



DELHI PUBLIC SCHOOL GHAZIABAD

V A S U N D H A R A

An initiative of Delhi Public School Ghaziabad Society

AFFILIATED TO C.B.S.E

GETTING TO KNOW PLANTS

CHAPTER 7

SCIENCE

CLASS VI



ACKNOWLEDGEMENTS

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DISCLAIMER

This book is published for better understanding of the concept of structure and function of plant in a joyful manner. It encourages the process of learning beyond classroom without losing the focus from core concept.

PREFACE

This book will take you through an amazing adventure of Adhyan - the inquisitive boy.

The book aims at imparting knowledge about structure of plants in a fun and engaging way. It further focuses on intricacies of functioning of plant in detail.

We are sanguine that this novel will keep all students and teachers engaged bringing more innovative and interactive methods of learning in the classroom. We hope to bring more fun and adventures of Adhyan in future.

LEARNING OUTCOMES

Students will be able to:

Compare

- the physical features of herbs, shrubs & trees.

Discuss

- about roots, stem, leaves, their functions.

Recognize

- patterns on leaves of different plants in order to classify them into reticulate and parallel venation.

Explain

- the process of photosynthesis and transpiration in plants.

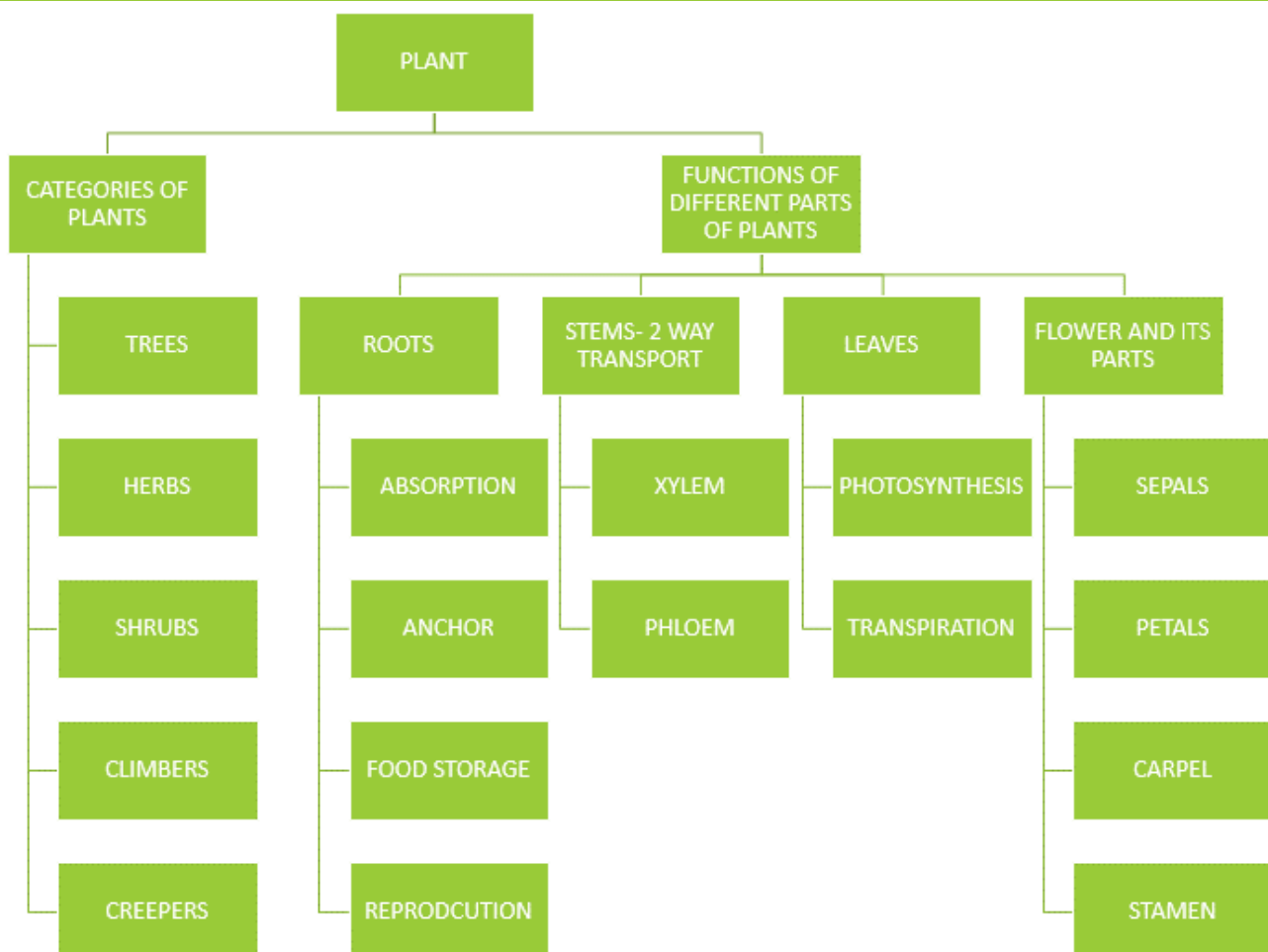
Deduce

- the relation between leaf venation and the types of roots.

Identify

- different parts of the flower and explain its function.

MIND MAP



CHARACTERS



Adhyan

Ms. Squirry



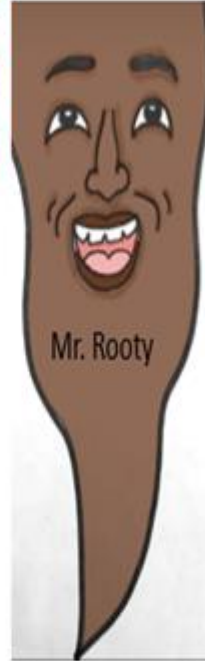
Ms. Tulsi



Ms. Grass



Mr. Gulmohar



Mr. Rooty



Ms. Flower



Mr. Creeper



Mr. Climber



Ms. Leafy



Ms. Antsie

GETTING TO KNOW ABOUT TYPES OF PLANTS

Adhyan finished his school homework and was getting bored in his room.



He went to his parents, both were busy with their office work.



So, he decided to visit his garden. On his way, he observed that everyone was working.



A colony of ants was carrying sugar cubes, honeybees were collecting nectar, birds were constructing their nest and squirrels were collecting nuts.



Antsie smiles and starts lifting her sugar cube.



Adhyan moved further and met honeybee, squirrel & others in the garden. All were busy with their work. No one had time to play with him. He went near a tree and started thinking.

In the entire garden, only trees are not working.
Let me ask them only.

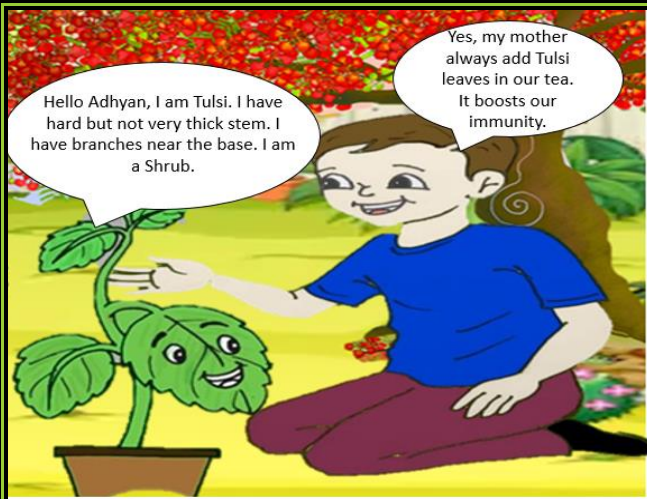
Why are you
standing still? Don't
you have any work
to do?

Gulmohar tree and all his friends started laughing.

Why do you feel we are not
working? We all are busy. We
have so much work to do
before the sunset.

But I cannot see
you doing anything.
You are just standing
here in the sun.

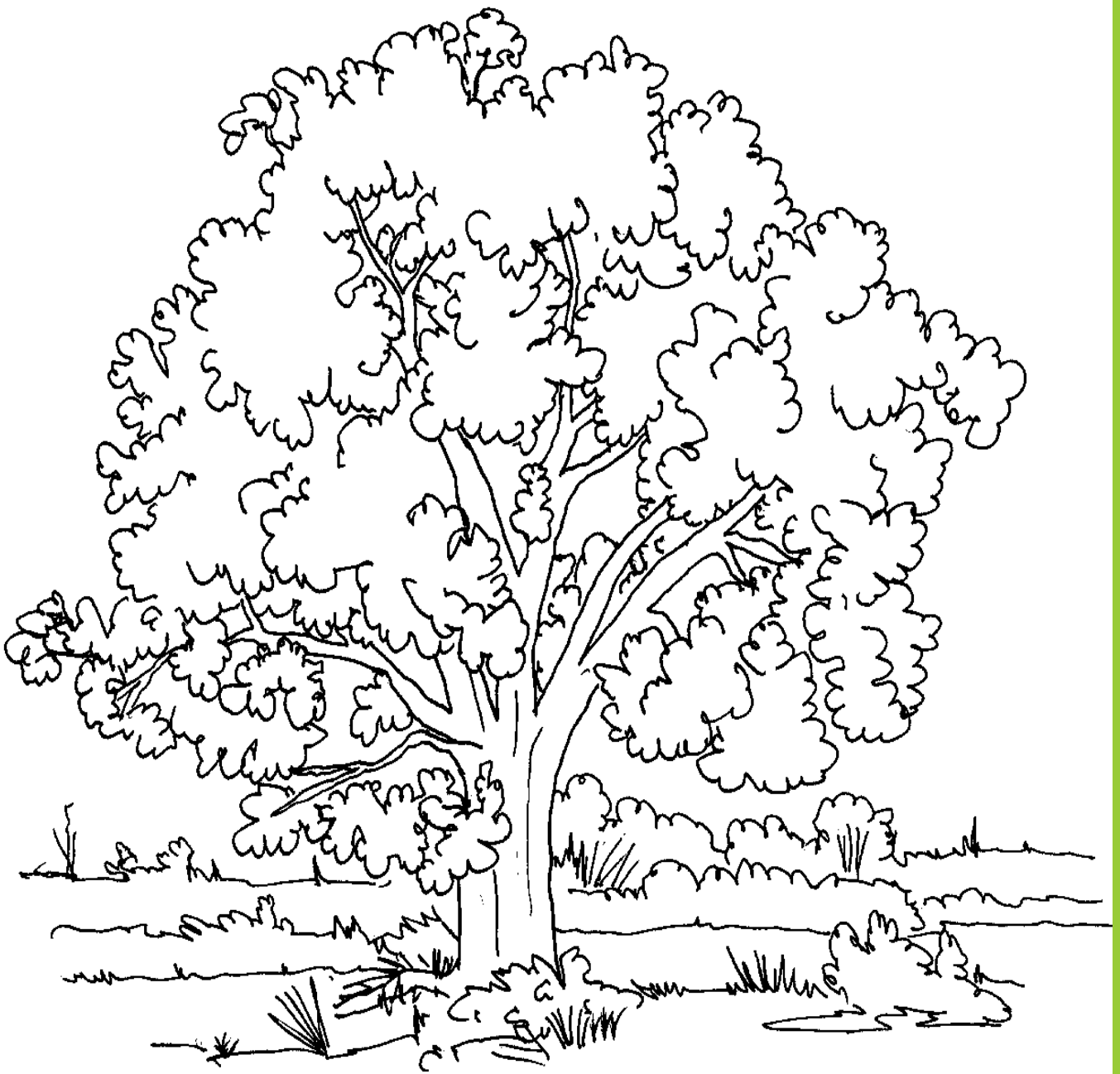






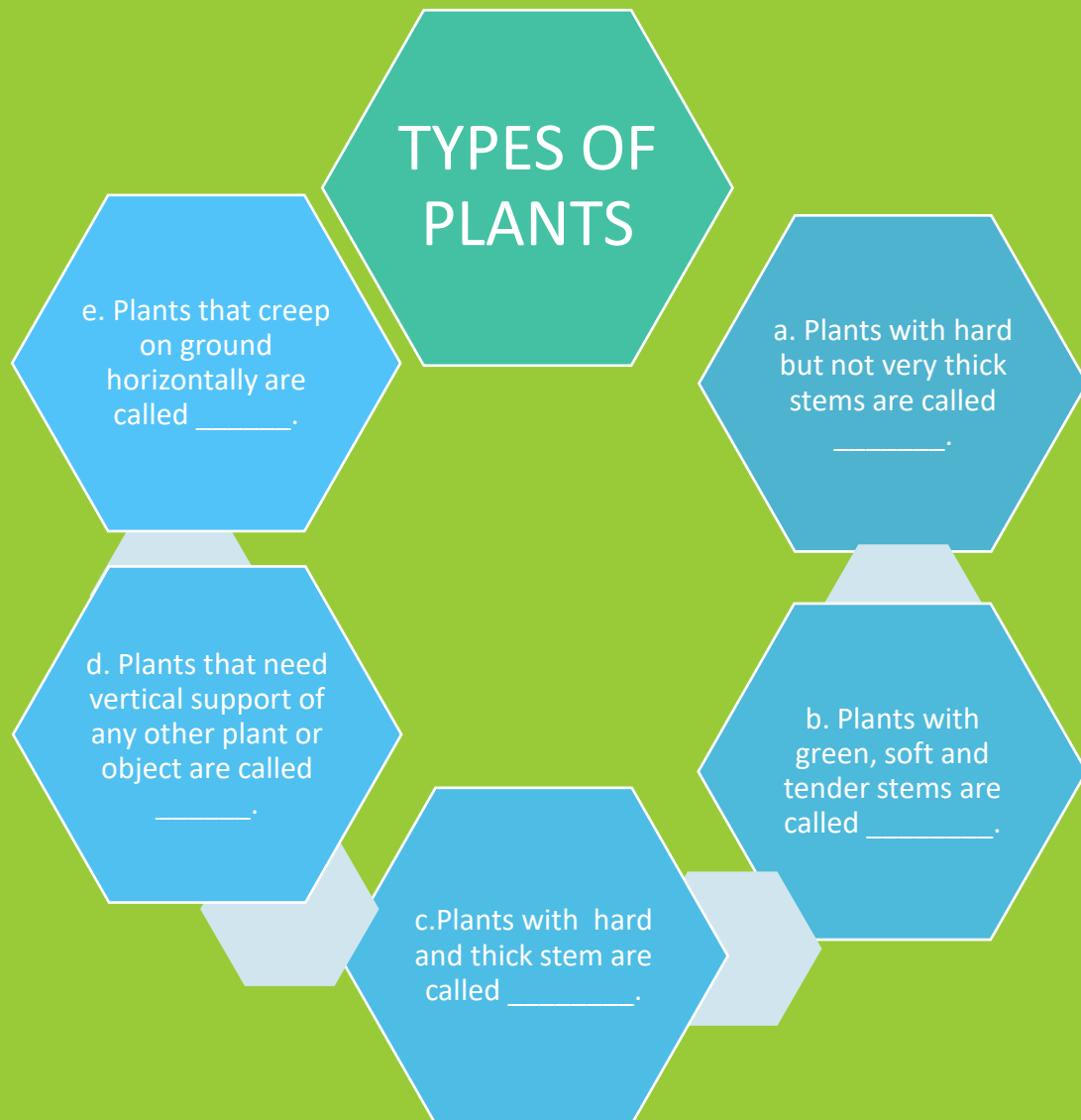
ACTIVITY

FILL THE COLOUR IN THE GIVEN PICTURE



CHECK FOR UNDERSTANDING-1

COMPLETE THE GIVEN G.O



ANSWERS:

a. Shrub	b. Herb	c. Tree	d. Climber	e. Creeper
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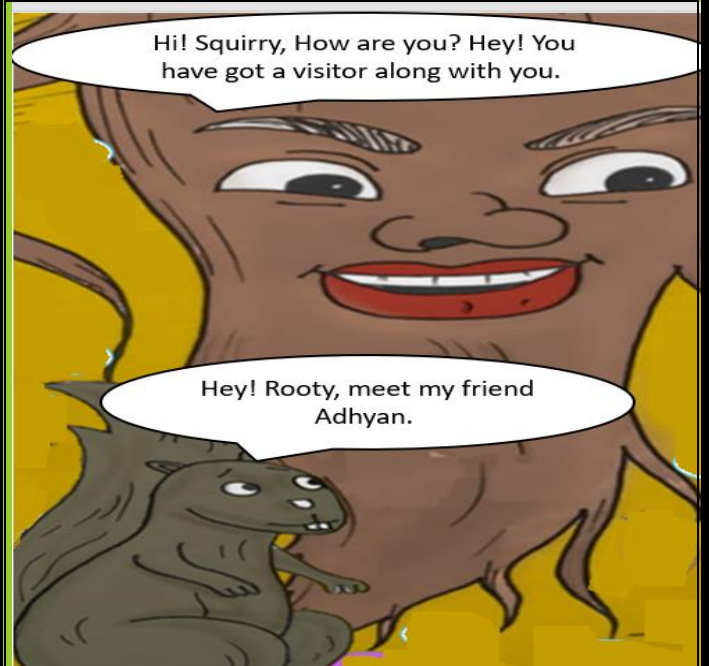
GETTING TO KNOW ABOUT ROOTS AND STEMS

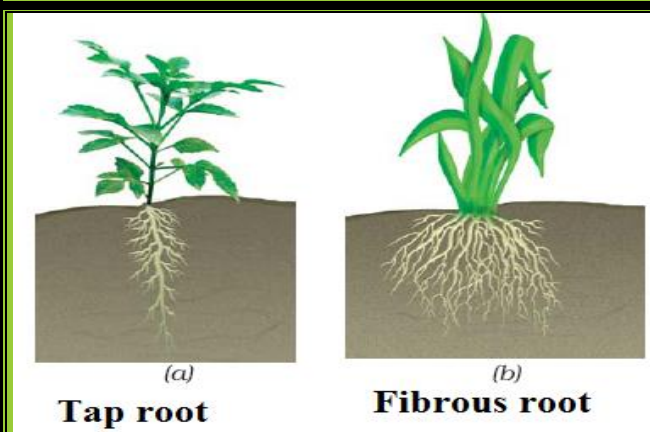
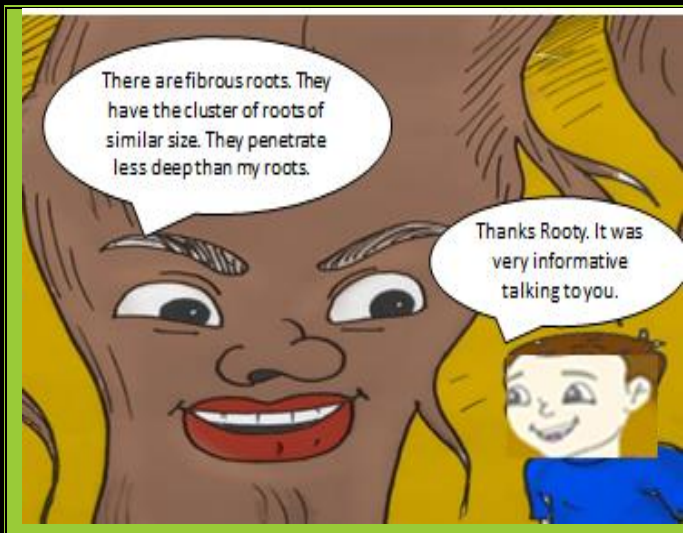
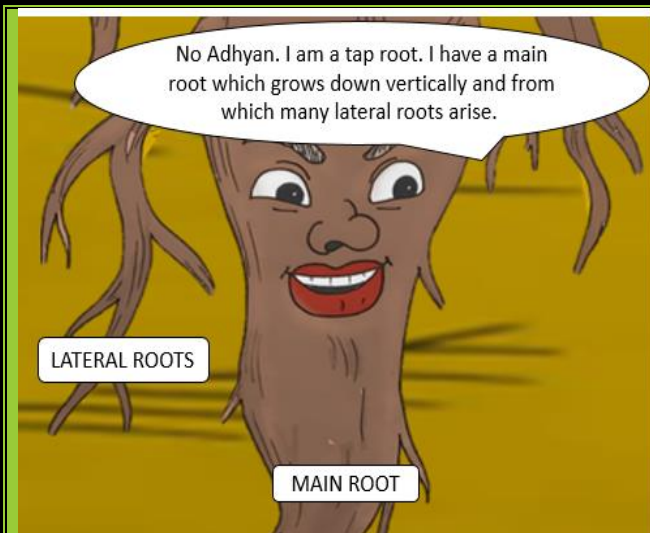
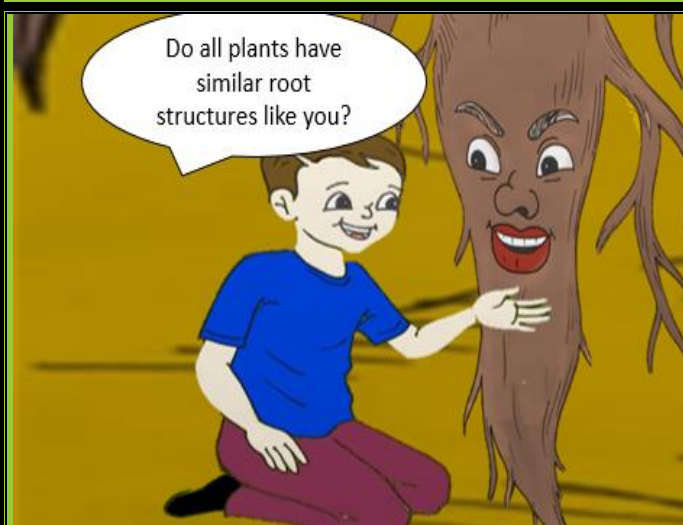
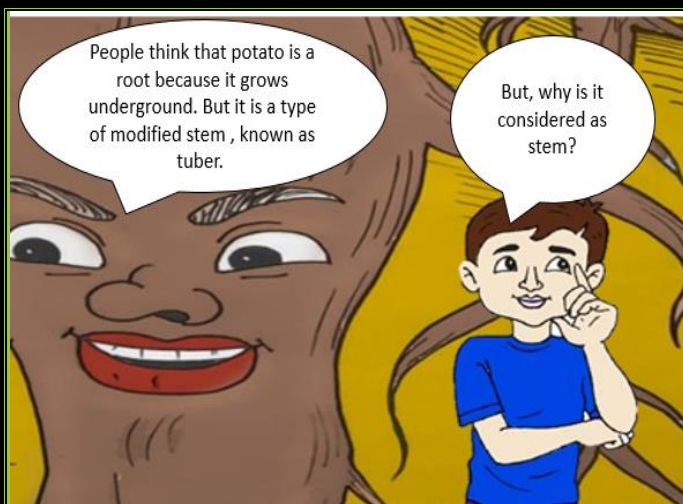
Adhyan drinks the potion and reduces to a size of an ant. Everything around him becomes magnified.



Squirry along with Adhyan enters the underground tunnel at the base of the tree. They sit on a platform and go deep in the ground on a slide.







Did you know?

Plants with roots as shown in figure (b) do not have a main root. All roots seem similar and these are called fibrous roots. Some plants with fibrous root systems include rice, corn, wheat and grass.

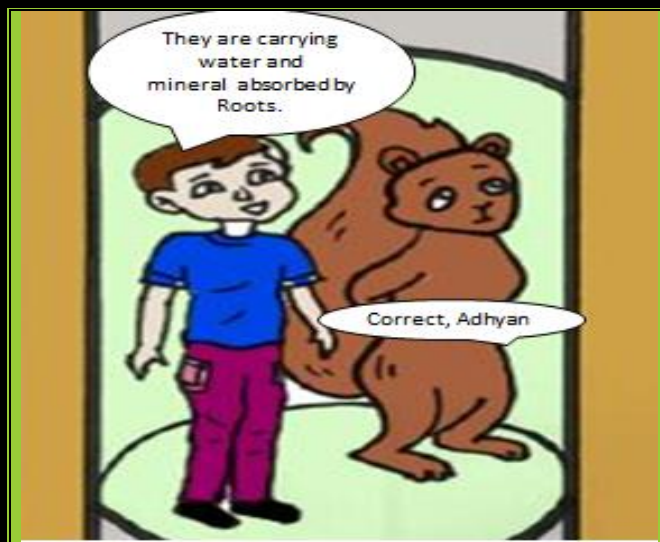


Squirry presses a button and door of the tube opens



They sit in the tube and while going up Adhyan sees that different tubes are transporting tiny packets.





Did you know?

Other functions that a stem can perform:

- Young stems which are green in colour can also perform photosynthesis in plant.
- A new plant can arise from the cutting of the stem of an old plant like rose, sugarcane.

CHECK FOR UNDERSTANDING-2

A. Draw a labelled diagram of tap root and fibrous root in the boxes given below.

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B. Match the following:

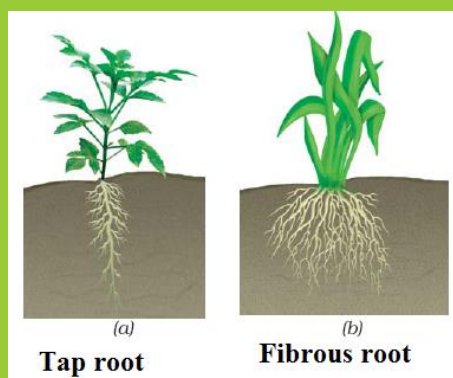
Weak stem which cannot stand upright.	Herb
Green tender stem.	Creeper
Thick, hard stem with branching near the base.	Tree
Thick, hard stem with branches high on the plant.	Shrub

C. Which of the following is not the primary function of stem?

- (a) Conduction of water
- (b) Photosynthesis
- (c) Formation of branches
- (d) Bears flowers and fruits

ANSWERS:

A.



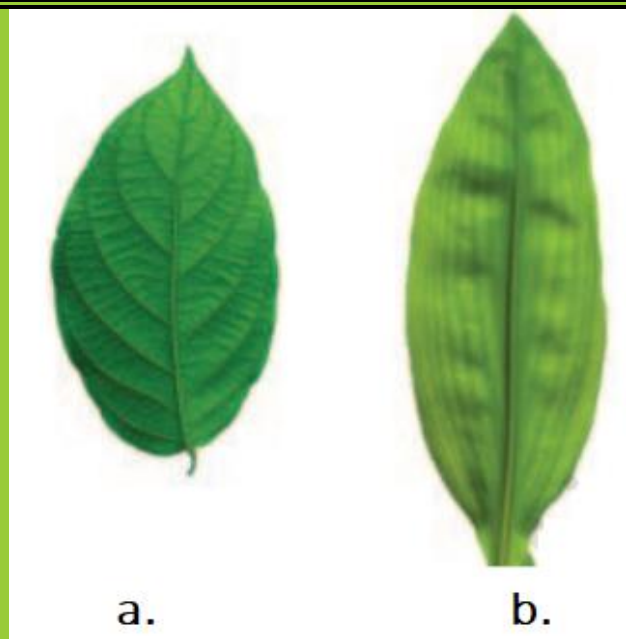
B.

Weak stem which cannot stand upright.	Creeper
Green tender stem.	Herb
Thick, hard stem with branching near the base.	Shrub
Thick, hard stem with branches high on the plant.	Tree

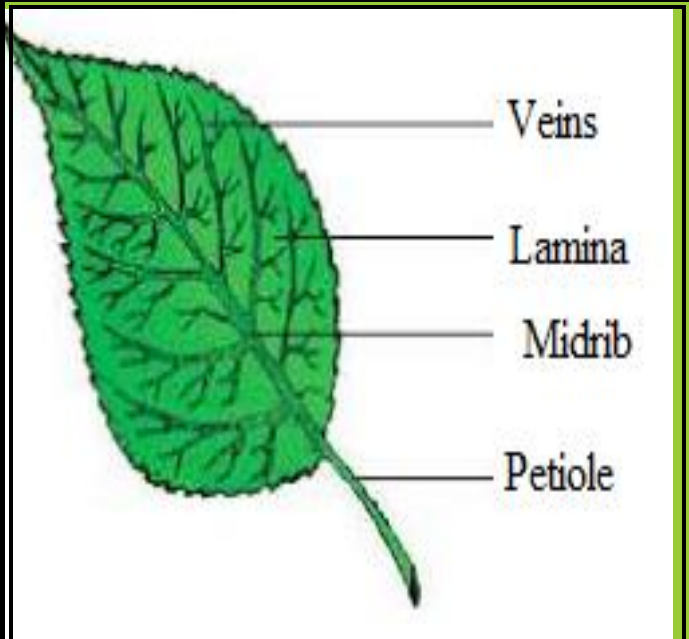
C. (b) Photosynthesis

GETTING TO KNOW ABOUT LEAVES



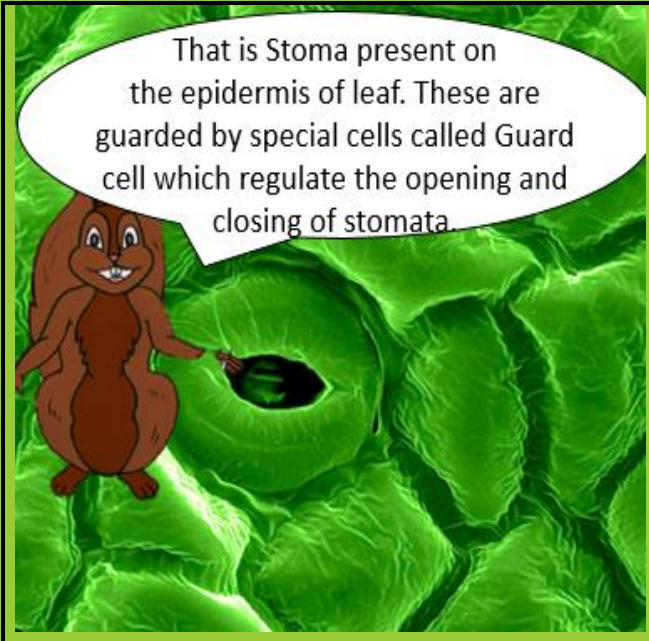


a. Reticulate Venation
b. Parallel Venation



Structure of a leaf



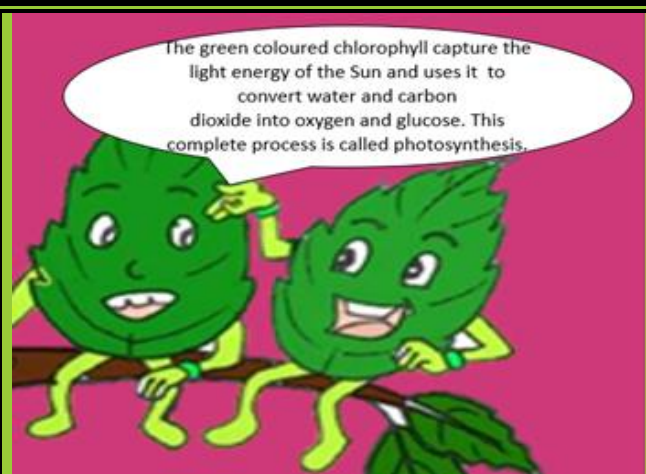




Adhyan and Squirry move inside the leaves through the stomata.







No, Adhyan. Light is one of the important raw material for the process of photosynthesis.

And sun is considered as the primary source of energy. The plants produce food using sunlight, and the food is shared by plants among all of us.



Wow! Plants perform so many tasks for us. Thank you, Leafy talking to you has been informative.

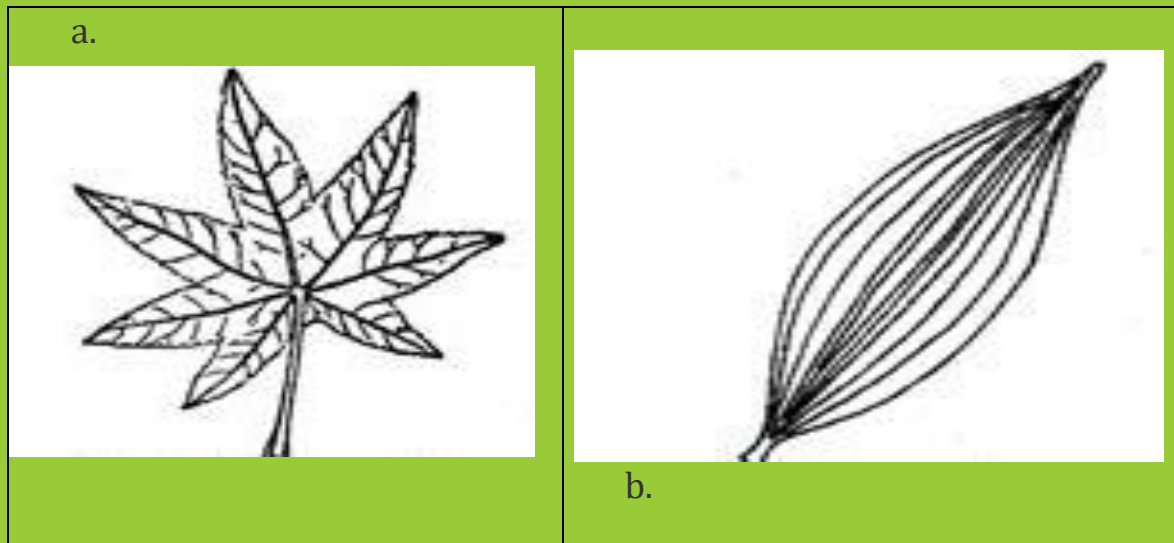
It was my pleasure Adhyan. Why don't you go and meet most beautiful part of a plant, Flower. We will get back to our work.

Bye Adhyan.



CHECK FOR UNDERSTANDING-3

Q1. Look at the given impressions and identify the venation and what kind of roots will the given plants have:



Q2. Observe the picture of an activity given below carried out with leaves of plants and polythene bag.



Now answer the following:

- (a) Which process is demonstrated in the activity?
- (b) When will this activity show better results – on a bright sunny day or a cloudy day?
- (c) What will you observe in the polythene bag after a few hours of setting up the activity?
- (d) Mention any one precaution you must take while performing this activity.

ANSWERS:

Q1. a. Reticulate venation and Tap root.

b. Parallel venation and Fibrous root.

Q2. (a) The process of transpiration is being demonstrate a in the given activity. The loss of water in the vapour form from the exposed parts of a plant (mainly leaves) is called transpiration.

(b) The activity will show better results on a bright sunny day because the rate of transpiration increases in the presence of strong sunlight.

(c) After a few hours, small drops of water will be seen inside the polythene cover.

(d) (i) The set-up must be airtight.

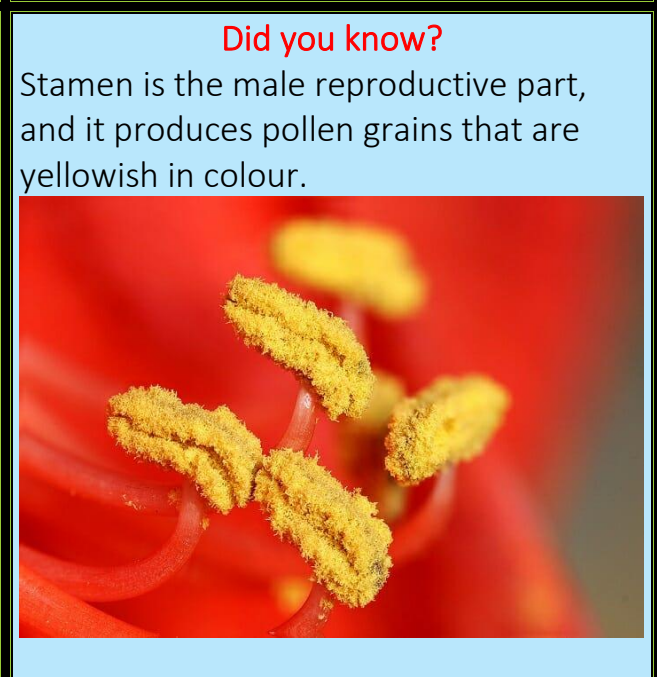
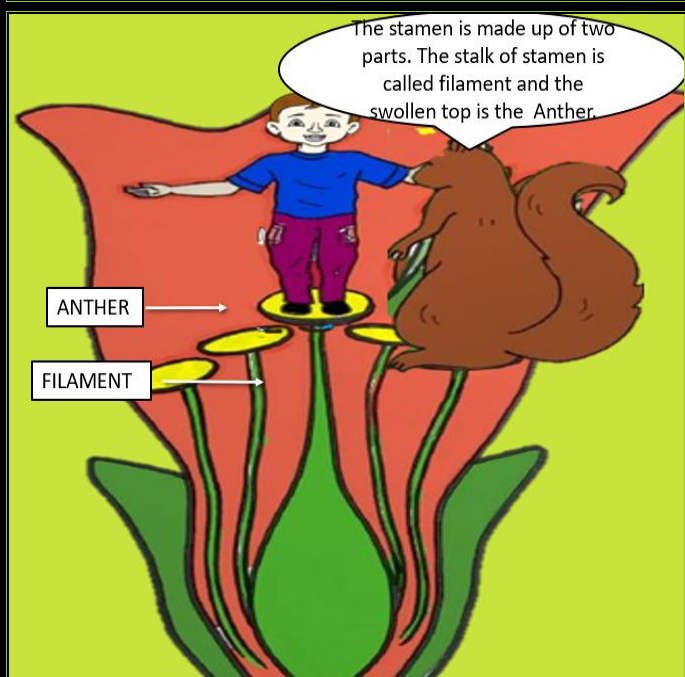
(ii) Polythene bag must be dry.

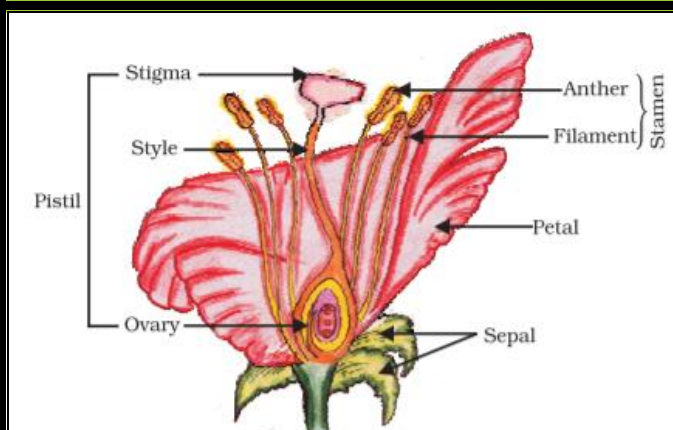
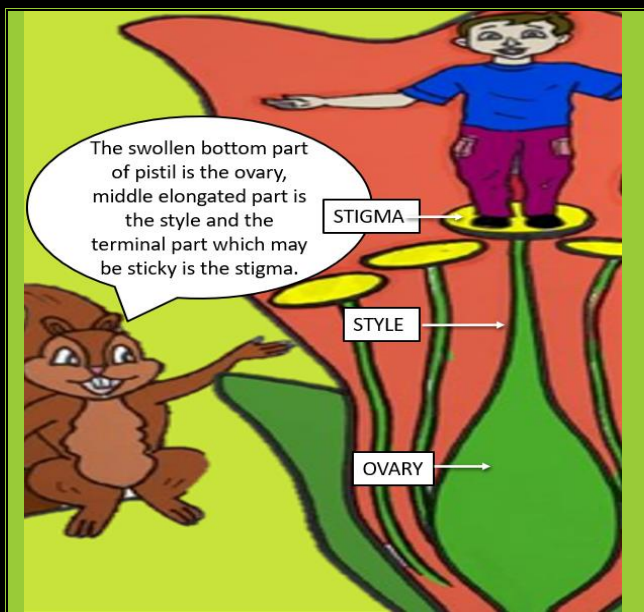
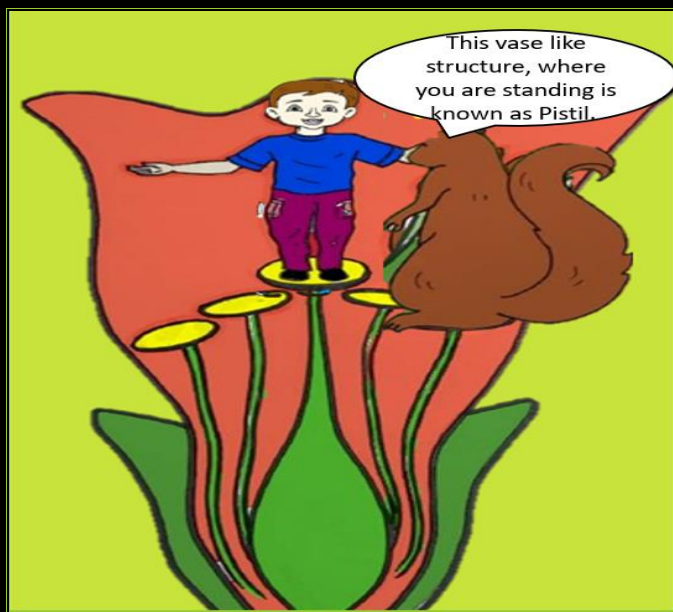
(iii) The twig must be fresh with 10-12 leaves.

GETTING TO KNOW ABOUT FLOWERS

They started walking and reached at an end which was guarded by green colored soldiers.







Section of a Flower

Did you know?

- The flower may be unisexual (papaya, watermelon) when it contains either stamens or carpels or bisexual (Hibiscus, mustard) when it contains both stamens and carpels.



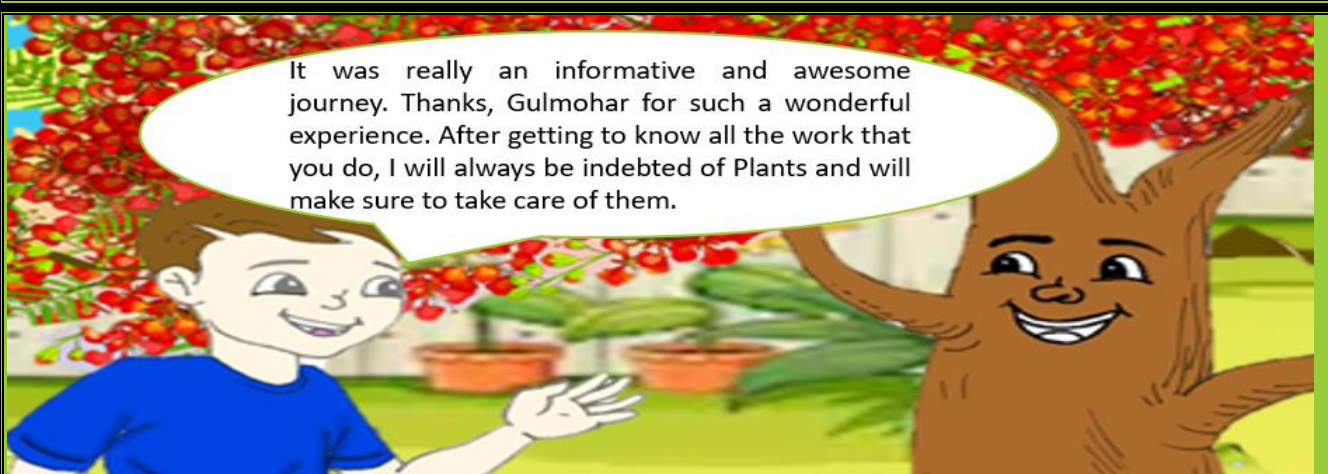
Adhyan drinks the potion again to attain his normal size.



Squirry and Adhyayan comes out of the flower. They jump on the ground.



It was really an informative and awesome journey. Thanks, Gulmohar for such a wonderful experience. After getting to know all the work that you do, I will always be indebted of Plants and will make sure to take care of them.



Adhyan make sure to apply the knowledge of all scientific concepts learned today in your real-life situation. This simple investigation that you did today to seek answer to your queries will help you to develop your observable properties to classify different processes. Last but not the least always remember Plants are the lifeline of Earth. Take care of them. Plant trees for a clean and green environment

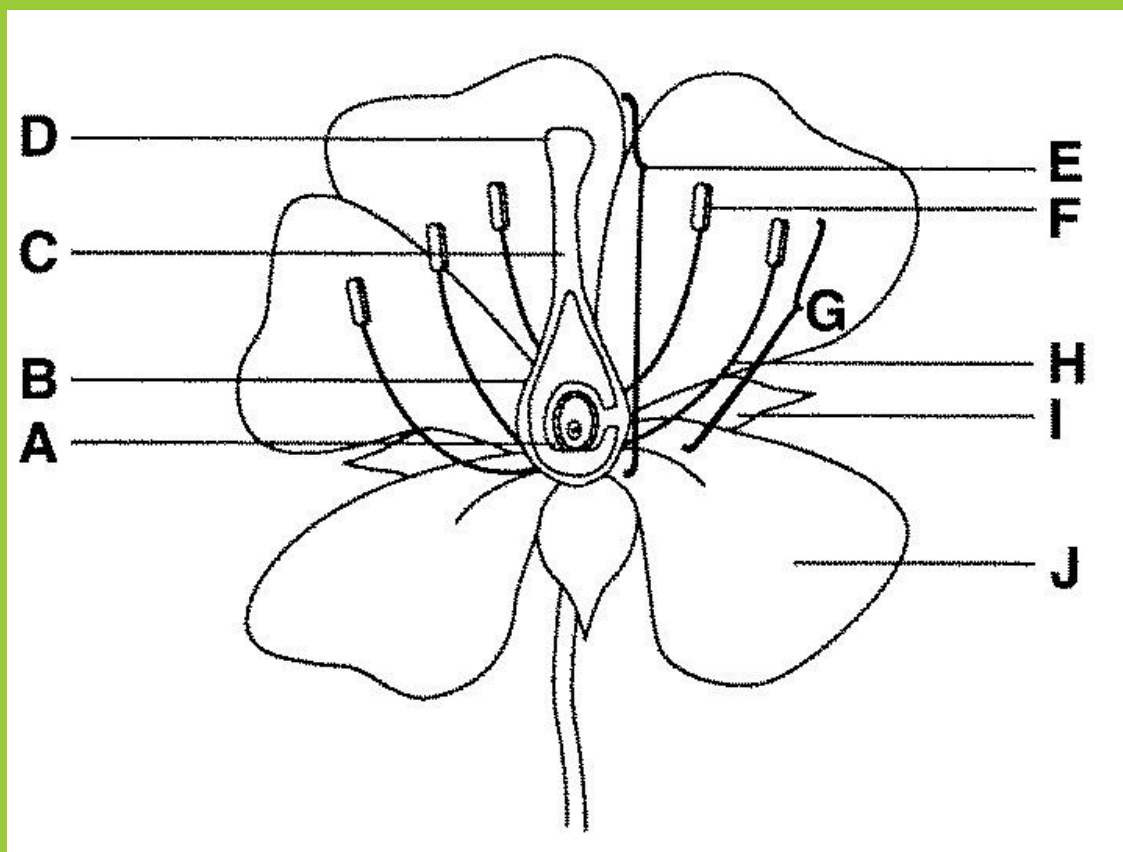


CHECK FOR UNDERSTANDING-4

Q1. Circle the correct answer:

- a) The male part of flower is known as stamen/pistil.
- b) Garlic is a special type of stem/root.
- c) The stem of a mango/potato can grow into a new plant.
- d) Style/Anther has ovules.

Q2. Colour and label the given diagram:



ANSWERS:

Q1.	a) Stamen	b) Root	c) Potato	d) Style
Q2.	A. Ovule B. Ovary C. Style	D. Stigma E. Pistil F. Anther	G. Stamen H. Filament I. Sepals	J. Petals

GLOSSARY

Photosynthesis: It is the process through which green plants convert light energy into chemical energy.

Transpiration: It is the process in which water is lost from a plant in the form of water vapour.

Chloroplasts: The green coloured pigment present in green parts of the plants. They absorb sunlight and help in photosynthesis.

Chlorophyll: Green pigment present in plant that allows plants to absorb energy from light.

Vascular Bundle: In the stem the tubes used for transport of essential materials such as water, mineral and food.

Xylem: Tubes which help in conduction of water and minerals in the upward direction i.e., from roots to leaves.

Phloem: Tubes which help in conduction of food from leaves to roots and other parts of plants.

Petiole: The stalk that joins a leaf to a stem.

Lamina: The broad part of the leaf.

Venations: The web like structures on the lamina of the leaf.

Stamen: It is the male reproductive part of the plant. It consists of two parts- Anther and Filament.

Pistil/Carpel: It is the female reproductive part of the plant. It consists of three parts- Stigma, Style and Ovary.

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SUMMARY

“A passionate look, touch or a hug on a plant is enough to open your inner eyes than going for a serious yoga and other therapies.”

Plants are living things that grow on land or in water. From snowy mountain slopes to dry, hot deserts, plants can survive almost anywhere on Earth. This Graphic Novel aims at experiential learning with innovation. It depicts the journey of Adhyan- an inquisitive boy who explores about plants with Squirry. Through this engaging novel you will be able to apply the knowledge of scientific concepts learned in real life situations. This simple investigation will lead you to seek answers to your queries and will help you to develop your observable properties.

Plants are the lifeline of Earth.

Take care of them.

Plant trees for a clean and green environment.

FROM PRINCIPAL'S DESK

Dear Educators

This has been the year of immense learning where pedagogical changes saw a sea change, where mindsets were broken, and progression of mind took centre stage. On one hand the survival for the fittest came to the fore, and on the other hand, one had to balance the act. Amidst all the chaos, one could make peace by creating new paradigms and make meaning out of what is in hand. Guided by this philosophy, the schools got together under the umbrella of able leaderships and could create interesting stories to unfold in the form of graphical representation with the objective to learn finer nuances of the trait.



The whole journey has been enriching and there are many people to thank for lending us all the support and with their guidance we could see the light at the end of the tunnel.

All the Very Best to the entire team!

Trilok Singh Bist

Principal





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