

Year 8 Work Pack 4

P2.1 – Electricity and Magnetism

B2.2 – Ecosystem processes

Home learning 1 – Safety speech

Write a speech about electrical safety for a primary school audience

It must contain the following

- 3 hazards of electricity
- 3 things that you should never do
- What to do if you have a shock
- An engaging story about what could happen if you misbehave with electricity

Remember to use language that a year 6 would understand

Home learning 2 – Electricity in the home

Produce a poster about electricity in the home

You must include the points below:

- Prepare a list of 10 pieces of electrical equipment found in your home.
- For each item include the voltage supplied, either from the mains or a battery
- Give 5 rules for electrical safety in the home

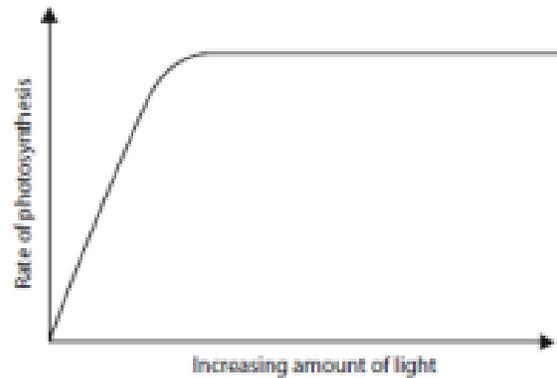
Important points

- Must be completed on a4 paper
- Use images of the 10 pieces you have chosen
- Do not include too much information. Summarise the points.

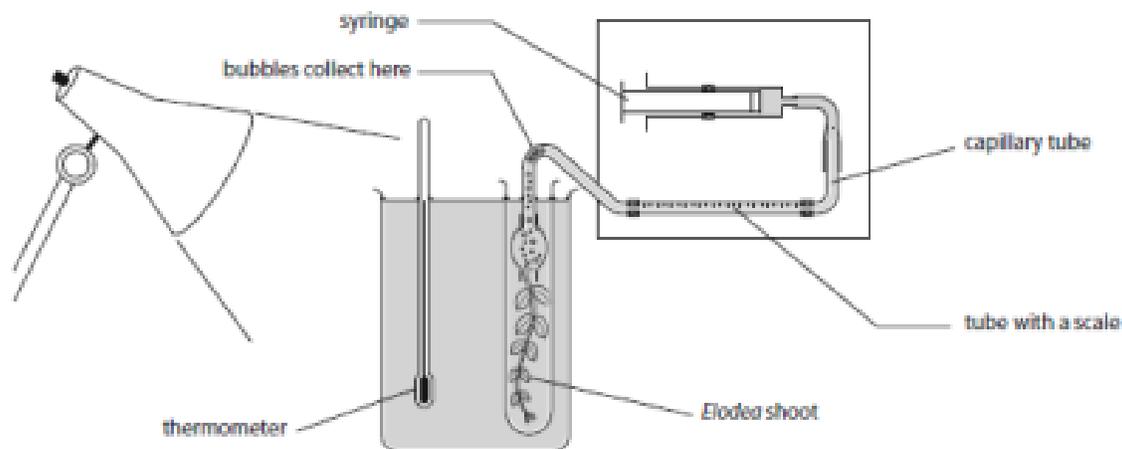
This piece of home learning can be done by hand or on a computer. If you are having issues printing it out email it to your teacher or bring it in on an USB stick

Home learning 3 – Photosynthesis

The graph shows that increasing the amount of light only increases the speed (**rate**) of photosynthesis by so much. After a certain point, no amount of extra light will increase the rate of photosynthesis. Some other factor (a **limiting factor**) is preventing the rate increasing. In this example, the limiting factor could be the amount of carbon dioxide.



The experiment below was set up. The lamp could be made brighter or dimmer. After 1 minute, at each light intensity, the syringe was pulled and the collected bubbles moved into the tube with the scale on it. The length of the bubble of gas collected in 1 minute was measured. The experiment was done twice, once with water containing 0.03% carbon dioxide and again with water containing 0.06% carbon dioxide.



Light intensity (lux)	Length of gas bubble in graduated tube – water containing 0.03% carbon dioxide (mm)	Length of gas bubble in graduated tube – water containing 0.06% carbon dioxide (mm)
0	0	0
500	10	15
1000	18	28
2000	28	46
3000	35	57
4000	39	65
5000	41	68
6000	41	70
7000	41	70

- 1** Plot the data as a line graph. Clearly label each line.
- 2** Look at the line produced in the water containing 0.03% carbon dioxide. Explain why it levels off.
- 3**
 - a** State one thing you could do to the experiment to collect a bubble of length greater than 70 mm.
 - b** Explain why this would work.
- 4** What length would you expect the bubble of gas to be if the light was at an intensity of 3500 lux and the percentage of carbon dioxide was:
 - a** 0.03%
 - b** 0.06%?
- 5** What light intensity would you expect to need to obtain a bubble of gas that had a length of 25 mm, if the percentage of carbon dioxide was: **a** 0.03% **b** 0.06%.
- 6** On your graph, sketch the line you would expect if the water contained 0.045% carbon dioxide.
- 7** Name one other thing (besides concentration of carbon dioxide and the amount of light) that might be a limiting factor in photosynthesis.
- 8** A criterion is a rule that is used to judge how good something is. To judge evidence scientists often see how accurate the measurements are. Accuracy is a criterion.
 - a** Is the evidence from this investigation accurate enough to draw a conclusion?
 - b** Sometimes this experiment is done by counting the bubbles of gas that the pondweed produces. Why is this less accurate than the method above?

Home learning 4 – Food Chains

Find an example of bioaccumulation that has happened in the wild. Write a factfile about this example

It must include the following:

- A picture of the food chain
- Definition of bioaccumulation
- What substance is affecting the food chain
- How that substance gets into the food chain (e.g. insecticides from farming then getting into the water and inside fish)
- What affect this is having on each stage of the food chain