SCIENCE • AGES 11 TO 14 • PHOTOSYNTHESIS AND PLANT NUTRITION

Words that grow

Own a science word: what it means, what it is like, what it is not.

NAME _____ CLASS _____ DATE _____

LEARNING GOAL

I can explain what photosynthesis means and use the word accurately in science writing.

SUCCESS CRITERIA

- ☐ I can split a science word into parts to unlock its meaning.
- ☐ I can fill all four squares of a Frayer model.
- ☐ I can judge true or false ideas about plant food, with a reason.

1 Meet the words

Say it, split it, see it

Say each word aloud (**capitals** show the stressed part), then see how its parts build the meaning.

photosynthesis

SAY **foh-toh-SIN-thuh-sis**

photo light + **synthesis** putting together

From Greek: using **light** to **put together** food.

chlorophyll

SAY **KLOR-uh-fil**

chloro pale green + **phyll** leaf

From Greek: the green substance in leaves that absorbs light.

producer

SAY **pruh-DYOO-ser**

pro forward + **ducere** to lead

From Latin *producere*, to bring forth: it makes its own food.

2 A Frayer model, done for you

WORKED MODEL

Read all four squares. Notice that each Non-example says **why** it does not fit.

TARGET WORD

producer

noun

D Definition

An organism that **makes its own food**. Green plants and algae are producers: they use light energy to make glucose by photosynthesis.

C Green plant examples

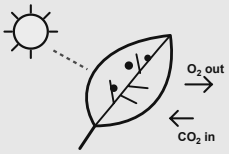
- Green plants and the algae in these examples: contain chlorophyll in chloroplasts; use light, carbon dioxide and water for photosynthesis.
-

E Examples

- YES grass in a meadow
- YES an oak tree
- YES seaweed (an alga)
- YES phytoplankton in the sea

N Non-examples

- NO **rabbit:** eats plants, so it is a consumer
- NO **mushroom:** a fungus that feeds on dead material
- NO **human:** we must eat other organisms



SCIENCE YOU WILL NEED ON PAGE 2

carbon dioxide + **water** $\xrightarrow[\text{chlorophyll}]{\text{light energy}}$ **glucose** + **oxygen**

It happens in **chloroplasts** (the dots), which contain green **chlorophyll**. Most are in leaf cells.

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Your Frayer model: photosynthesis

3 Example or non-example?

4 marks

Is photosynthesis happening? Write **E** (example) or **N** (non-example) in each box.

- ☐ A sunflower leaf making glucose in sun
- ☐ A rabbit digesting grass
- ☐ Pondweed bubbling oxygen in light
- ☐ A mushroom on a rotting log
- ☐ Roots taking up water from soil
- ☐ Seaweed in sunlit shallow water
- ☐ Yeast fermenting sugar
- ☐ A green cactus stem in sunlight

4 Build your Frayer model

8 marks

WORD BANK: light energy | chlorophyll | chloroplasts | carbon dioxide | water | glucose | oxygen

D Definition *Start: Photosynthesis is the process ...*

C Characteristics *Needs? Where? Makes?*

TARGET WORD
photosynthesis
noun

E Examples

N Non-examples *Say why*

5 Use it in a sentence: include the word producer

2 marks

Animals depend on photosynthesis because _____

6 Quick check: circle T or F, then say why

3 marks

a Plants get their food from the soil. (T) (F)

Because _____

b Oxygen is made during photosynthesis. (T) (F)

Because _____

c Plants only photosynthesise; they do not respire. (T) (F)

Because _____

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