Growing seeds

Mathematics learning objectives

Framework:

- **U&A**: Answer a question by selecting and using suitable equipment, and sorting information, shapes or objects; display results using tables and pictures.
- **HD**: Answer a question by recording information in lists and tables; present outcomes using practical resources, pictures, block graphs or pictograms.

NC: Ma2, 1g; Ma2, 5a-b

Science learning objectives (NC)

- **Sc2, 3a**: Recognise that plants need light and water to grow.
- **Sc2, 3b**: Recognise and name the leaf, flower, stem and root of flowering plants.
- **Sc2, 3c**: Understand that seeds grow into flowering plants.

Vocabulary

Count, block graph, list, table

Resources

- Seeds, such as sunflower or runner bean; pots, compost, gardening equipment; uniform non-standard units of length, such as interlocking cubes

CD-ROM slideshow:

- Activity sheets: 'Growing seeds – table' (two copies for each child), 'Growing seeds block graph' (two copies for each child) and 'Sunflower challenge' (also p37)
- Images: 'Growing sunflower'; 'Growing seeds'
- Block graph tool

Introduction

Display the image 'Growing sunflower' and discuss what it shows. Ask the children if any of them have grown plants at home. Explain that they will be growing some seeds during the next few weeks. Show them the seeds and explain which plant they should grow. Explain that each group will grow seeds outside, with plenty of light, and also some seeds in the dark. They will check each week to find out how much their seeds have grown. They will also need to water them regularly, under supervision, so that the seeds are not overwatered. Plant the seeds as a group task with adult support. Each pot should be labelled with the names of the children.

Place one pot in a dark place, such as a cupboard, and the other one in the light. Once the plants are sturdy, decide whether to plant the ones in the light outside.

Children's task

Each week the children measure their plants. They keep separate records for the seeds in the light from those in the dark, using two copies of the activity sheet 'Growing seeds – table'. They should complete the sentences at the top of each table first, to say whether the plant is growing in the light or the dark, and how it was measured. The children measure the plant grown in the light and complete the table for this, then measure the plant in the dark. Each week they add a column of blocks to their 'Growing seeds block graph' activity sheet to show the growth. The block graph tool in the Kids Zone on the CD-ROM can be used to build a graph once all the data has been collected.

Differentiation

More confident: Encourage the children to work independently to measure, record and make their block graphs. Decide whether to introduce measuring in centimetres.

Less confident: Support the children in both measuring and recording their results.

Review

Look at the activity sheet 'Sunflower challenge' and answer the questions together. Each week ask the children questions about their block graphs such as:

- *How much has your plant in the light/dark grown?*
- *Whose plant has grown the most/least? Why do you think that was?*

At the end of this project create a graph of the results as a class, using the block graph tool in the slideshow. Ask:

- *In which week did your plant in the light grow the most?*
- *Did your plant in the dark grow the most in this week too?*
- *How much has your plant in the light grown altogether?*
- *How tall is the tallest plant?*
- *Why do you think the plants in the dark did not grow well?*
- *What do plants need in order to grow tall and strong?*

Now try this...

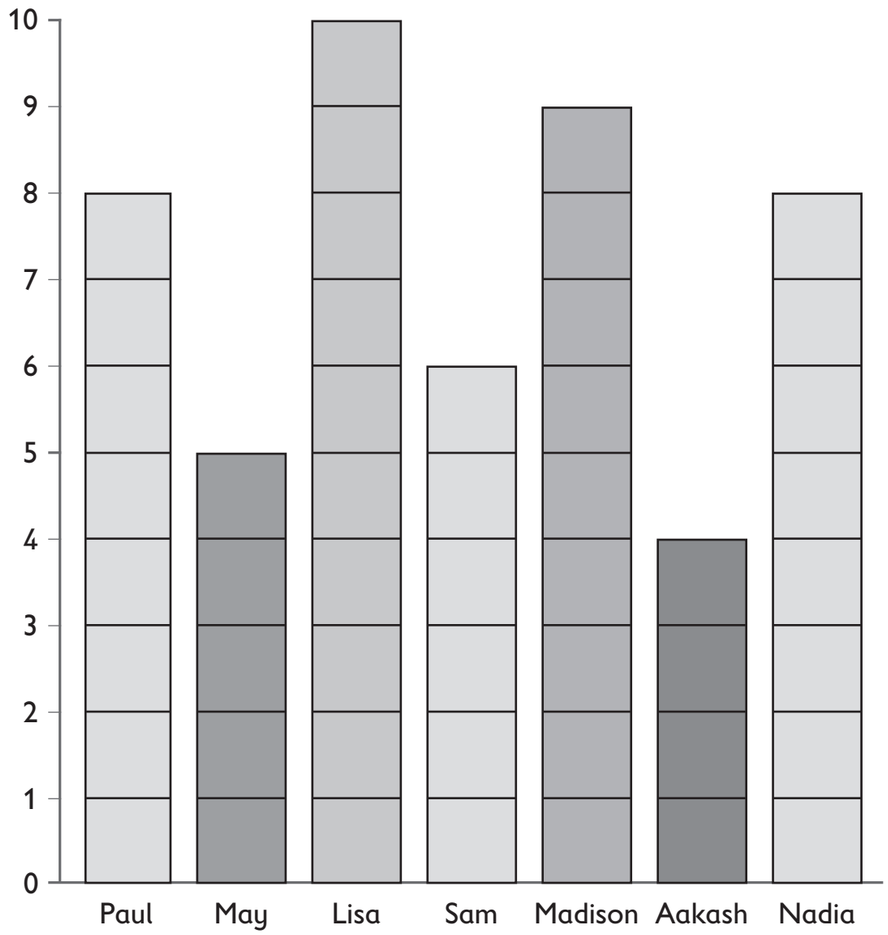
Measure and record the children's heights at half-termly intervals.

CD-ROM follow-up material

View the image 'Growing seeds' and ask the children to take turns to describe to a partner what is happening.

Sunflower challenge

- Look at this block graph. It shows the height of some sunflowers.
- Answer the questions below.



1. Who won the challenge?
2. Who came next?
3. Which two children had sunflowers that were the same height?
4. Whose sunflower was shortest?
5. How much taller was Lisa's sunflower than May's?
6. How much shorter was Aakash's sunflower than Nadia's?