

Food for thought

Related outcomes

- M 3.1 (a): A student selects from a range of units and measuring devices to measure accurately and record in practical situations.
- N 3.5: A student selects and uses appropriate mental, written and calculator techniques to approximate and calculate solutions to problems involving whole numbers, money and decimal fractions.
- S 3.5: A student displays, reads and interprets a variety of graphs.
- WM 3.4: A student gives a valid reason for a solution to an investigation and checks that the answer makes sense in the original situation.
- VA 12: A student appreciates that a mathematical model is a simplified image of some aspect of the social or physical environment.
- VA 14: A student appreciates how mathematics is used in a range of aspects of society.

Possible indicators

- A student can:
- read and interpret the scale on measuring devices
 - measure and record the heights of plants
 - solve realistic money problems
 - construct line graphs
 - make statements about data represented in a line graph
 - check for accuracy at each stage of a problem.

Syllabus links

Space	Graphs 6
Measurement	Length 10
Number	Money 6

Teaching activity

1. Discuss with students the issue that shortage of food is a problem in many countries. The world produces sufficient food for everyone, but it is not evenly distributed. To eliminate food shortage in overpopulated countries, it might be necessary to make more efficient use of space.
2. In small groups, students discuss possible locations on the school grounds where food could be grown. Suggestions might include growing in pots, small garden beds and in unused areas.
3. Students select a variety of easy-to-grow garden vegetables (or other food products) which would be appropriate for growing in the nominated areas.
4. Students devise a plan to be presented to the principal, which outlines the size of the area required for sowing, the number of seeds or seedlings needed, and the associated costs. Students determine the advantages of purchasing seeds instead of seedlings and vice versa. Value for money could be an additional consideration.
5. Students establish the garden bed and experiment with seeds of the same type in different growing conditions, or combinations of these conditions. Examples of growing conditions are: adding fertiliser to some of the seeds;

planting seeds at different depths in the soil; providing varying amounts of water and sunlight.

6. Students measure and record the growth rate of the plants on a regular basis (e.g. daily) for the different growing conditions. Have students decide how they will do this.
7. Using a different colour for each growing condition, students graph height against time for the same seed type on a line graph.
8. As a class, discuss and draw conclusions regarding the most favourable conditions under which to grow seeds or seedlings.

Language

costs, line graph, value for money, height, centimetres, measure

Equipment

seeds or seedlings, gardening implements, gloves, watering cans, fertiliser, rulers, soil, pots

