Experimenting factors needed for plant growth

Teacher's notes

The big question

What is the significance of the Poppy?

Level

First

Experiences and outcomes

I can convey information, describe events or processes, share my opinions or persuade my reader in different ways. **LIT 1-28a / LIT 1-29a**

I can help to design experiments to find out what plants need in order to grow and develop. I can observe and record my findings and from what I have learned I can grow healthy plants in school. **SCN 1-03a**

Additional resources

Poppy seeds can be ordered from the Poppyscotland Learning website: www.poppyscotland.org.uk/learning

Introduction

Before the children are involved in the following activities, they should share and discuss their knowledge of the poppy. Along with children's prior knowledge discuss the following:

- It is a flower which grows wild outside.
- It grows from a seed and produces a red flower.
- It is used to remember people who have been in war or conflicts.
- Plastic replicas are sold in November to raise money for ex-service personnel and their families.
- It became a symbol for wars after it grew in a place called Flanders Fields in Belgium and France once a war had finished.
- It symbolises new life.

Experimenting factors needed for plant growth (Science)

Discuss with the children what they think plants need in order to grow. Using their ideas set up an experiment to test their ideas, the experiments should include water and sunlight.

Firstly, divide the children into small groups and give them a poppy seed to plant into a plant pot each. Discuss instructions for doing this and allow groups to set up their experiment: e.g. fill pot half-full, place seed on soil and cover with soil then water.

Then give each group a variable that they will be investigating by not giving it to their seed including:

- Water – give no water but place in sunlight.
- Sunlight – place inside a black bin bag but give water and air.
- Air – place in a black bin bag and seal tight shut, pierce hoes in top to let some sunlight in.
- Temperature (cool temp) – place in a very cool place but water each day.

Experimenting factors needed for plant growth

Discuss the importance of a fair experiment with the children so they can clearly identify the reasons for the differences in growth. It will be important to stress the importance of only changing one variable per group.

It is also important to discuss what a control group is.

Set up a control experiment and once it sprouts a shoot each group should record what happens to their seed each week in their individual booklets (Appendix 1 – see below).

After five weeks discuss and record what factors are needed in order for a plant to grow. You should also, at this point, discuss the importance of setting up a fair experiment.

Learning intention

- I am learning how to set up a fair experiment.
- I am learning about what a plant needs to grow.

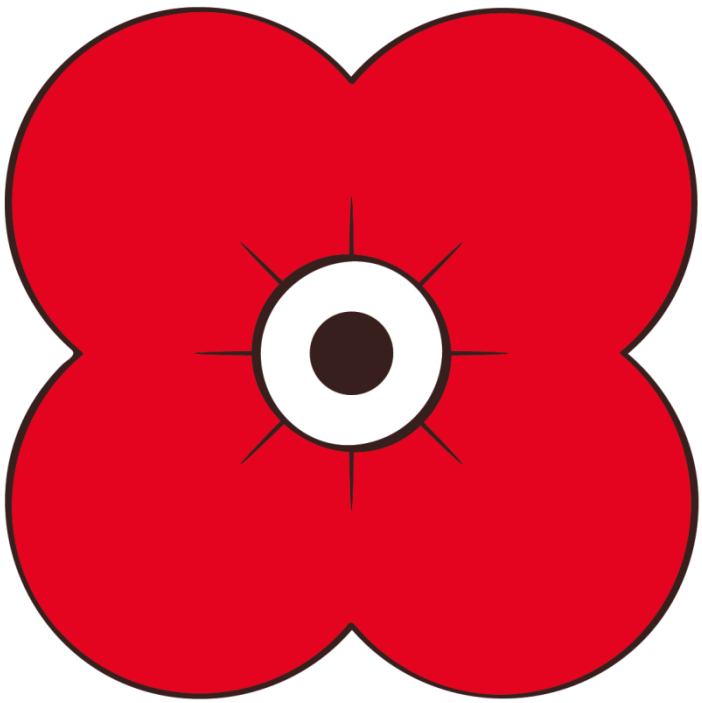
Success criteria

- I can set up a fair science experiment and change only one variable.
- I can talk about what factors a plant needs to grow.

Experimenting factors needed for plant growth

Appendix 1

Controlled group experiment



Investigated by:

We are investigating the effect of _____ on the poppy seed.

Experimenting factors needed for plant growth

poppyscotland Learning
Sowing the Poppy seed

This is what we noticed at the end of each week

Week 1 –

Week 2 –

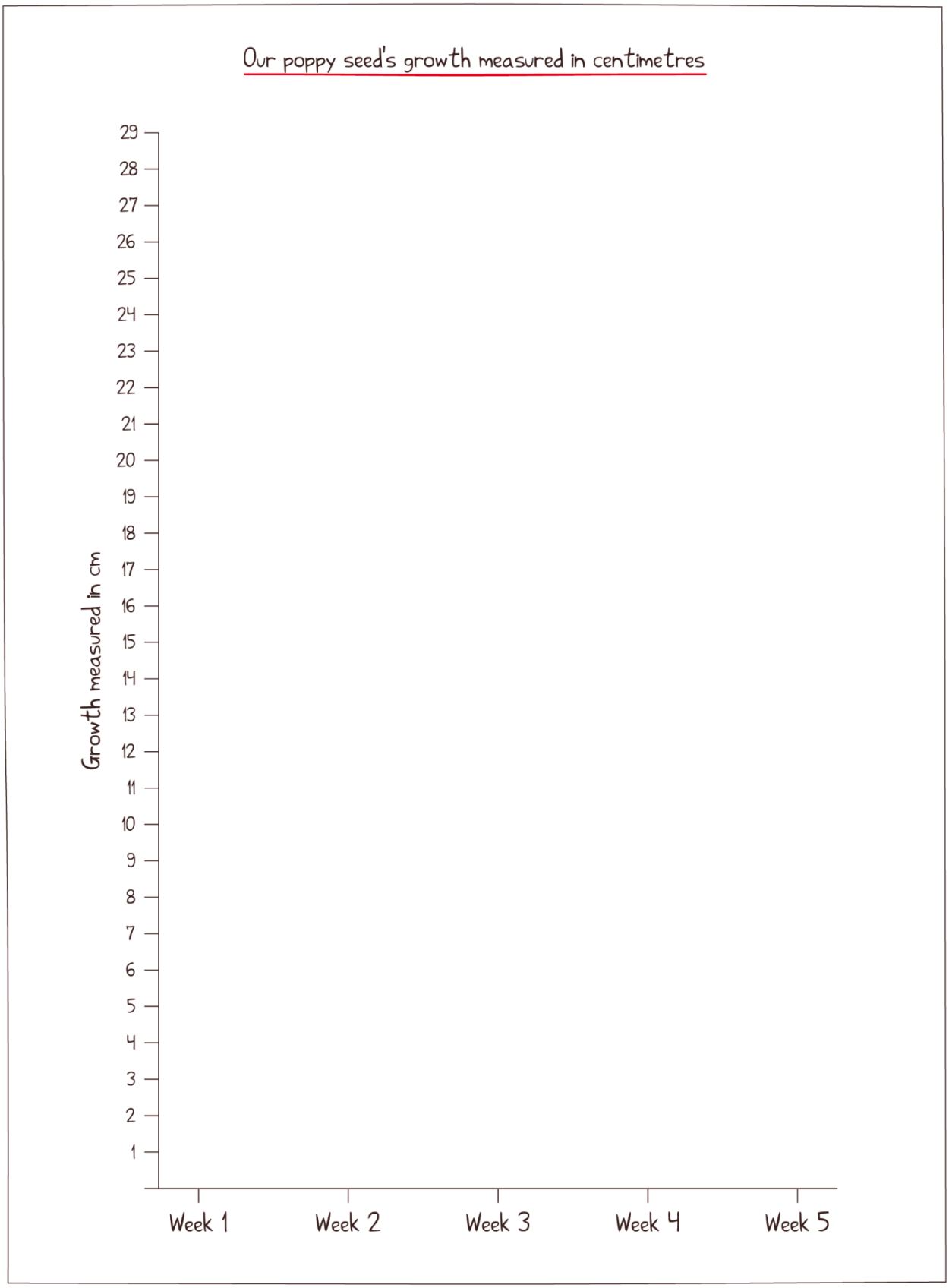
Week 3 –

Week 4 –

Week 5 –

Experimenting factors needed for plant growth

poppyscotland Learning
Sowing the Poppy seed



Experimenting factors needed for plant growth

What progress have I made today?

Early level I can explore, observe and discuss basic needs of plants. Some basic needs are…	**1st level** I can observe and explain the outcomes from growing plants in different conditions, for example, light, water, air, soil/nutrients and heat. Plants grow quickly when…
2nd level I can uses findings from the investigation to explain the effects of fertilisers on plant growth. The effects of fertilisers are…	

Experimenting factors needed for plant growth

Peer marking exercise / self-assessment

Tick all that apply

Experiences and outcomes

- ☐ I can show information about plant growth in different ways. **LIT 1-28a / LIT 1-29a**
- ☐ I can help to design experiments to find out what plants need in order to grow and develop. I can observe and record my findings and from what I have learned I can grow healthy plants in school. **SCN 1-03a**