

LO: Find the area of
rectilinear shapes
by counting squares.

Recap

A chocolate box has 4 squares on one side and 6 squares on the other. How many chocolates are there in the box?



Answer

Recap

A chocolate box has 4 squares on one side and 6 squares on the other. How many chocolates are there in the box?

The number of chocolates in the box can be calculated by multiplying the number of rows (4) in the box with the number of columns (6).

$$4 \times 6 = 24$$

There are 24 chocolates in the box.



This is a square sticky note.



Estimate how many sticky notes you need to make these shapes? _____



Now make the shapes using sticky notes.

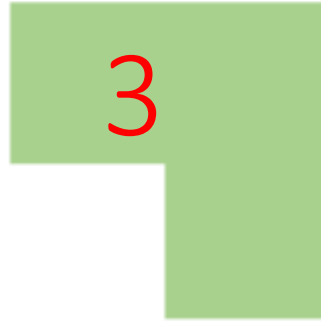
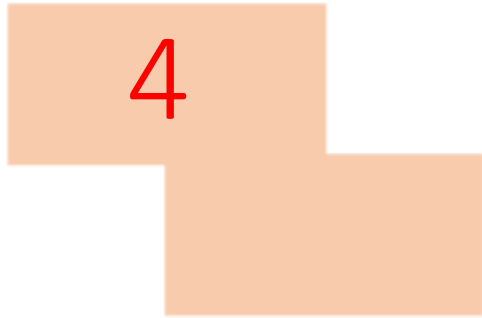
Which ones cover the largest amount of surface? Which ones cover the least amount of surface?

Answer

This is a square sticky note.



Estimate how many sticky notes you need to make these shapes?



Now make the shapes using sticky notes.

Which ones cover the largest amount of surface? Which ones cover the least amount of surface?

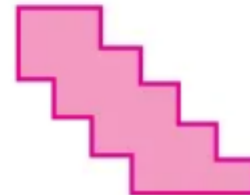
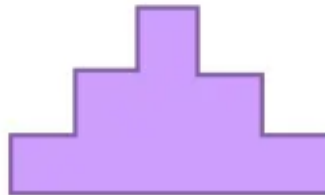
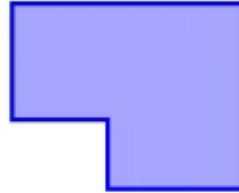
The pink shape covers the largest amount of surface.

The blue shape covers the least amount of surface.

What is a rectilinear shape?

A rectilinear shape can be defined as a plane figure or shape all of whose sides meet at right angles.

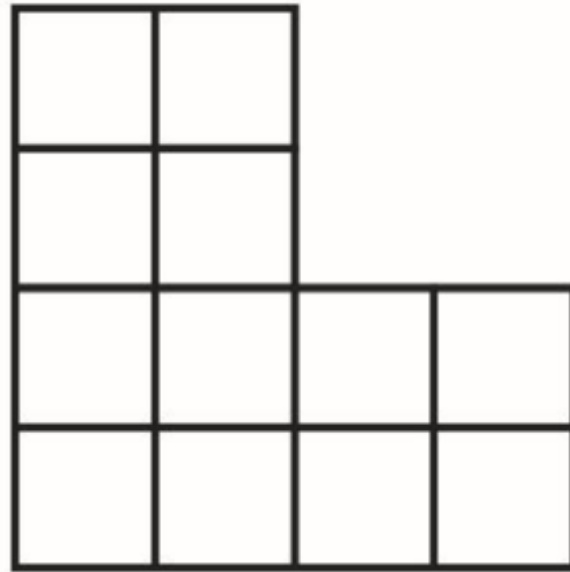
Rectilinear figures



What is perimeter of a shape?

The perimeter is the total distance around the shape.

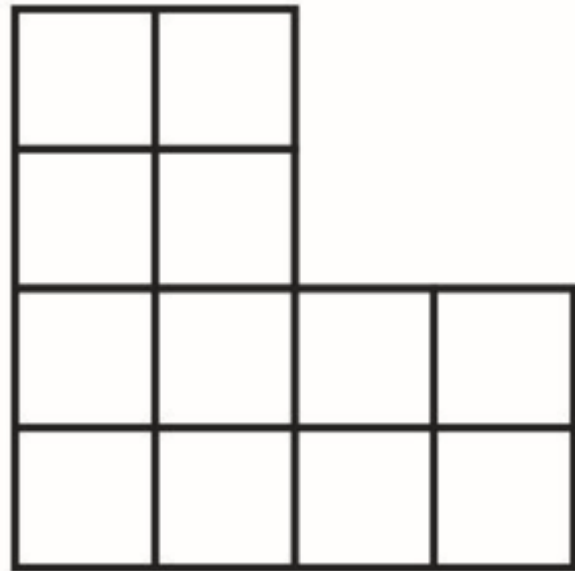
So what would be the perimeter of this shape?



Answer

What is perimeter of a shape?

So what would be the perimeter of this shape if the side of each square is 1 cm?



The perimeter is the total distance around the shape.

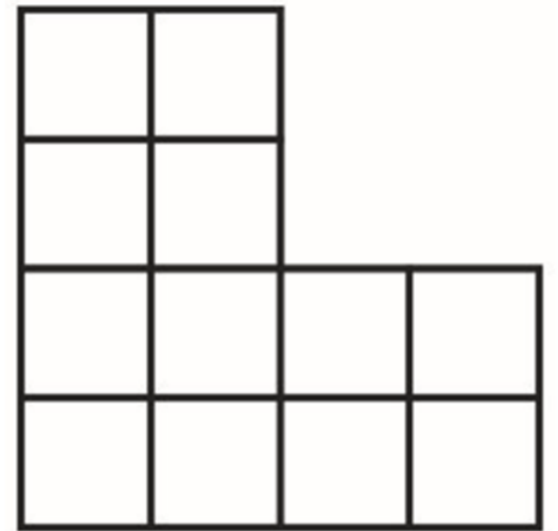
The perimeter of this shape can be calculated by counting the total distance **AROUND** this shape, which is equal to 16 cm.

Now we know what is a RECTILINEAR SHAPE
and we know what is PERIMETER of a shape.

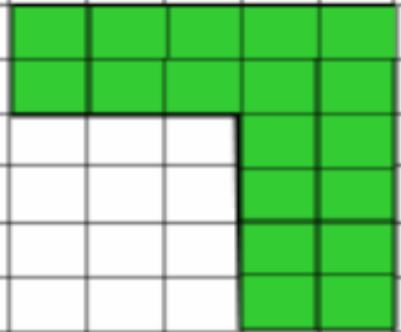
NEXT STEP is to identify the AREA of a
shape.

What is the Area of a shape?

AREA is the amount of space WITHIN a
closed shape.



To find out how much shape is inside we can count the squares.

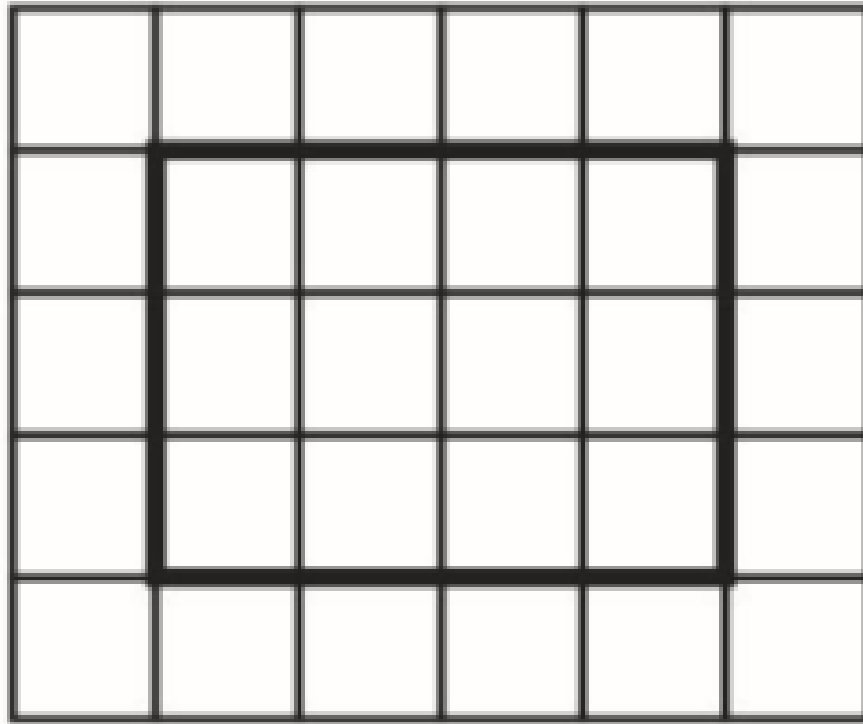


The area of a shape is the amount of space inside it.

The area of the shape is 18cm^2 .

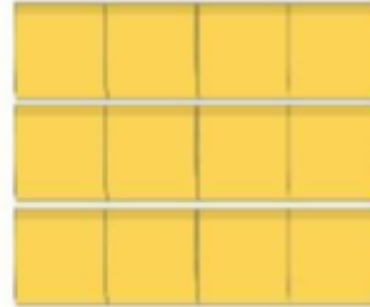
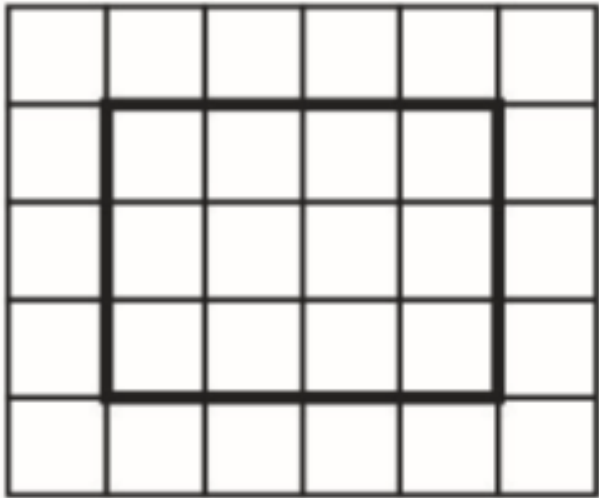


How will you calculate the area of this figure?



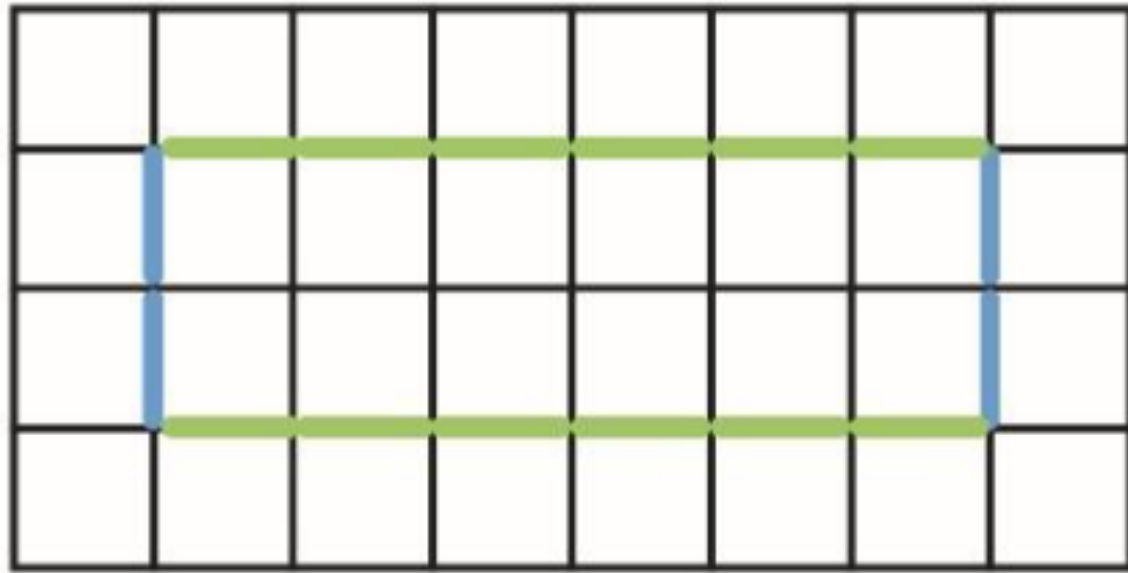
How will you calculate the area of this figure?

Answer



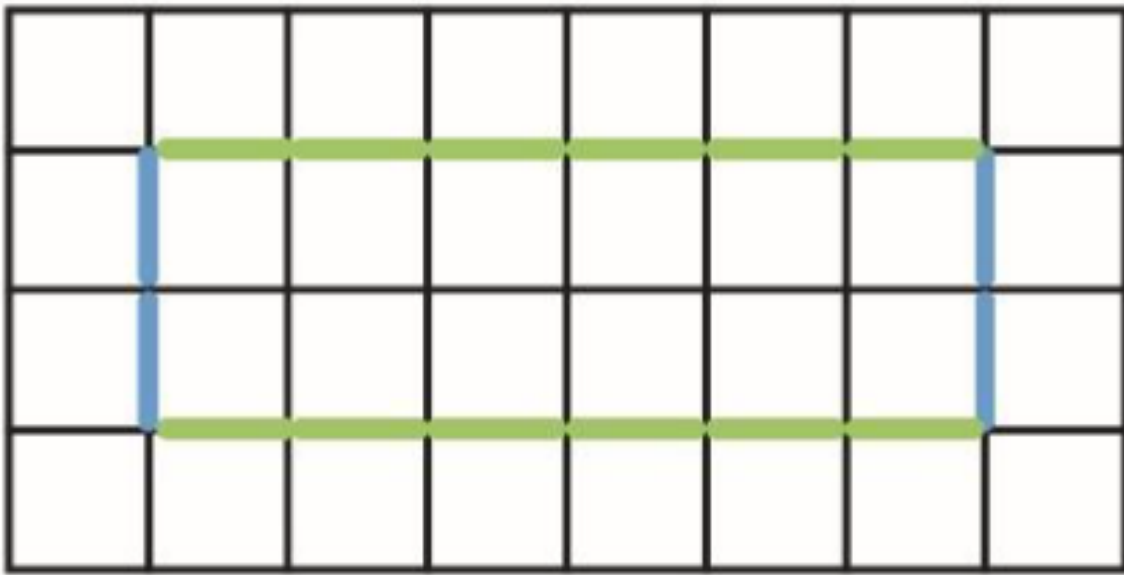
The length is 4 squares and
the width is 3 squares.
There are 3 groups of 4
squares.
The base fact is $3 \times 4 = 12$
The area is 12 squares.

How can I find the area of this shape? What should I look for? What do I need to know?



Answer

How can I find the area of this shape? What should I look for? What do I need to know?

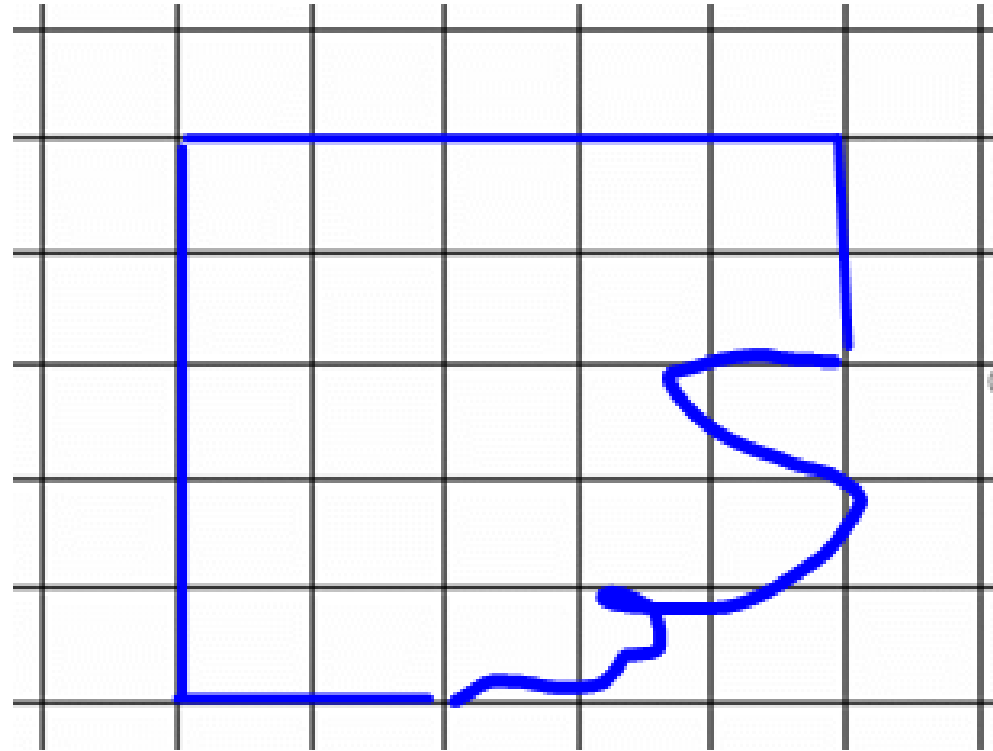


To calculate the area of this shape we need to know the number of rows and columns. There are 2 rows and 6 columns.

$$2 \times 6 = 12$$

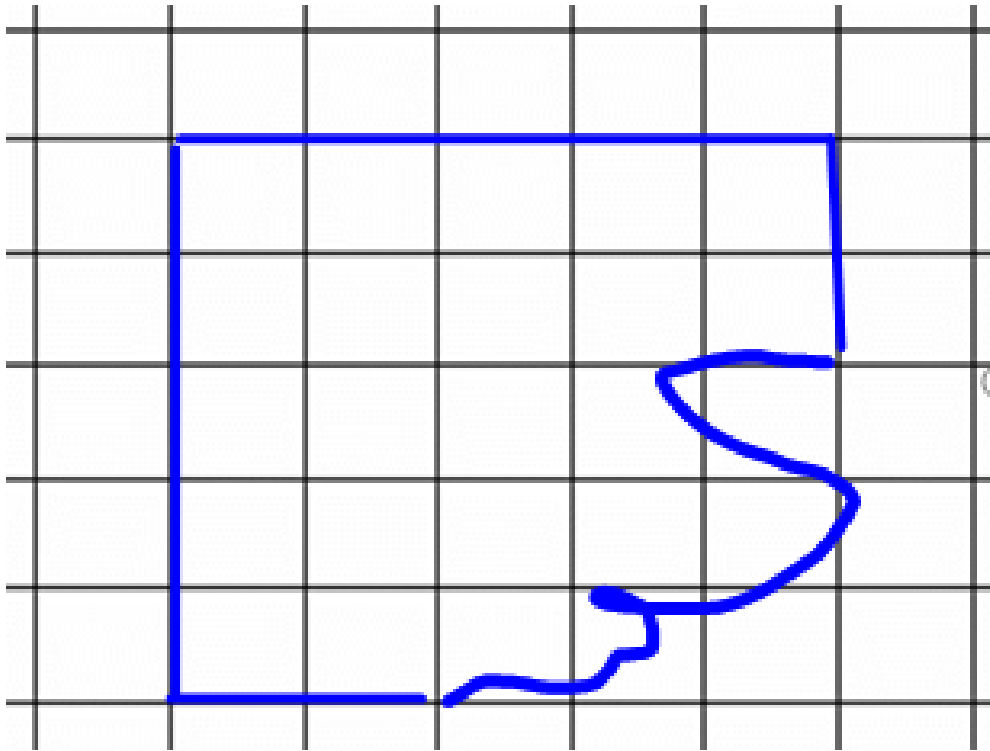
The area of this shape is 12 squares.

This rectangle has been ripped.
What do you think its Area is?



This rectangle has been ripped.
What do you think its Area is?

Answer



To calculate the area of this rectangle we need to know the number of rows and columns. There are 5 rows and 5 columns.

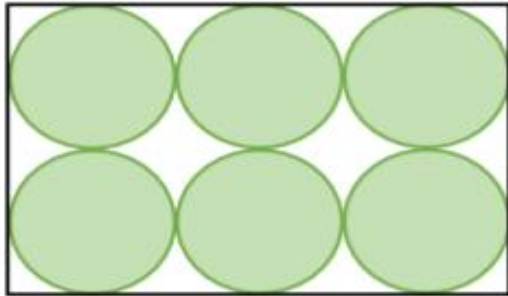
$$5 \times 5 = 25$$

The area of this rectangle is 25 squares.

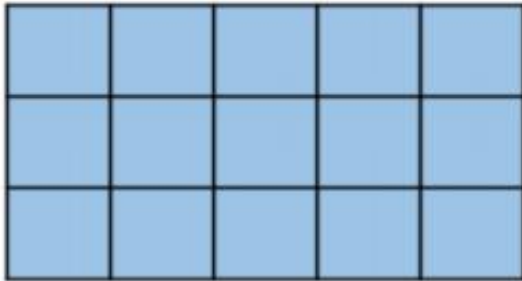
TASK 1

Teddy and Eva are measuring the area of the same rectangle.

Teddy uses circles to find the area.



Eva uses squares to find the area.



Whose method do you think is more reliable?
Explain why.

TASK 2

Two children have measured the top of their desk. They used different sized squares.



Dora

The area of the
table top is 6
squares.



Alex

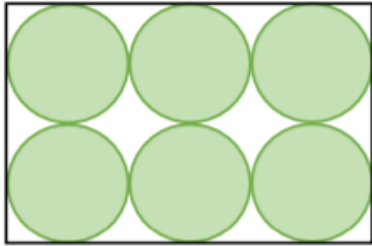
The area of the
table top is 9
squares.

Who used the largest squares?
How do you know?

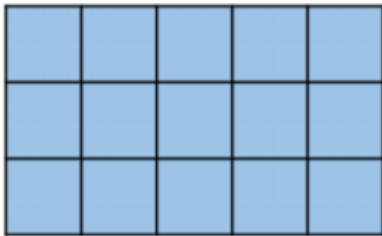
TASK 1

Teddy and Eva are measuring the area of the same rectangle.

Teddy uses circles to find the area.



Eva uses squares to find the area.



Whose method do you think is more reliable?
Explain why.

Possible answer:

Eva's method is more reliable than Teddy's because her squares cover the whole surface of the rectangle whereas the circles leave some of the surface uncovered.

TASK 2

Answer

Two children have measured the top of their desk. They used different sized squares.



Dora

The area of the table top is 6 squares.

The area of the table top is 9 squares.



Alex

Who used the largest squares?
How do you know?

Dora needed fewer squares to cover the space, so her squares must have been the larger ones. If the squares are smaller, you need more of them.

TASK 3

Dexter has taken a bite of the chocolate bar.



The chocolate bar was a rectangle.
Can you work out how many squares of chocolate there were to start with?

TASK 4

This rectangle has been ripped.



What is the smallest possible area of the original rectangle?

What is the largest possible area if the length of the rectangle is less than 10 squares?

TASK 3

Dexter has taken a bite of the chocolate bar.



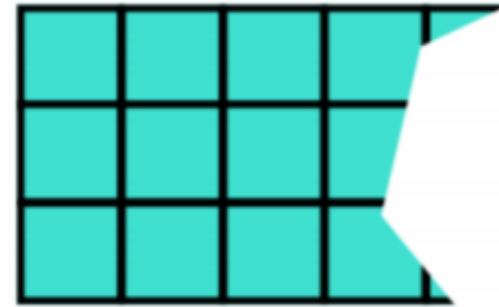
The chocolate bar was a rectangle.
Can you work out how many squares of chocolate there were to start with?

There were 20 squares. You know this because two sides of the rectangle are shown.

TASK 4

Answer

This rectangle has been ripped.



What is the smallest possible area of the original rectangle?

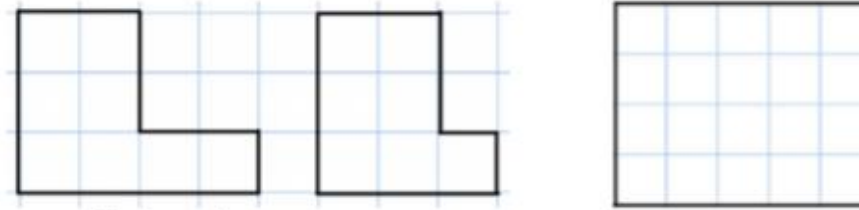
What is the largest possible area if the length of the rectangle is less than 10 squares?

Smallest area – 15 squares.

Largest area – 30 squares.

TASK 5

Complete the sentences for each shape.



The area of the shape is ____ squares.

TASK 6

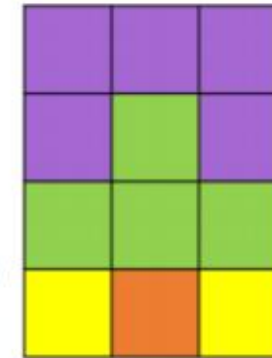
Here is a patchwork quilt.

It is made from different coloured squares.

Find the area of each colour.

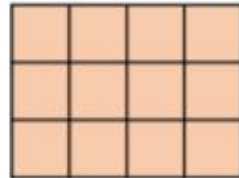
Purple = ____ squares Green = ____ squares

Yellow = ____ squares Orange = ____ squares



TASK 7

Jack uses his times-tables to count the squares more efficiently.



There are 4 squares in 1 row.

There are 3 rows altogether.

3 rows of 4 squares = 12 squares

Use Jack's method to find the area of this rectangle.

