BLOOMSM4TH

Makes Maths Fun

Level 7

AREA

Bloomsmath is a comprehensive mathematics program which provides a fun way for every student to be learning to the best of their ability.

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BLOOMSM4TH Makes Maths Fun

Level 7

Area

Level 7 is designed for students in their seventh year at school often called Year 6. Students will select and use the appropriate unit to calculate area, including the area of squares, rectangles and triangles.

Knowledge: Students will use a square piece of paper to discover the formula for the area of a triangle.

Students who demonstrate proficiency in this activity move on to Comprehension.

STOP

Students stop here as they require additional teacher support to master this activity.

Comprehension: Students will calculate the area of various square and triangular shapes.

Students who demonstrate proficiency in this activity move on to Application.

STOP

Students stop here if time has run out or they require additional support with this activity.

Application: Students will calculate rectangular area puzzles to solve the puzzle "Kitchen Chaos - Part 1"

Students who demonstrate proficiency in this activity move on to Analysis.

STOP

Students stop here if time has run out or they require additional support with this activity.

Analysis: Students will calculate more rectangular area puzzles in 'Kitchen Chaos – Part 2".

Students who demonstrate proficiency in this activity move on to Synthesis.

STOP

Students stop here if time has run out or they require additional support with this activity.

Synthesis: Students will measure the real dimensions of their kitchen and lino squares and find out how many are needed.

Evaluation: Suggested questions provide a starting point for discussions related to Area.

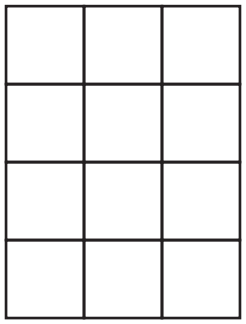
Students may complete more or fewer activities for each learning outcome depending on the time allocated and their strength in the area being covered.

All students should participate in the Evaluation discussion to encourage the use of mathematical language, logical reasoning and reflection on that which they have completed.

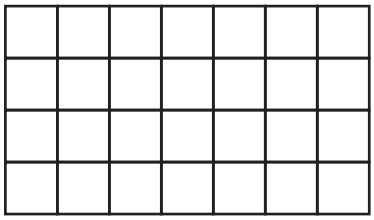
Name: _____

Knowledge

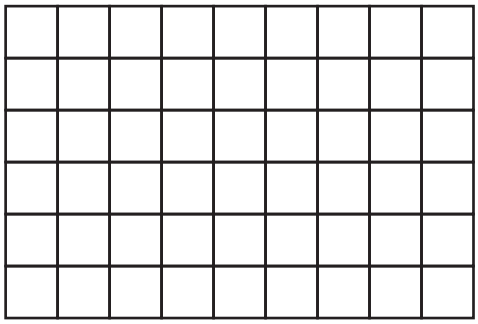
Use the table below to find the area of each rectangular shape.



1



2

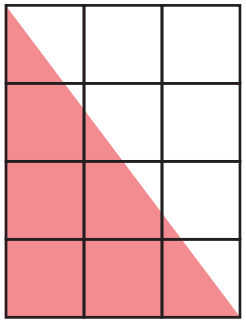


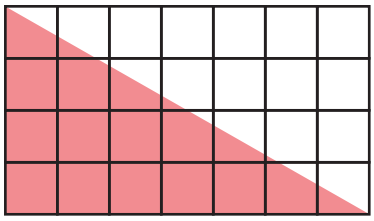
3

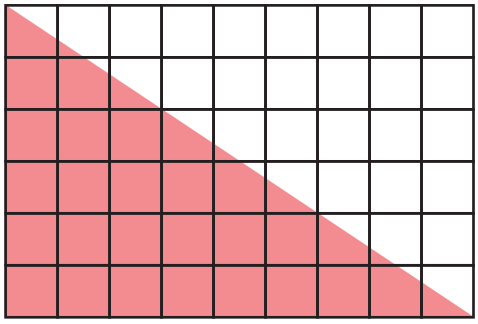
	Rectangle 1	Rectangle 2	Rectangle 3
Height			
Base			
Total Area			

Formula to find the area of a Rectangle:

Now find the area of each triangle below.







	Rectangle Area	Triangle Area
1		
2		
3		

Formula to find the area of a triangle:

Area - Level 7 - Students will calculate the area of squares, rectangles and triangles.

Name: _____

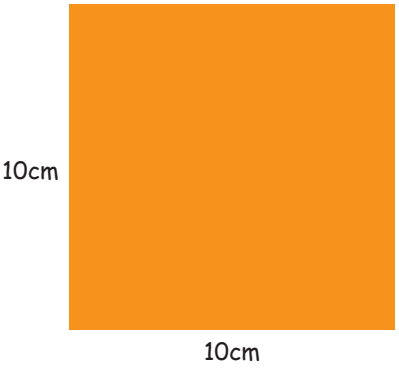
Comprehension

Find the area of the squares, rectangles and triangles below.
Remember: The area of a Square is 4 x Length; Rectangle is Base x Height and Triangle is $\frac{1}{2}$ x Base x Perpendicular Height.

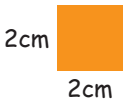
Squares:

Area: _____ cm^2

Area: _____ cm^2



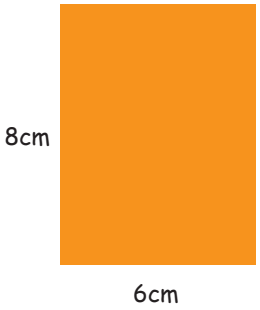
Area: _____ cm^2



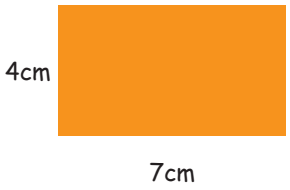
Area: _____ cm^2

Rectangles:

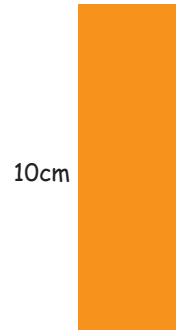
Area: _____ cm^2



Area: _____ cm^2

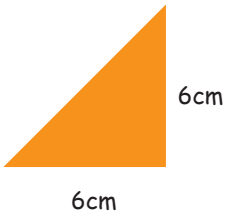


Area: _____ cm^2

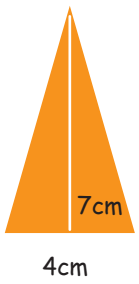


Area: _____ cm^2

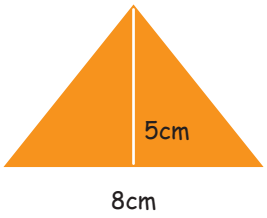
Triangles:



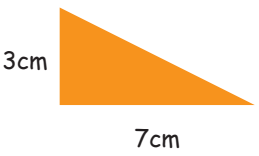
Area: _____ cm^2



Area: _____ cm^2



Area: _____ cm^2



Area: _____ cm^2


Let's Try This Again


Progress To Application

Name: _____

Application

Kitchen Chaos - Part 1

Imagine that a friend of your family decided to renovate their kitchen. They had a tradesperson come and put in all the new appliances and cupboards but decided that they would redo the floor themselves using linoleum squares. On measuring the floor they discovered that it was a perfect rectangle

Just to be safe though they decided to have a chat with the tradesperson to find out whether 100 small squares would cover the kitchen floor. To their surprise the tradesman laughed and told them that it was actually 108 tiles that they would be needing and that 100 would leave them short.

Being a little puzzled by this your family's friend sat down with a pencil and paper and worked out why 108 rather than 100 tiles would be needed for a perfect rectangle.

See if you can work out one way 108 lino tiles could be arranged to form a rectangle?

Working Space

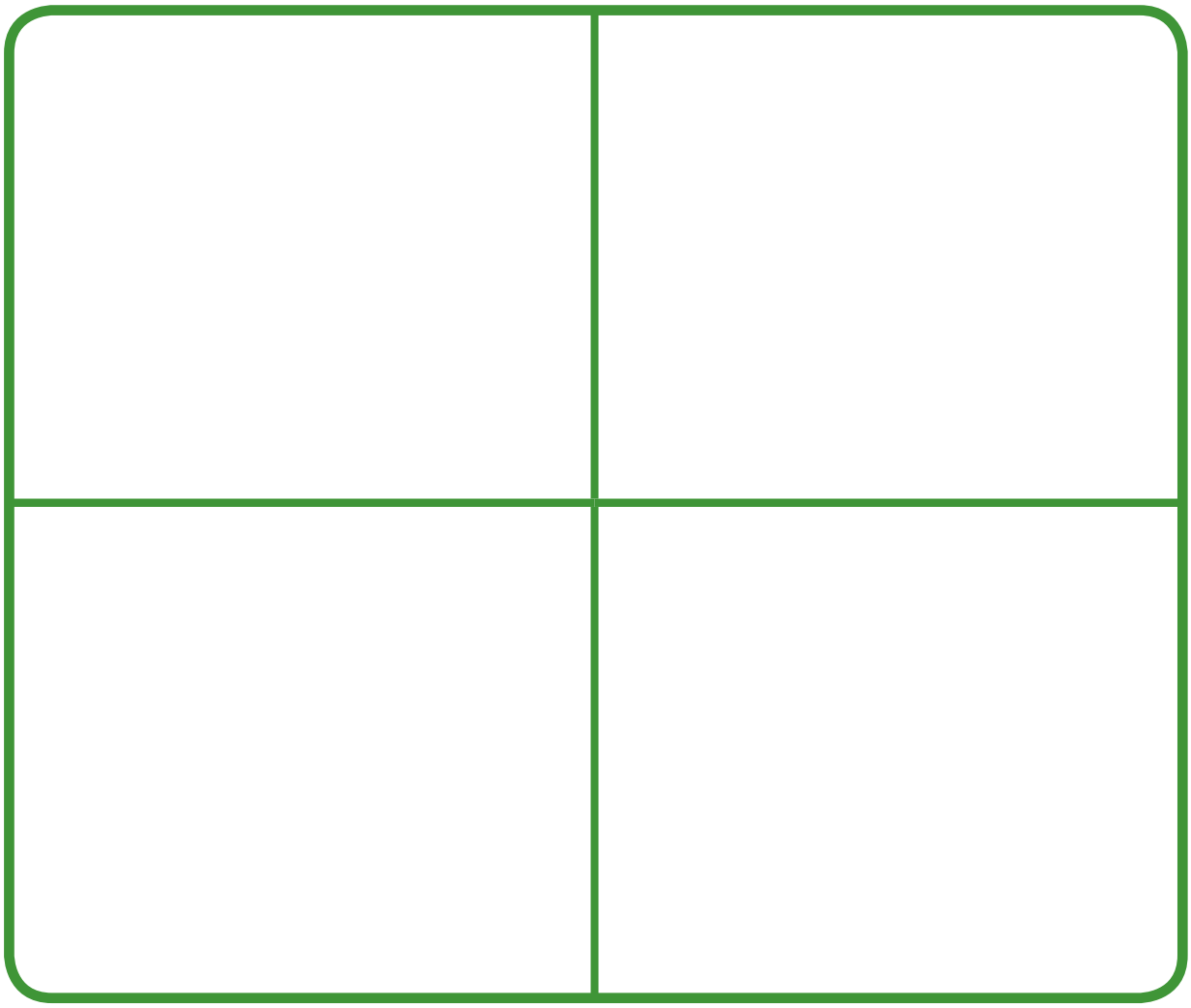
Name: _____

Analysis

Kitchen Chaos – Part 2

In the Application activity you found one possible solution for how the 108 tiles could be arranged. See if you can find 4 more solutions below.

Working Space



Now what if your family friend knew that they needed 3 more squares across the breadth or their kitchen compared to the width of the floor. What are the dimensions of their kitchen assuming that each tile is $1m^2$? Justify your answer below.

Name: _____

Synthesis

Using a tape measure, measure your kitchen floor at home.

Width:

Breadth:

Square meterage:

Unfortunately, lino does not come in perfect $1m^2$ tiles but in 305mm x 305mm squares. What is the least number of squares you can use to replace the flooring in your kitchen?

If the squares cost $24 per 11 tiles how much will it cost to replace your kitchen flooring?

Evaluation

The following questions and activities are provide as a starting point for fun discussions related to Area. During these conversations students will have an opportunity to use appropriate mathematical language in its correct context, to engage in reflection on the Area activities they have completed and to use logical reasoning to tie their in-class mathematics to its everyday context.

Compare counting squares to using a formula for triangles.

Show students by cutting rectangles that this works every time.

Have students work out the dimensions of the classroom.

Have student calculate the number of carpet squares needed to recarpet the classroom.

Have students calculate the cost of recarpeting their bedrooms.

Have students create tiled floor patterns using both square and triangular pieces and see if they can use fewer lino squares or is it the same?