

PLANTS

PLANTS

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1. Main objectives:

1. To use vocabulary related to plants.
2. To identify the different parts of plants and flowers.
3. To recognise Mendel as an important biologist.
4. To show an understanding of the importance of light for plants.
5. To be able to have a weekly register of an experiment.

2. Useful websites.

<http://www.mbgnet.net/bioplants/>

Clear information about plants: how they make their own food, parts of a plant, adaptation, pollination...

<http://www.urbanext.uiuc.edu/gpe/index.html>

Interactive website for children, with information and activities about plants.

<http://www.pbs.org/wnet/nature/plants/>

Discover how plants adapt to the different environments, how seeds are dispersed... Videos available.

<http://www.backyardnature.net/botany.htm>

Information about plants and their parts.

www.teachers.tv

Videos for children. It discusses how plants are adapted to their environments.

PLANTS

water

bush

calyx

tree

carbon
dioxide

carpel

deciduous

herb

leaf

ovary

oxygen

perennial

petal

plant

pollen

root

sap

seed

sepal

stamen

stem

stigma

style

<p>plant</p>	<p>n. a living organism (such as a tree, grass) that absorbs water and inorganic substances through its roots and makes nutrients in its leaves by photosynthesis.</p> <p>"All plants need water and light."</p>
<p>perennial</p>	<p>adj. plants that have a life cycle lasting more than two years.</p> <p>"The orange tree is a perennial plant."</p>
<p>deciduous</p>	<p>adj. shedding its leaves annually.</p> <p>"Deciduous plants have leaves that fall off in Autumn."</p>

<p>tree</p>	<p>n. a woody plant, typically with a single stem growing to a considerable height and bearing lateral branches.</p> <p>"She sat in the shade of that tree."</p>
<p>bush</p>	<p>n. a woody low plant with many branches that arise from or near the ground.</p> <p>"A bush is smaller than a tree."</p>
<p>herb</p>	<p>n. a plant whose stem above ground does not become woody.</p> <p>"Basil is a herb used for cooking."</p>

<p>root</p>	<p>n. a part of a plant that grows down into the soil in search of food and water.</p> <p>"Plants use the root to absorb water."</p>
<p>stem</p>	<p>n. the central part of a plant above the ground, from which branches grow.</p> <p>"The stem of a bush is woody."</p>
<p>leaf/leaves</p>	<p>n. any of the green parts of a plant that are joined to its stems or branches.</p> <p>"This tree will lose all its leaves in Autumn."</p>

<p>sap</p>	<p>n. a liquid carrying food, chemical products, etc. through a plant.</p> <p>"Thanks to sap, plants can make their own food."</p>
<p>oxygen</p>	<p>n. a gas present, in the air, which is necessary for all forms of life on Earth.</p> <p>"Plants use oxygen in the photosynthesis."</p>
<p>carbon dioxide</p>	<p>n. gas produced when plants make the photosynthesis.</p> <p>"Plants need carbon dioxide to photosynthesise."</p>

<p>stamen/stamens</p>	<p>n. the male reproductive organ of a flower where pollen is produced.</p> <p>"Pollen is produced in the stamen."</p>
<p>carpel</p>	<p>n. the female reproductive organ of a flower. Sometimes called pistil.</p> <p>"The carpel consists of an ovary, a stigma, and usually a style."</p>
<p>style</p>	<p>n. the central part of a flower below the stigma.</p> <p>"Style is a part of the female reproductive organ of a flower."</p>

<p>petal</p>	<p>n. any of the coloured leaf-like divisions of a flower.</p> <p>"This flower has yellow beautiful petals."</p>
<p>pollen</p>	<p>n. fine dust of the male part of a flower that causes other flowers to produce seeds when it is carried to them.</p> <p>"Bees take pollen from flowers and help plants reproduce."</p>
<p>ovary</p>	<p>n. the part of a female plant that produces seeds.</p> <p>"The ovary is the place where the ovule will become a seed when fertilized by pollen."</p>

<p>sepal</p>	<p>n. any of the small leaves directly under a flower.</p> <p>"Sepals usually surround and protect the petals while they are developing."</p>
<p>seed</p>	<p>n. small hard object produced by plants, from which a new plant of the same kind can grow.</p> <p>"Seeds need water, warmth and air to germinate."</p>
<p>calyx</p>	<p>n. a ring of leaves which protects a flower before it opens. Also known as the flower bud.</p> <p>"Sepals of a flower form a protective layer called calyx."</p>

stigma

n. the central part of a flower that receives the pollen.

"Stigma is a part of the carpel."

PLANTS

Glossary.

bush: n. a woody low plant with many branches that arise from or near the ground.

calyx: n. a ring of leaves which protects a flower before it opens.

carbon dioxide: n. gas produced when plants make the photosynthesis.

carpel: n. the female reproductive organ of a flower.

deciduous: adj. shedding its leaves annually.

herb: n. a plant whose stem above the ground does not become woody.

leaf: n. any of the green parts of a plant that are joined to its stems or branches.

ovary: n. the part of a female plant that produces seeds.

oxygen: n. a gas, present in the air, which is necessary for all forms of life on Earth.

perennial: adj. a plant that have a life cycle lasting more than two years.

petal: n. any of the coloured leaf-like divisions of a flower.

plant: n. a living organism (such as a tree, grass) that absorbs water and inorganic substances through its roots and makes nutrients in its leaves by photosynthesis.

pollen: n. fine dust of the male part of a flower that causes other flowers to produce seeds when it is carried to them.

root: n. the part of a plant that grows down into the soil in search of food and water.

sap: n. a liquid carrying food, chemical products, etc. through a plant.

seed: n. small hard object produced by plants, from which a new plant of the same kind can grow.

sepal: n. any of the small leaves directly under a flower.

stamen: n. the male reproductive organ of a flower where pollen is produced.

stem: n. the central part of a plant above the ground, from which branches grow.

stigma: n. the central part of a flower that receives the pollen.

style: n. the central part of a flower below the stigma.

tree: a woody plant, typically with a single stem growing to a considerable height and bearing lateral branches.

Why are
plants
important?

How do plants
make their
own food?

What is a
plant?

How do plants
reproduce?

How can we
classify
plants?

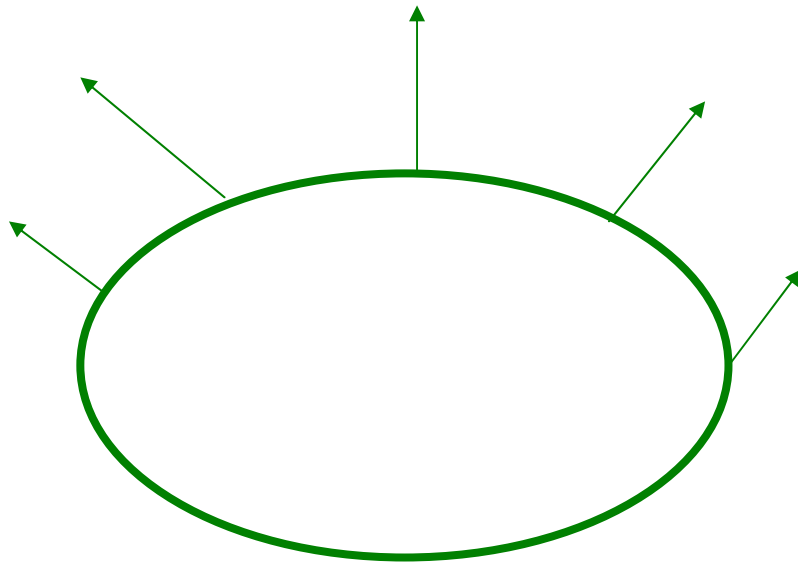
What are the
main parts of
a plant?

What is
photosynthesis?

What are the
main parts of
a flower?

Write 5 facts you know about plants.

Add more arrows if you know more.



Hands on activity 1/4

PHOTOTROPISM.

- Objectives:

To realise the importance of light for plants.
To have a register of experiments.

- Introduction.

In this activity, we are going to see the importance of light for plants and that plants always grow towards light. This is called phototropism.

You will need:

- A shoe box.
- Cardboard.
- A plastic glass
- Potting soil.
- Beans.
- Scissors.

Hands on activity 2/4

- Procedures.

First, you have to make some holes in the bottom of the plastic glass. Next, put some potting soil in it and plant two or three beans. Finally, water the beans and put them in a warm and sunny place. Beans will grow in a week approximately.

Then, tape three pieces of cardboard into the shoe box to make a small maze and make a hole at the top, as you can see in the picture.



Hands on activity 3/4

Before putting the plant into the shoe box, ask pupils some questions to predict what will happen.

As soon as the beans sprout, put the plastic glass in the shoe box where it is indicated in the picture.

Put the lid on the box and take it off every day to look at the plants and water them as necessary (keeping the soil wet). Be careful and put the lid back every day!

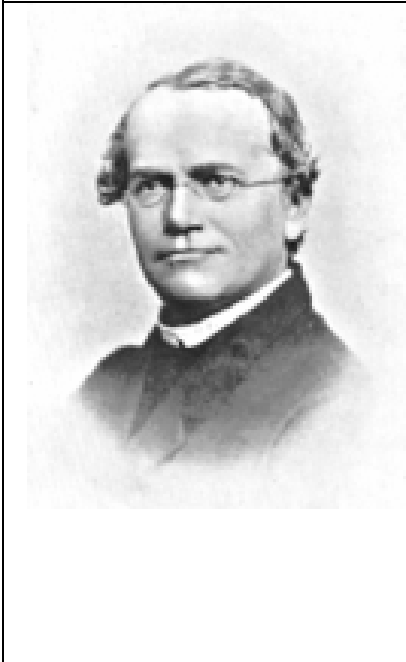
You will see the way plants will grow, and how long it takes them to grow out of the hole and into the light.

Hands on activity 4/ 4

CONTROL SHEET

	Date	Observations
Week 1		
Week 2		
Week 3		
Week 4		
Week 5		
Week 6		
Week 7		
Week 8		

GREGOR JOHANN MENDEL



Gregor Johann Mendel was born the 22nd of July, 1822 in Czech Republic. His father was a poor peasant. When he was 23 years old, he entered an Augustinian monastery in Moravia. In fact, he became prior of that same monastery some years later. He studied Mathematics and Science in the university of Vienna.

He investigated genetic inheritance and made a lot of experiments in the monastery's garden. He cultivated and tested more than 27.000 pea plants, paying attention to one or two characteristics every time, to see how inheritance works.

Mendel interpreted his results in a very similar way to how we do it now. This is an extraordinary fact, because he had less materials and knowledge, as chromosomes were unknown in those days.

He published an article with his results in 1866, but it was not considered important or relevant. But in 1900, some biologists recognized the importance of his work. They made crossing experiments and reached similar conclusions as **Mendel**, and as a result, he became known as one of the most important biologists. He died in 1884.

Answer the following questions:

1. Where did Mendel start cultivating plants for his experiments?

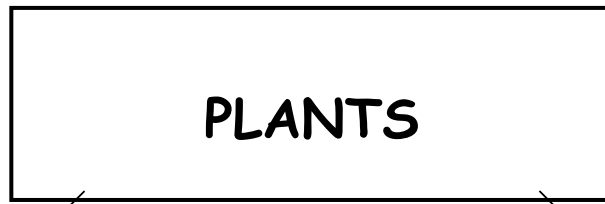
2. Was Mendel considered a very important scientist when he was alive?

3. How old was Mendel when he died?

4. Why can his results be considered extraordinary?

5. Name two physical features you think you have inherited from your parents.

Complete:

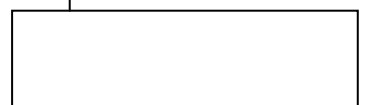
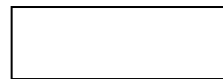


can be classified depending on...

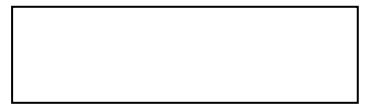
need

Size

If they lose their leaves



and



to make their own food.

This process is called

