

# Decorating the Classroom

## An investigation using fractions and decimals

The classroom you are in needs decorating. So that the right amount of paint is bought, some calculations are needed as follows:

1. What is the height of the classroom?
2. What is the perimeter of the classroom?
3. What is the total area of wall, including windows, in the classroom?
4. What is the total area of windows in the classroom?
5. What is the total area of wall excluding windows?
6. Round-up to the nearest whole number the results of questions 3, 4 and 5.
  - a) Total area including windows =
  - b) Total area of windows =
  - c) Total area excluding windows =
7. Using the figures from question 6, write down and simplify the following fractions:
  - a) Fraction of total wall area filled by windows =
  - b) Fraction of total wall area without windows =
8. Using the fractions from question 7, write down the following as decimals:
  - a) The amount of total wall area filled by windows =
  - b) The amount of total wall area without windows =
9. If the walls are to be painted, the right amount of paint is needed. Each tin of paint will cover 8 square metres exactly. How many tins of paint will we need to paint the classroom walls?
10. If the seven other classrooms in the school were identical and also needed painting, how many tins of paint will we need then?
11. Below are the total wall areas to be painted for four other classrooms as fractions of *this* classroom's area to be painted.

Classroom W is  $\frac{2}{3}$  the area of this room  
Classroom X is  $\frac{1}{2}$  the area of this room  
Classroom Y is  $\frac{4}{5}$  the area of this room  
Classroom Z is  $\frac{3}{4}$  the area of this room

How many tins of paint will we need to paint each of these classrooms?