



Suggested time for activity

Half a session for the Research . One to two sessions for the Activity (discussion, measuring, preparing the quote). Consider asking students to complete unfinished tasks at home.

Assumed knowledge

Using a trundle wheel or tape measure to measure lengths. Calculator skills.

Equipment and other requirements for each group

Trundle wheels, 30 m tape measures. A few packets of unopened photocopy paper.

Teaching suggestions

A comprehensive dictionary will provide the answers to the research questions.

Arrange students in groups of three for the Activity. Ensure the student who measures has someone to check measurements taken. The third person should be the recorder.

Calculating the thickness of a sheet of paper is facilitated by measuring the thickness of a 500 sheet pack - no need to remove the wrapping.

Discuss the requirements of a quote - setting out, information to put into it, etc.

As an alternative to the students selecting parts of the boundary, the teacher could stipulate the parts of the boundary to be fenced. This would make answers uniform and easier to correct.

Check each group's choice of boundary to be fenced prior to allowing groups to perform the measuring.

Consider asking students to design a fencing firm's quotation sheet as part of the Activity requirements. It should include a suitable title for the firm and some artwork.

Suggested Answers

Research

- (a) An angstrom is a unit used in measuring the wavelengths of light, UV and X rays.
1 angstrom = 10^{-10} metres.
- (b) A nautical mile is a unit of length used in aviation and on the seas. It is one minute of longitude measured along the equator (on the surface of the Earth).
1 nautical mile = 1852 metres.
- (c) A light-year is a unit used to measure astronomical distances and is the distance light travels in one year. 1 light-year = 9.46×10^{12} kilometres.

Brain Teasers

- 1. $5.2\text{cm} \div 500 = 0.0104\text{cm}$ or 0.104mm . This could lead to a discussion of the meaning of 80 gsm.
- 2. $500 \div 29.7 = 14\,850 \text{ cm} = 148.5 \text{ m}$.

Activity

Check that reports include a detailed quotation and a sketch clearly indicating the parts of the boundary to be fenced.

Students successfully completing this activity have an understanding of these concepts and skills:

Reasoning.

Strategies for investigation.

Research skills.

Shape and space.

Measuring.

Using relationships.

Computation and applying number.