cause soil erosion by picking up and carrying loose particles and dust away.

* These answers may be unique to each student. Teachers may also get an assortment of responses from students based on what they have learnt from the chapter.

OUR UNIVERSE

13

Environment

(Answers)

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The turtle remains alongside the beaches and damp areas. This is because it lays eggs inside the sand and swims in the sea. The eagle is a bird with sharp eyesight, which allows it to catch prey easily. The elephant lives in the forests surrounded by tall trees, which provides it with food. The turtle is an amphibian and it lives on both land and water. The elephant is a terrestrial animal and lives in the forests. The eagle is a bird and hence, is an aerial animal.

Typhoid, diarrhoea, jaundice are some water borne diseases. In order to prevent these diseases, we need to consume clean and purified water. Also, we should not throw waste into water bodies and keep them clean.

* These answers may be unique to each student. Teachers may also get an assortment of responses from students based on what they have learnt from the chapter.

OUR UNIVERSE

13

Environment

Answers



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99 & 100

- 1) State whether true or false.
 - a. False
 - b. True
 - c. False
 - d. False
 - e. False
- 2) Answer in brief.
 - a. The cutting of trees for various needs is called deforestation.
 - b. Harmful gases released by factories and vehicles mix with water vapour in the atmosphere and come down on Earth in the form of acid rain.
 - c. Air pollution is caused due to the smoke emitted by vehicles, factories, bursting firecrackers, etc. Continuous exposure to air pollution affects the lungs of growing children.
 - d. Our surroundings such as schools, buses, parks, shops, markets, neighbourhood, family members, etc. make up our immediate environment.
 - e. When there is an increase in the amount of carbon dioxide in the air, the atmosphere

* These answers may be unique to each student. Teachers may also get an assortment of responses from students based on what they have learnt from the chapter.

OUR UNIVERSE

13

Environment

Answers



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warms up. This is caused due to deforestation and due to the gases emitted by factories. This warming of the Earth is called global warming.

3) Who am I?

- a. Carbon dioxide
- b. Biodegradable items
- c. Typhoid, diarrhoea, dysentery
- d. Carbon dioxide
- e. Trees

4) Choose the right answer.

- a. Coal burning in homes and factories
- b. Air pollution
- c. Trees
- d. Pollution from factories
- e. Global warming
- f. Sea level will rise
- g. Riding a cycle

* These answers may be unique to each student. Teachers may also get an assortment of responses from students based on what they have learnt from the chapter.

MATTER AND FORCE

14

Matter and its Three States

The chapter explains the concept of matter and introduces terms such as volume, mass, states of matter, etc. The chapter then goes on to explain the three states of matter in detail, changes in these states and the topic of solubility.

15

Force, Work and Energy

Everything that we do requires force, energy and is work done. This very concept, is explained to the children in this chapter. The chapter covers topics such as types of force, energy and its forms, work and machines and sources of energy; both renewable and non-renewable.

MATTER AND FORCE

14

Matter and its
three states

(Answers)

DO Page
THIS 104, 105 & 106

Yes. Ash is a solid because it has a shape of its own. Even though it changes its shape, its molecules are tightly packed that gives it shape. The molecules in rubber have a few free spaces in between, which allows the rubber to be flexible. But in a diamond, the molecules are tightly packed, which doesn't allow it to be flexible. The jelly at first, when mixed with water, is liquid. When frozen, it becomes solid. It belongs to a category

called colloids, which are solids and dissolve in liquids.

Solids	Liquids	Gases
Molecules are close together and do not move freely.	Molecules move freely as there are more spaces in it.	Molecules are very loosely packed.
They have definite shape and volume.	They have volume but take shape of their container.	They have no shape or volume.

* These answers may be unique to each student. Teachers may also get an assortment of responses from students based on what they have learnt from the chapter.

MATTER AND FORCE

14

Matter and its
three states

Answers

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E.g. chair, table, box, etc.	E.g. water, oil, juice, etc.	E.g. smoke coming out of vehicles, smoke from burning logs, etc.
------------------------------------	---------------------------------------	--

Boiling water, drying of clothes, freezing of water to form ice, pouring cold water into the tumbler, melting of ice cream, churning to make butter, making jelly, baking a cake, melting butter, camphor burning, etc.



Page
108 & 109

- 1) Choose the right answer.
- a. False
 - b. True
 - c. Boiling
 - d. Liquid
 - e. Water

2) Fill in the blanks.

- a. Melting
- b. Cooled
- c. Frozen
- d. Freezing point
- e. Atoms

* These answers may be unique to each student. Teachers may also get an assortment of responses from students based on what they have learnt from the chapter.

MATTER AND FORCE

14

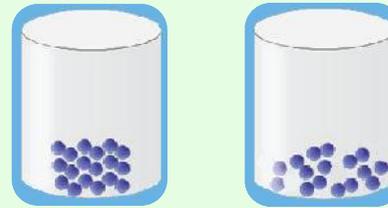
Matter and its three states

Answers



Page 108 & 109

- 3) Answer the following question in your notebook.
- a. The three states of matter are:- solids, liquids and gases.
 - b. Water is a liquid and ice is a solid. In water, the molecules are loosely packed and hence, they take the shape of a container. In ice, the molecules are tightly packed and hence, they have a definite shape and volume.



- c. When water is cold or put in a freezer, the molecules will be extremely slow and move very little. They will hold onto each other, turning the water into ice. When water reaches its boiling point, it changes into water vapour. This vapour is in a gaseous state and this change from liquid to vapour is called **evaporation**.

* These answers may be unique to each student. Teachers may also get an assortment of responses from students based on what they have learnt from the chapter.

MATTER AND FORCE

14

Matter and its three states

Answers



Page 108 & 109

- d. When solute is continuously added into solvent, a time will come when the solvent will not dissolve any more solute. This is called a **saturated solution**. Liquids have loosely packed molecules and hence, they have spaces between molecules. When solids mix with liquids, they occupy the free spaces in the liquid molecules, to form a solution.
- e. The particles in gases are far apart from each other and arranged in a random way. The particles also move quickly in different directions. Hence, they do not have any definite shape or volume.

* These answers may be unique to each student. Teachers may also get an assortment of responses from students based on what they have learnt from the chapter.

MATTER AND FORCE

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Matter and its three states

Answers



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5) Match the following.

- | | | |
|-------------------|---|--|
| a. Melting point | → | the point where water becomes ice |
| b. Evaporation | → | the substance to which solute is added |
| c. Solvent | → | is in gaseous state |
| d. Freezing point | → | when water reaches boiling point |
| e. Smoke | → | when ice starts becoming water |

* These answers may be unique to each student. Teachers may also get an assortment of responses from students based on what they have learnt from the chapter.

MATTER AND FORCE

15

Force, Work and
Energy

(Answers)

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THIS 110, 111 & 114

Crushing groundnut into powder, squeezing juice from lemon, rolling a chapati, making a doll from clay, squeezing toothpaste out of the tube, etc.

Knife, scissors, nut cracker, bottle opener, pulley of the well, lemon squeezer, etc.

- 1) Sun – to dry clothes, to dry the manure that is used as fuel, sunlight was used to kill minute germs in the house, through ventilation, to tell time, etc.
- 2) Wind – used in winnowing, to dry clothes, for ships and boats to sail, etc.
- 3) Water – used for farming, drinking, domestic purposes such as cooking, washing, cleaning, etc.
- 4) Wood – to cook, to make toys or ornaments, build houses, etc.
- 5) Fire – to cook food, to keep oneself warm, to burn farmlands before cultivation, as source of light at night, etc.

* These answers may be unique to each student. Teachers may also get an assortment of responses from students based on what they have learnt from the chapter.

MATTER AND FORCE

15

Force, Work and Energy

Answers



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- 1) Write the answers with the clues given.
 - a. Sun
 - b. Chemical reactions
 - c. Energy
 - d. Solar energy
 - e. Atom
 - f. Petroleum
- 2) Answer the following questions in your notebook.
 - a. The push or pull of an object is called force. Force is applied to an

- b. object in order to move it. The ability to do work is energy. Work is done when force is applied. In order to apply this force, we need energy. Hence, work is dependent on energy.
- c. The different kinds of energy are:-
 - i) Heat energy
 - ii) Electrical energy
 - iii) Mechanical energy
 - iv) Sound energy
 - v) Chemical energy
 - vi) Magnetic energy
 - vii) Atomic energy

* These answers may be unique to each student. Teachers may also get an assortment of responses from students based on what they have learnt from the chapter.

MATTER AND FORCE

15

Force, Work and
Energy

Answers



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d. The differences between renewable and non-renewable resources are:-

Renewable resources	Non- renewable resources
Renewable sources of energy do not get exhausted quickly, and are easily generated.	Non-renewable resources get exhausted quickly and takes million of years to be regenerated.

They are cheap and are available in abundant quantity.

E.g. Sun, wind, water, etc.

They are expensive and also should be used judiciously.

E.g. coal, petroleum, minerals, etc.

e. Friction is a force between two surfaces that are sliding, or trying to slide, across each other. Friction always works in the direction opposite to the direction in which an

* These answers may be unique to each student. Teachers may also get an assortment of responses from students based on what they have learnt from the chapter.

MATTER AND FORCE

15

Force, Work and
Energy

(Answers)



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object is moving, or trying to move. Friction always slows a moving object down. The amount of friction depends on the materials from which the two surfaces are made. The rougher the surface, the more the friction produced.

- f. The Sun gives us solar energy. It is the main source of energy on Earth. Solar energy is used by plants to make food and plants are eaten by both man and animals. So, the energy we get from food, comes from the Sun.

3) Choose the right answer.

- a. Friction
- b. Polished wood
- c. Less friction
- d. Air and fire
- e. Electrical and heat energy

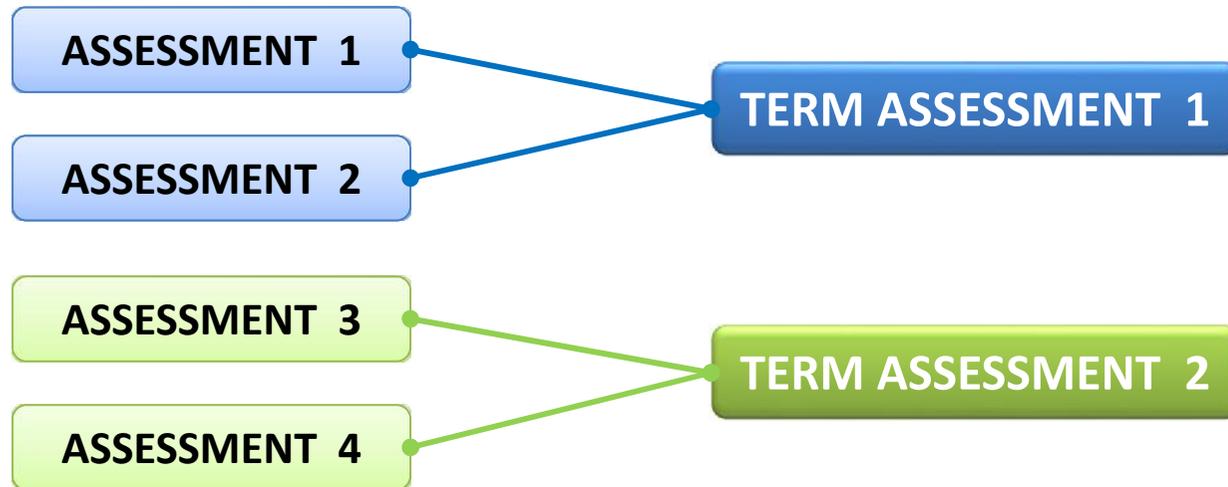
4) State whether true or false.

- a. True
- b. False
- c. True
- d. True
- e. False
- f. True

* These answers may be unique to each student. Teachers may also get an assortment of responses from students based on what they have learnt from the chapter.

Evaluation

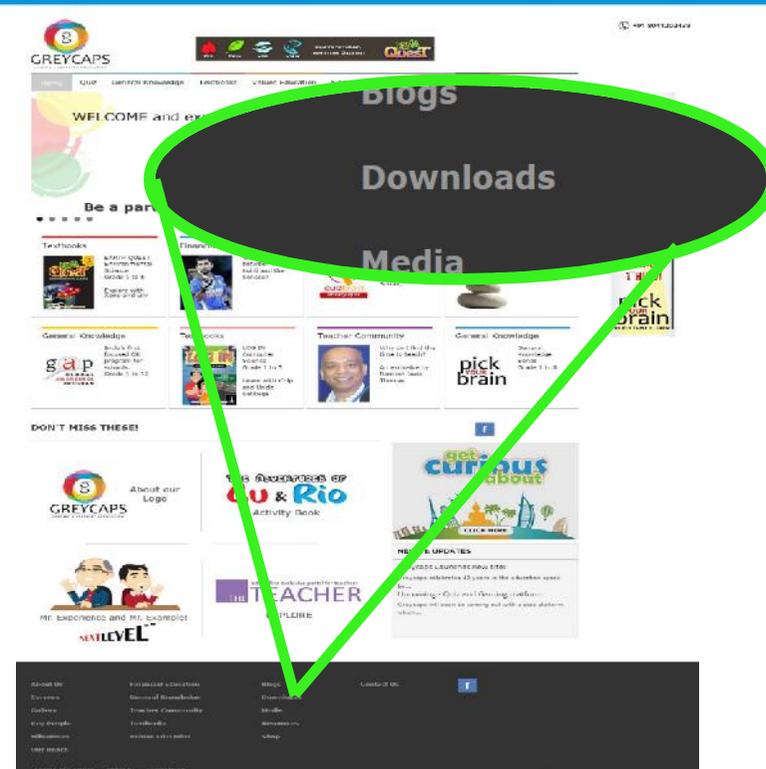
The evaluation sheets are divided into four assessment papers and two term papers, to be given during the academic year.



These assessment sheets can be accessed on the 'Downloads' link on the Greycaps website [www.greycaps.com]

'DOWNLOADS' Link

This link provides access to assessment sheets and this teacher manual, to all teachers subscribed to Voyager.



Each assessment sheet is downloadable in a PDF format and is accompanied with the answer keys.

Each PDF file is password protected for the teachers' benefit.

The password is 'teacher'.

Evaluation

The units covered for each assessment sheet are as follows :-

ASSESSMENT 1	How Plants Make Their Food Animal Life	TERM ASSESSMENT 1
ASSESSMENT 2	Food and the Human Body	
ASSESSMENT 3	Safety and Clothing Our Universe	TERM ASSESSMENT 2
ASSESSMENT 4	Our Universe Matter and Force	

Benefits

- Easy to recall, longer retention
- Fun, team based and experiential
- Makes the child THINK & QUESTION (No rote)
- Reduces the gap between the first child and last child (i.e; Honeycomb Philosophy)



We thank you for being a teacher.



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