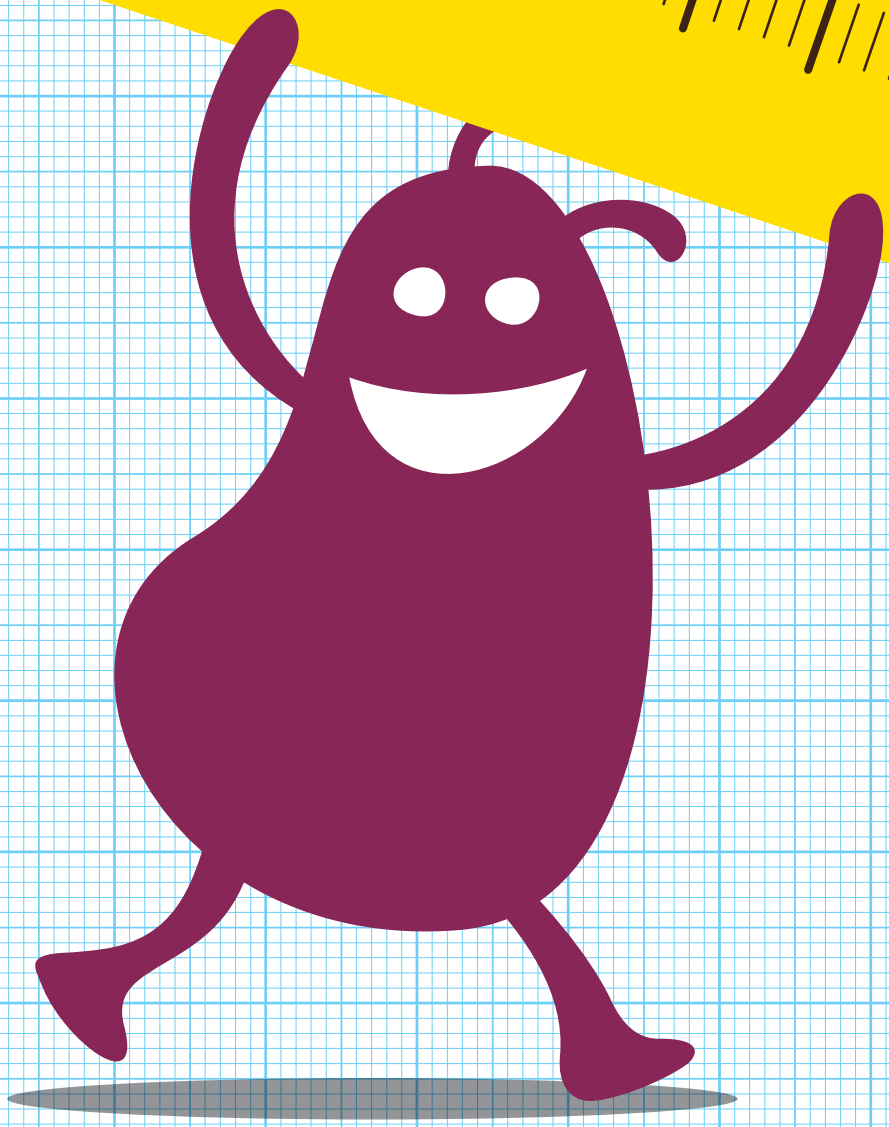
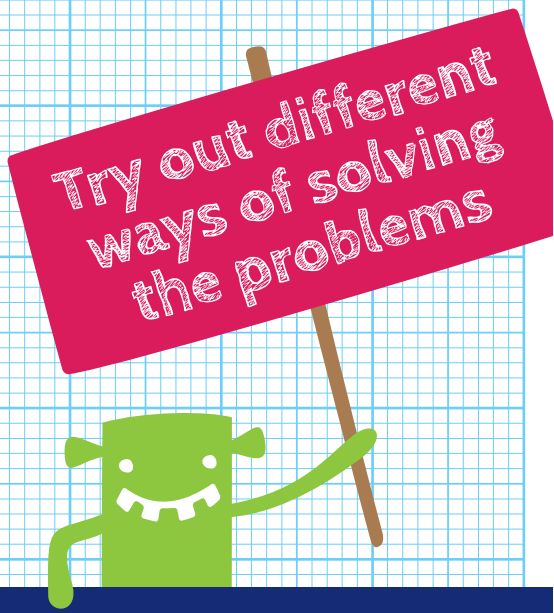
AREAS

Area for Fifth Class
Replacement Unit

Literacy and Numeracy Team, PDST
Dr Seán Delaney, Marino Institute of Education





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St Riaghan's, Drimnacrosh, Glenties, Co Donegal

Scoil an Chroí Naofa, Ballinasloe, Co Galway

Holy Cross Mercy School, Killarney, Co Kerry

Scoil Mhuire, Glenties, Co Donegal

Crannóg Buí N.S, Ardara, Co Donegal

Scoil Mhuire Convent Primary, Roscommon

Presentation Monastery Boys School, Killarney, Co Kerry

St Joseph's NS, Dundalk, Co Louth

Scoil Bhríde, New Inn, Ballinasloe, Co Galway

St Finabarr's Boys NS, Seskin, Bantry, Co Cork

Task 16 is based on a task devised by Professor Constance Kamii.

Dear Pupil

This unit has been written specially to help you learn about the topic of area. In order to successfully complete the unit you will need to do some maths tasks on area. Even if some of the tasks seem difficult or new to you at first, spend some time thinking about them and share your ideas with your classmates.

Try out different ways of solving the problems.

Of course you might come up with other ways to help you complete the tasks.

The main thing is not to give up too quickly.

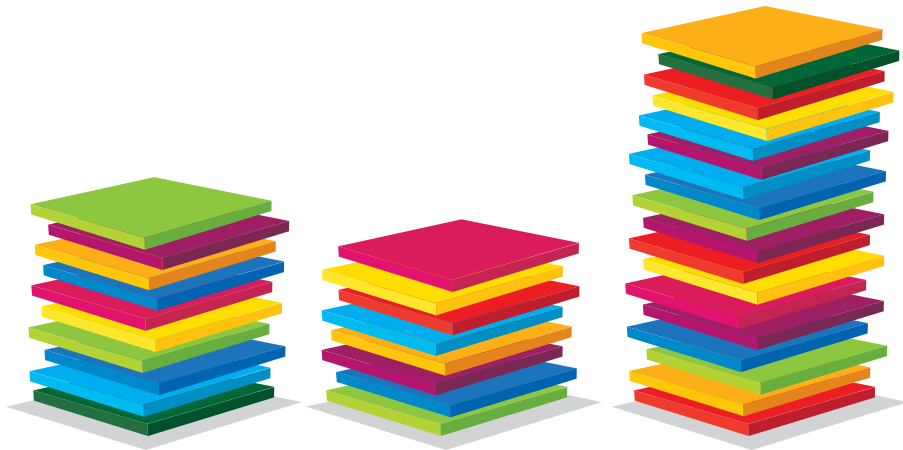
Good luck!

For this activity you will need to use either 36 square tiles or squares in your copybook to represent the tiles.

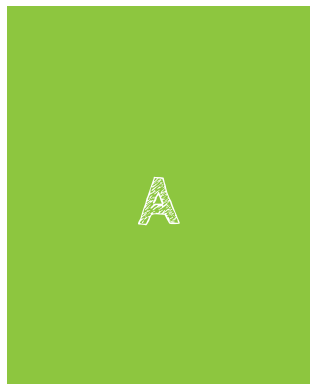
(i) Use 36 squares to make one rectangle.

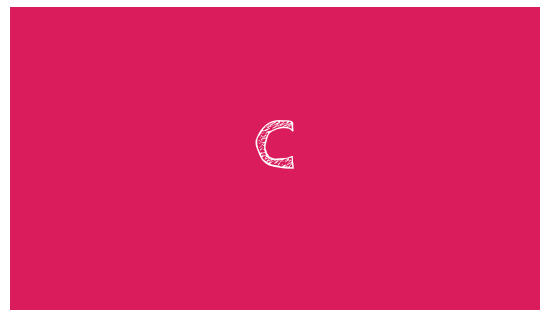
(ii) How many different rectangles can you make where each rectangle has 36 squares?

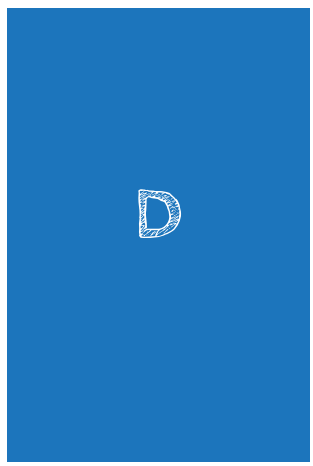
(iii) What are the dimensions of all the different rectangles you can make using 36 squares?

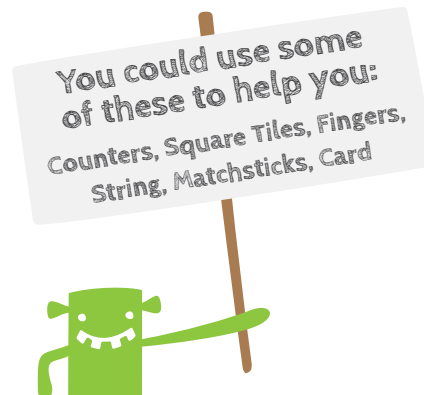


Look at the rectangles below. Which one takes up the most space on the page? Explain how you know.





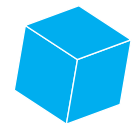




We use square centimetres to measure area.

This is what a square centimetre looks like:

Compare this to one face on a cube in a set of base ten materials. What do you notice?

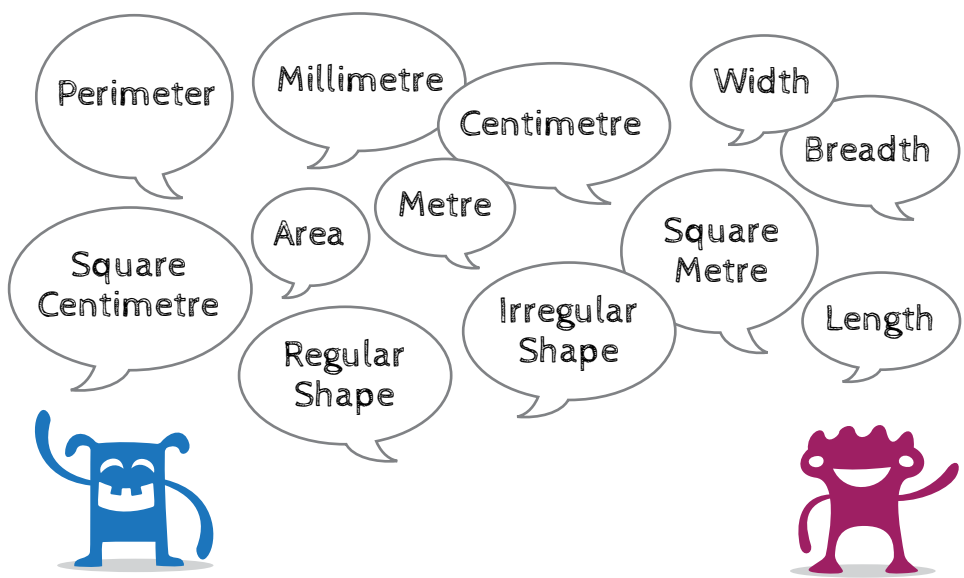


(i) Estimate how many of the square centimetres would fit inside each of the shapes in task 2.

(ii) Now check your answers.

Task 4

In this chapter we will be talking about area. Here are some of the maths terms you will meet. Discuss with your classmates and your teacher a working definition for each term.



Task 5

(i) Draw rectangles with the following side lengths in your copy.

(a) 4cm and 6cm (b) 8cm and 5cm (c) 7cm and 3cm

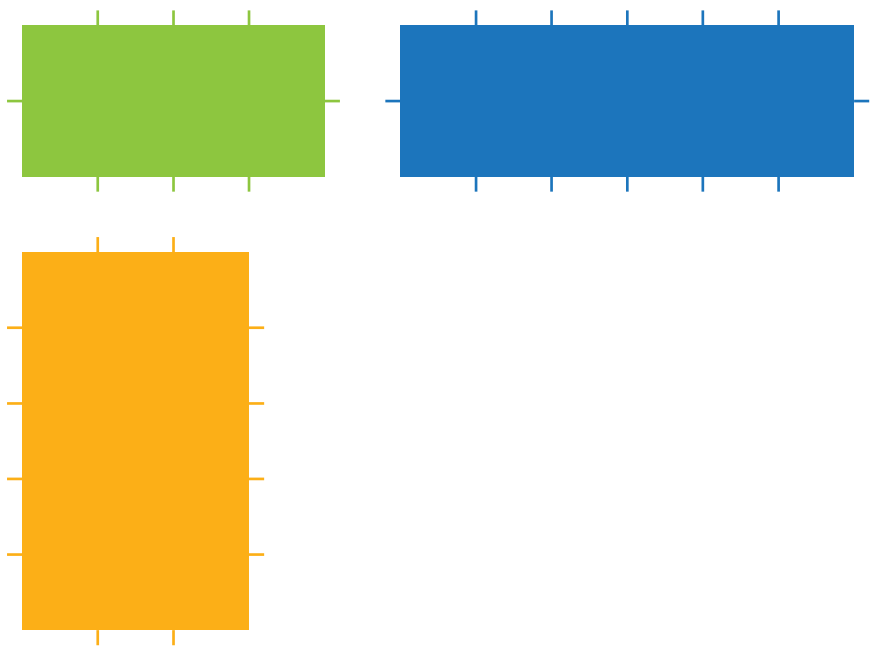
(ii) Estimate, in square centimetres, the area of each rectangle. Record your estimate in the table below.

(iii) Now, measure or calculate the area of each rectangle and record the details on the table below.

Rectangle	Estimated Area	Length	Breadth	Measured Area
(a)				
(b)				
(c)				

Task 6

Look at the rectangles below. Lengths of 1cm have been shown on the sides of the rectangles. How could you use this information to help you find the area of each rectangle?



Task 7

Gold leaf is a sheet of very thin gold. It is expensive and used on special occasions. It comes in square sheets with a side length of 12cm.

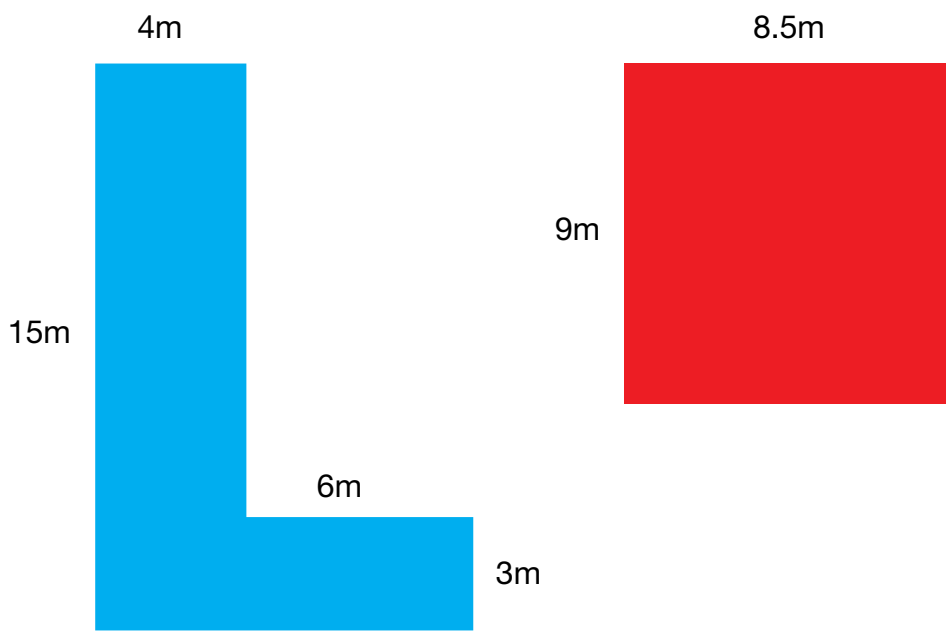
(i) How many sheets of gold leaf would be needed to cover your desk?

(ii) Explain your answer. Remember you can cut the gold leaf but you don't want to waste any of it because it is expensive.

Mr. O'Brien, the principal, wants to put older children into a classroom which has more floor space and younger children into a classroom which has less floor space. The children in fifth class measured the dimensions of two classrooms.

(i) If Mr. O'Brien is interested only in the floor area, which one should be used for the older children? Explain how you got your answer.

(ii) What other factors might Mr. O'Brien need to think about when choosing classrooms for the children?



(iii) How do the areas of these classrooms compare to the area of your classroom?

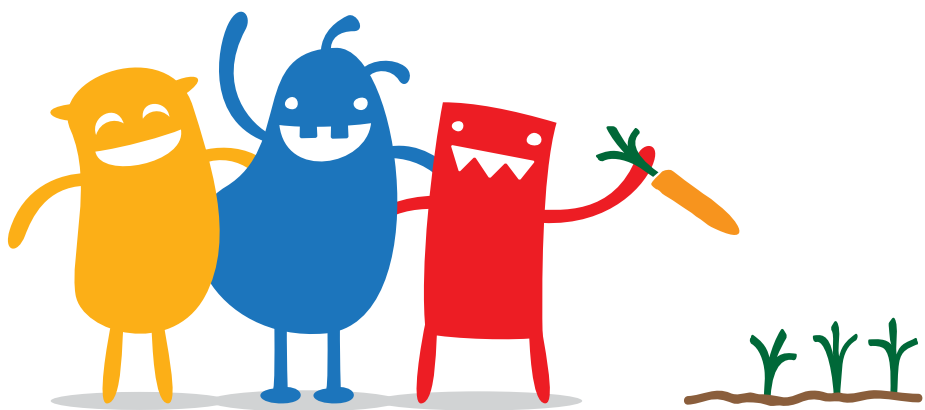
Task 9

There are two spaces in the school yard available for use as a vegetable garden for the children in fifth class. One is a rectangle measuring 14m x 6m. The other is a square with a side length of 9m. The class want to select the bigger space.

(i) Which space should they choose?

(ii) Why? Explain your choice to your classmates.

(iii) What are you measuring when you want to compare the amount of space in the two plots?



Task 10

Solve this problem with a partner.

Dublin Zoo has just received two new sheep for the Family Farm part of the zoo. The zoo keeper wants to build an enclosure for the sheep. She decides that the enclosure must be square or rectangular with an area of exactly 100 square metres.

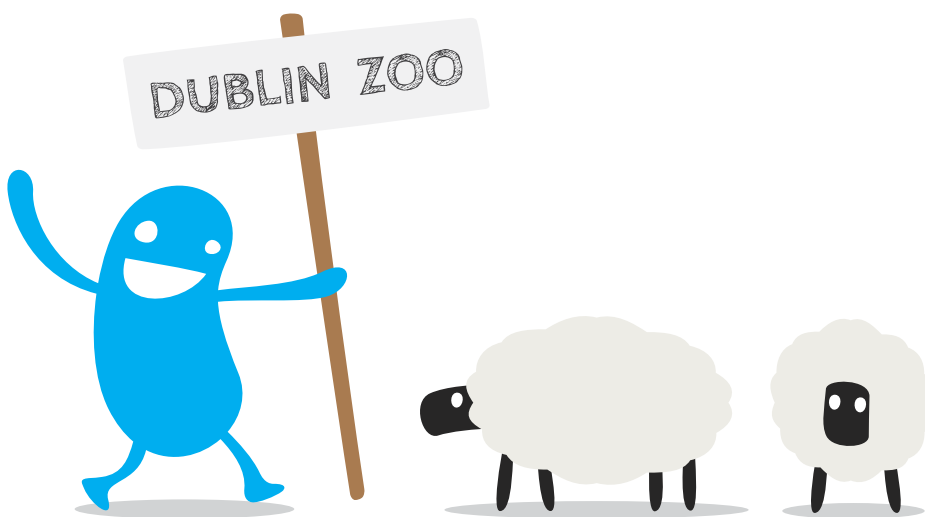
(i) Which different enclosures could she build?

(ii) How many metres of fencing will she need for each possible enclosure?

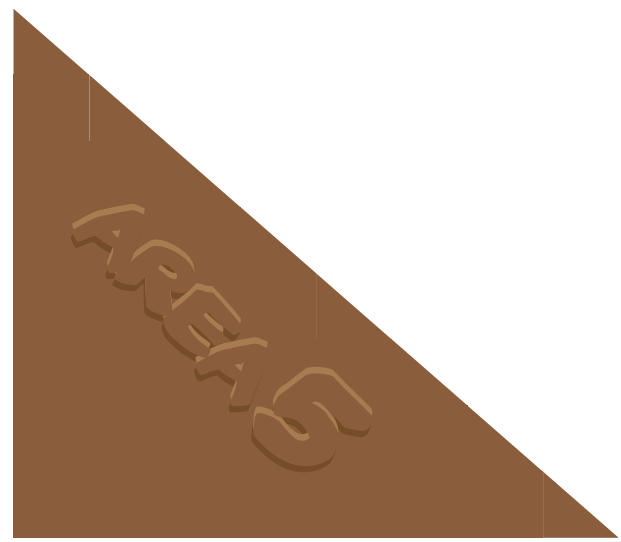
(iii) Use your copy or some graph paper to draw all the possible rectangular or square enclosures.

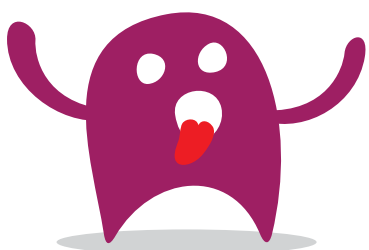
(iv) Include a key to tell how much each unit on your copy or graph paper equals.

(v) Which enclosure would you recommend that the zoo keeper builds? Why?



Rebecca's local sweet shop has chocolate bars of all shapes and sizes. Rebecca wants to buy one of the bars below. If both bars are the same thickness, which bar has more chocolate? Give a reason for your answer.





Use the internet or another source of information in your classroom to answer the following questions:

(i) Choose one province from Ireland. Find the area of the province.

(ii) What is the largest county in your chosen province?

(iii) What is the smallest county in your chosen province?

(iv) What is the difference in area between the largest and the smallest county in your chosen province?

(v) Find the area of the four provinces and order them from smallest to largest.

(vi) What is the difference in area between the largest and smallest province?

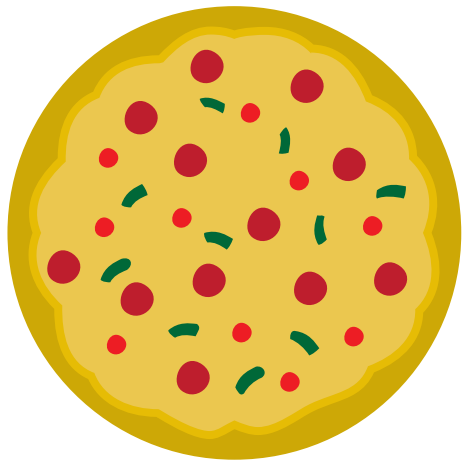
(vii) How would you find the total area of Ireland using the information you have gathered?

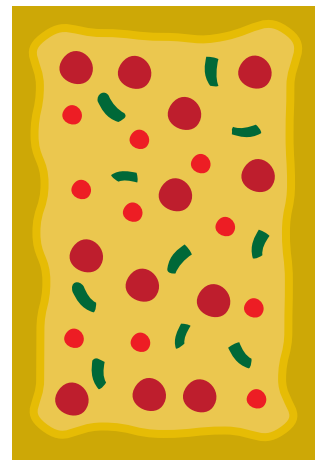
(viii) Name three counties whose combined area is smaller than County Cork.

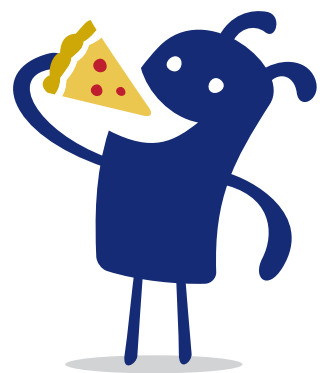
(ix) About how many times bigger in area than County Louth is County Tipperary?

Task 13

In your local pizza shop you have a choice of a circular mini pizza or a rectangular mini pizza as shown below. If they both cost the same price for the same toppings, which one is better value? Describe how you know.







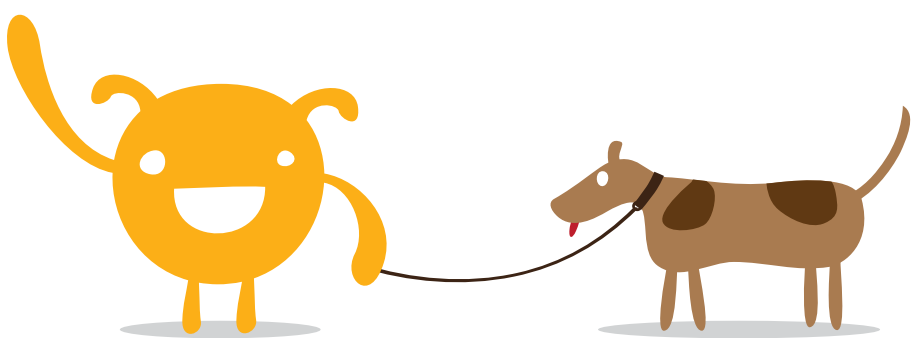
(i) Is it possible to have two shapes that have the same area and different perimeters? Explain your answer.

(ii) Is it possible to have two shapes that have the same perimeter and different areas? Explain your answer.

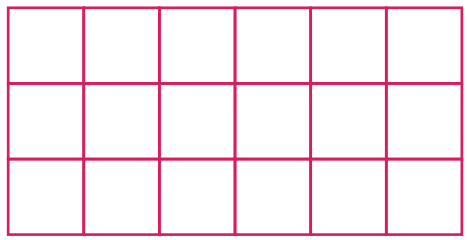
Task 15

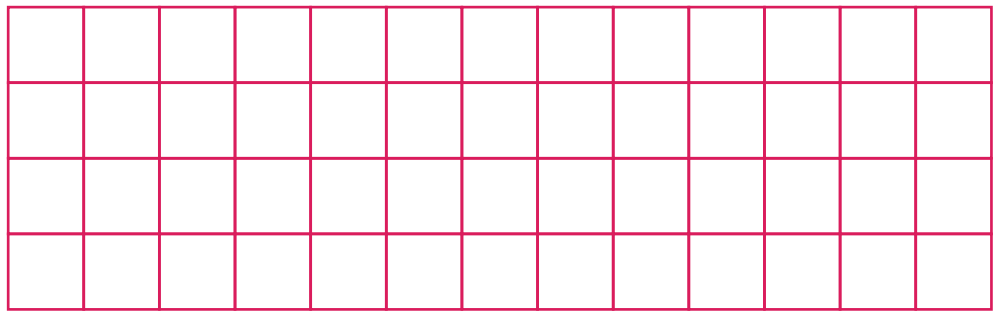
Mandy's dog likes to run around the perimeter of the garden. The garden is rectangular and it has an area of $40m^2$.

If one side of the rectangle is 8m long, how far does the dog run if he runs along the perimeter of the garden? Explain how you got your answer.



Look carefully at the rectangle on top. Draw a straight line on the strip below to show where you would make a straight cut so that the strip has exactly the same area as in the rectangle on top.





Each square is a square centimetre

Each small square is 4mm². Each bigger square is 1cm². Each large square is 4cm².

Professional Development Service for Teachers

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