CLASS 7 SCIENCE · 2026-27

Nutrition in plants

Nutrition in plants

31	25	3
QUESTIONS	MINUTES	EXERCISES

This belongs to _____ **Date** _____

WHAT YOU'LL GET GOOD AT

- States what photosynthesis needs and what it produces
- Explains the role of chlorophyll, stomata and root hairs rather than only naming them
- Distinguishes autotrophic, parasitic, saprotrophic, insectivorous and symbiotic nutrition
- Predicts what happens when one requirement is removed

Take your time, and have a go at every one. If you get stuck, look at the orange box — Ollie has already done one for you.

Nutrition in plants

Nutrition in plants · 31 questions · tick each box as you finish

Exercise 1 of 3 · 12 questions Name the part or substance, then say what it does. Both halves.

WRITE THE ANSWER

HERE'S ONE DONE FOR YOU

Chlorophyll -> the green pigment in leaves, which captures the energy of sunlight so it can be used to make food. Naming it is half the answer. In Class 7 the mark is almost always on the second half, so if your child's answer stops after the name, the question has not been answered yet.

1) Chlorophyll

2) Stomata

3) Roots

4) Sunlight

5) Carbon dioxide

6) Starch in a leaf

7) Oxygen

8) Water

9) Xylem

10) Guard cells

11) Nitrogen

12) Rhizobium

Exercise 2 of 3 · 11 questions Name the mode of nutrition, and give the reason.

WRITE THE ANSWER

HERE'S ONE DONE FOR YOU

The pitcher plant is insectivorous - and the reason matters more than the label. It is green and does photosynthesise, so it is not a parasite; it traps insects because it grows in soil poor in nitrogen. Children often write 'it eats insects because it cannot make food', which is a common answer and not a correct one.

1) Cuscuta (amarbel) growing on a hedge

2) A mushroom growing on a rotting log

3) The pitcher plant

4) Rhizobium living in the root nodules of a pea plant

5) A mango tree

6) The Venus flytrap

7) A tapeworm in the human intestine

8) Lichen - an alga and a fungus living together

9) Bread mould growing on stale bread

10) A green algae in a pond

11) Cuscuta compared with a pitcher plant

Exercise 3 of 3 · 8 questions Answer in two or three sentences.

WRITE THE ANSWER

HERE'S ONE DONE FOR YOU

The greased leaves: the plant weakens, because grease blocks the stomata, so carbon dioxide cannot get in. Notice the shape - what happens, then the mechanism, then why the mechanism matters. Almost every 'what would happen if' question in Class 7 Science wants those three, and it is worth counting them off before writing.

1) A potted plant is kept in a dark cupboard for a week. What happens to it, and why?

2) Why do farmers add manure and fertilisers to the soil?

3) Why is photosynthesis important for animals as well as for plants?

4) The leaves of a plant are smeared thickly with grease. What happens, and why?

5) Why is a leaf boiled in alcohol before the iodine test?

6) Why are pulses often grown in rotation with other crops?

7) Why do desert plants photosynthesise mainly through their stems?

8) Why does a plant kept in a sealed jar with no carbon dioxide stop growing, even in bright light?

All done? How did that feel?

Colour in a star. Three stars means you could teach it to someone else.

☆ ☆ ☆ Tricky · Getting there · Easy now

Answer key

For grown-ups

Nutrition in plants · keep this page back until your child has finished.

1. Name the part or substance, then say what it does. Both halves.

1) The green pigment in leaves. It captures the energy of sunlight so it can be used to make food.
2) Tiny pores on the surface of the leaf. They let carbon dioxide in and oxygen and water vapour out.
3) The underground part of the plant. They absorb water and minerals from the soil and carry them up to the leaf.
4) The energy source. Photosynthesis cannot happen without it, which is why the process stops at night.
5) One of the two raw materials. It enters the leaf through the stomata and supplies the carbon in the food made.
6) The food the plant has stored. Its presence is what the iodine test detects, turning the leaf blue-black.
7) A gas given out during photosynthesis. It leaves through the stomata and is the oxygen animals breathe in.
8) The second raw material. It is absorbed by the roots and carried to the leaf, where it is split using light energy.
9) The tissue that carries water and minerals. It moves them from the roots up the stem to the leaves.
10) The pair of cells around each stoma. They swell and shrink to open and close the pore, controlling water loss.
11) A mineral nutrient plants need to make proteins. Plants cannot take it from the air, so it must come from the soil.
12) A bacterium living in the root nodules of pulses. It converts nitrogen from the air into a form the plant can use.

2. Name the mode of nutrition, and give the reason.

1) Parasitic. It has no chlorophyll, so it takes ready-made food from the plant it grows on, which is harmed.
2) Saprotrophic. It secretes digestive juices onto dead and decaying matter and absorbs the dissolved nutrients.
3) Insectivorous. It makes its own food by photosynthesis but traps insects to get the nitrogen its soil does not supply.
4) Symbiotic. The bacterium fixes nitrogen the plant can use, and the plant gives it food and shelter - both benefit.
5) Autotrophic. It has chlorophyll and makes its own food from carbon dioxide and water using sunlight.
6) Insectivorous. It photosynthesises but traps insects for nitrogen, because the soil it grows in is poor in it.
7) Parasitic. It absorbs digested food from the host's intestine and gives nothing in return, harming the host.
8) Symbiotic. The alga makes food by photosynthesis and the fungus provides shelter and absorbs water - both gain.
9) Saprotrophic. It secretes digestive juices onto the dead bread and absorbs the dissolved nutrients.
10) Autotrophic. It contains chlorophyll and makes its own food using sunlight.
11) Both lack a full supply of something. Cuscuta is parasitic and has no chlorophyll at all, while the pitcher plant is insectivorous and photosynthesises normally but is short of nitrogen.

3. Answer in two or three sentences.

1) It turns pale and eventually dies. Without sunlight it cannot photosynthesise, so it makes no food, and once the stored food runs out it has no source of energy.

2) Because plants take mineral nutrients such as nitrogen from the soil, and repeated cropping uses them up. Manure and fertilisers put those nutrients back so the soil can support the next crop.

3) Because animals cannot make their own food and depend, directly or indirectly, on plants for it. Photosynthesis is also the process that releases the oxygen animals need to breathe.

4) The plant cannot photosynthesise properly and will weaken. Grease blocks the stomata, so carbon dioxide cannot enter the leaf and oxygen and water vapour cannot leave it.

5) Because alcohol removes the green chlorophyll from the leaf. Without that colour removed, the blue-black of the iodine test could not be seen against the green.

6) Because pulses have Rhizobium in their root nodules, which puts nitrogen back into the soil. That restores what the previous crop took out, so less fertiliser is needed.

7) Because their leaves are reduced to spines to cut down water loss. The stem takes over the job, holding the chlorophyll and doing the photosynthesis instead.

8) Because carbon dioxide is one of the two raw materials of photosynthesis. With light and water but no carbon dioxide, the plant cannot make food, so it has no source of energy to grow.

WHILE YOUR CHILD WORKS

- One question does most of the work here: 'and what does it do?' Ask it every time an answer stops at a name.
- The 'what would happen if' questions are the real test of the chapter. A child who can do those has understood photosynthesis rather than memorised it.
- Diagrams are marked on labels. A leaf drawn beautifully with three labels scores less than a rough one with seven.