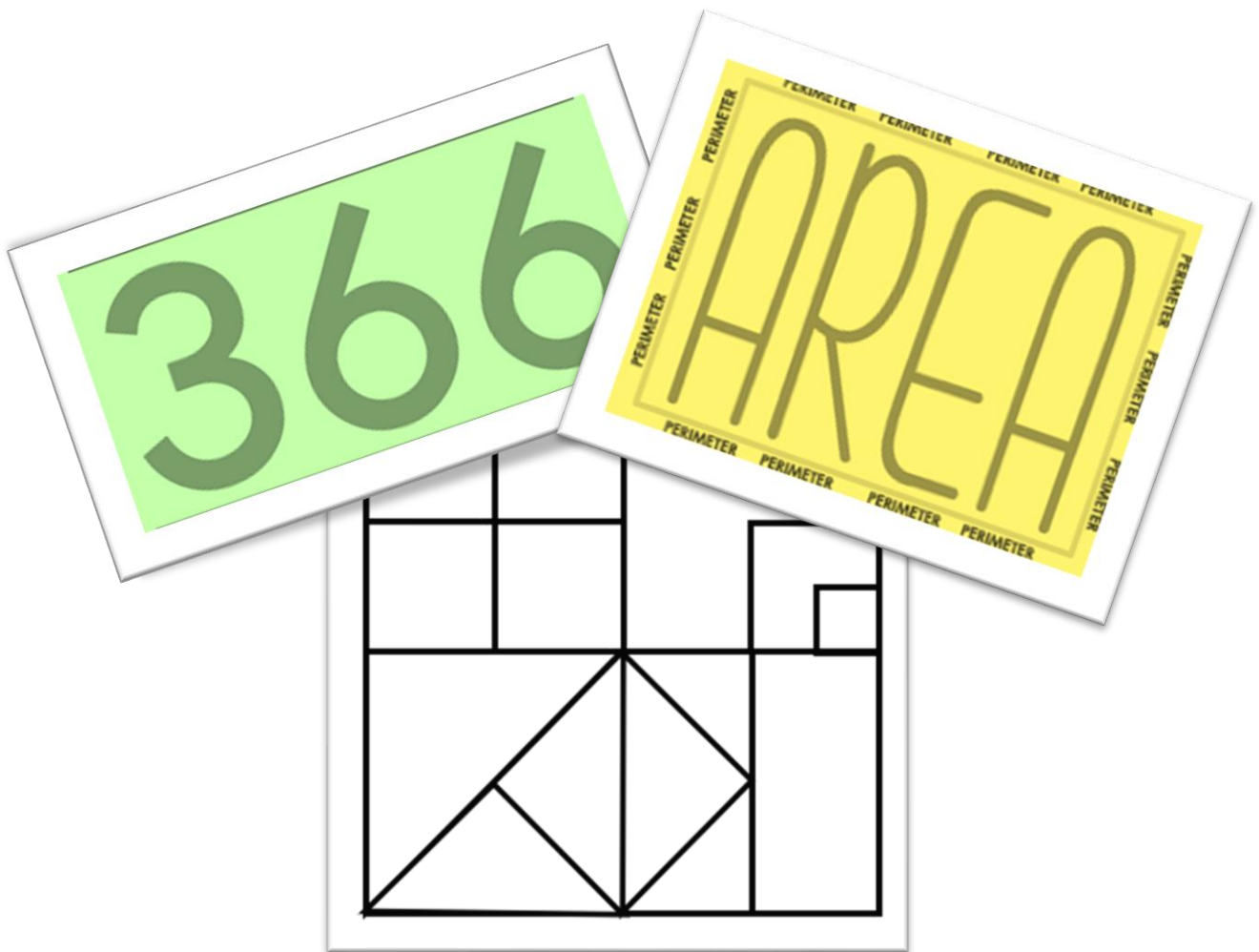


ftit KULJUM

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Tasks for Year 5 and Year 6



SCIENCE CENTRE
PEMBROKE MALTA



MINISTRY FOR EDUCATION AND EMPLOYMENT
DIRECTORATE FOR LEARNING AND ASSESSMENT PROGRAMMES

Talking Capacity

1. Take out several (7 to 10) containers you have at home and ask someone to cover the capacity on their labels before you see them.



Examples of containers: large/small bottle of water, carton of milk, dish washing liquid bottle, shampoo bottle, soy sauce bottle, vanilla essence bottle, maple syrup bottle ...

Make sure you have a variation of capacities.

2. Label each bottle with a letter (e.g. A, B, C...). This will help identify the containers.
3. Keep a paper and a pencil/pen close to record your estimates and/or other working.

<u>Estimates</u>
Capacities are covered and unknown. Make an intelligent guess.
a. Put the containers in ascending order according to their capacities.
b. Which container do you think holds most?
c. Which containers do you think hold around 1 ℓ ?
d. Estimate the capacity of each container. Keep a record of your estimates. Do not forget to indicate the unit (ℓ or $m\ell$). Discuss with an adult your reasoning.
e. Check your answers by revealing the capacity of each container. How close were you?

Actual Capacities Revealed

f. What is the difference between the capacity of container B and the capacity of container E?

g. Calculate the total capacity of the 4 smallest containers.

h. Is there any of the containers which holds exactly half of another container? If yes, which are the two containers?

i. Find the mean (average) capacity of the 3 largest containers.

j. **Challenge**

Using only a 100 *ml* container, a 1.5 *l* container and a 300 *ml* container, calculate how many of each do you need to fill up the 10 *l* bucket?



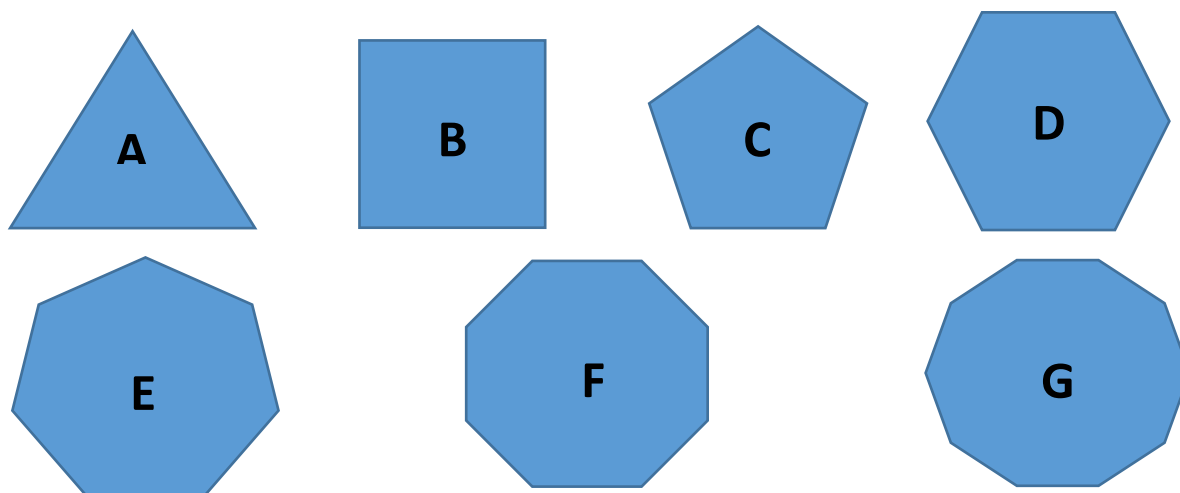
10 litre bucket

1.5 *l* container

300 *ml* container

100 *ml* container

2D-Shape Puzzles



Use these polygons to do the following tasks:

You are to make a row of four 2D shapes.

The first shape has four more sides than the second shape.

The second shape has one less side than the third shape.

The fourth shape has twice as many sides as the second shape.

There is a total of twenty sides on all four shapes.

Draw the shapes or write the letters in the correct order.

Solution

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You are to make a row of four 2D shapes.

- There is a total of twenty five sides on all 4 shapes.
- The second shape has one less side than the first shape.
- The third shape has twice as many sides as the first shape.
- The fourth shape has six sides more than the first shape.

Draw the shapes or write the letters in the correct order.

Solution

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You are to make a row of five 2D shapes.

- The first three shapes have a total of 12 sides.
- The last three shapes have a total of 17 sides.
- The triangle is between the octagon and the rectangle.
- There is a total of 26 sides in the row of 5 shapes.
- The last shape has twice as many sides as the middle shape.

Draw the shapes or write the letters in the correct order.

Solution

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You are to make a row of five 2D shapes.

The pentagon is between the rectangle and the octagon.

The first three shapes have a total of 15 sides.

There is a total of 26 sides in the row of 5 shapes.

The last three shapes have a total of 16 sides.

The first shape has two more sides than the second shape.

Draw the shapes or write the letters in the correct order.

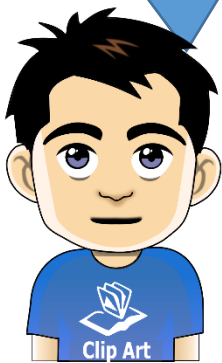
Solution

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Perimeter and Area [Part 1]

Who is correct and who isn't?

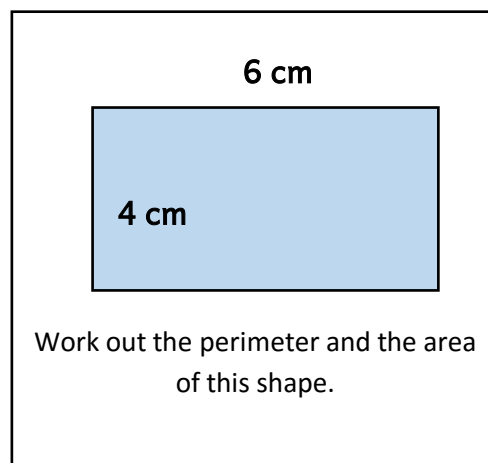
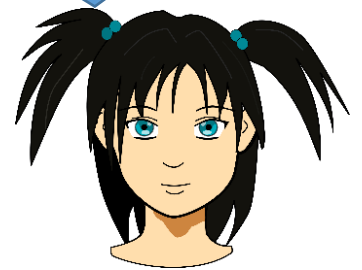
I calculate the perimeter of this shape adding all sides together
 $6\text{cm} + 4\text{cm} + 6\text{cm} + 4\text{cm}$.



Mark

To work out the area of a shape you multiply the length by breadth ($6\text{ cm} \times 4\text{ cm}$).

Louise



Stephanie



When the area of a shape is 24 cm^2 , then the perimeter is always 20 cm .

Jason



The perimeter and the area are always equal.

- a. Which statement is totally correct?
- i. Mark's
 - ii. Louise's
 - iii. Steph's
 - iv. Jason's
- b. The other 3 statements are not totally correct.
Why?
How would you change the statements to make them totally correct?
-

Area and Perimeter [Part 2]

Let's investigate Stephanie's statement a bit further.

Stephanie says that **when the area is 24 cm^2 , the perimeter is always 20 cm .**

- a. Stephanie is not correct. Why?
- b. Investigate all the rectangles with area 24 cm^2 and area 36 cm^2 .
- c. Is the perimeter always a smaller/larger than the area?

Area = 24cm ²				Area = 36cm ²		
Length	Breadth	Perimeter		Length	Breadth	Perimeter
6 cm	4cm	$6 + 4 + 6 + 4$ $=$ 20cm				

366 Days in a Leap Year

TASK 1

Facts about 366.

- a. It is 'three hundred and sixty-six' in words.
- b. It is an even number.
- c. It has 8 factors which are 1, 2, 3, 6, 61, 122, 183 and 366.
- d. 366 seconds is equal to 6 minutes and 6 seconds.

Write some more facts about this number.

Use the correct mathematical vocabulary.

TASK 2

Which of these sequences will contain the number 366?

Give a reason for your answer.

- a. 2, 4, 6, 8, 10 ...
- b. 1, 3, 5, 7, 9 ...
- c. 420, 414, 408, 402, 396 ...
- d. 191, 216, 241, 266, 291 ...

Create sequences both in ascending and descending order in which the number '366' displays.

Explain/describe the sequence in mathematical terms.

TASK 3

Go back to the sequences you created.

- a. Choose an ascending sequence.

What is the first positive integer/term of that sequence?

- b. Choose a descending sequence.

What is the last positive integer/term of that sequence?

E.g. ...360, 362, 364, 366, 368, 370...

pattern/rule is '+ 2'.

the first term of this sequence is 2

... 416, 366, 316, 266, 216...

pattern/rule is '-50'.

the last term of this sequence is 16

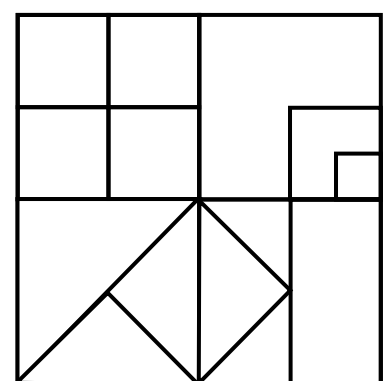
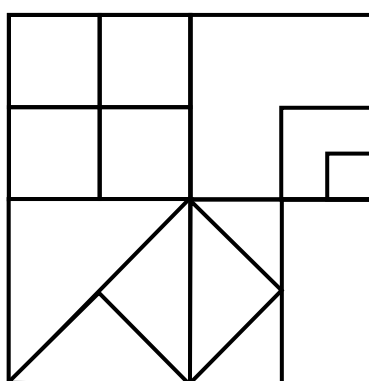
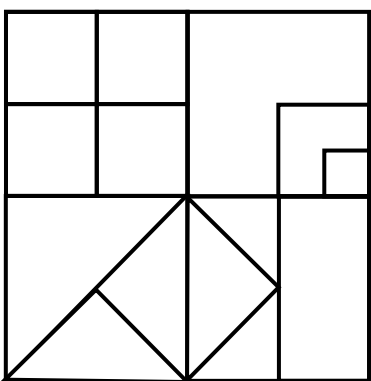
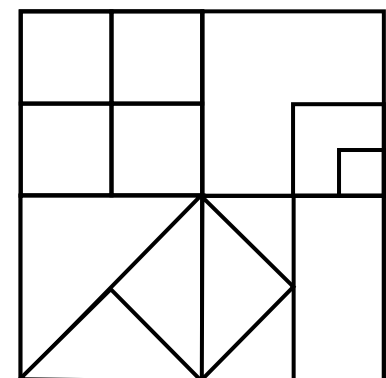
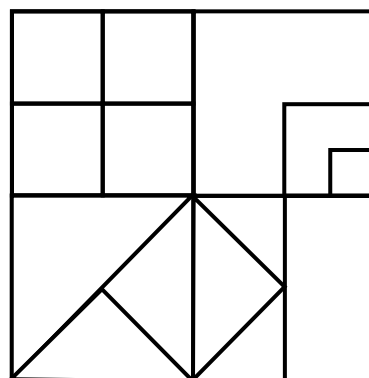
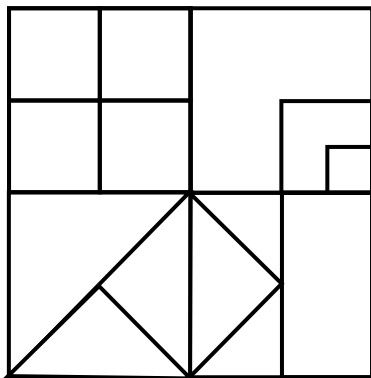
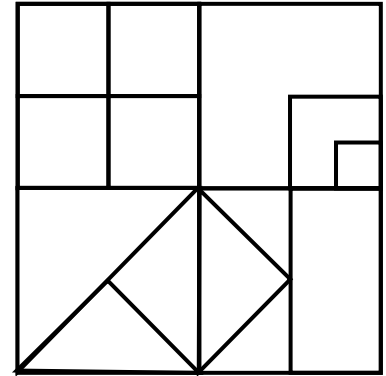
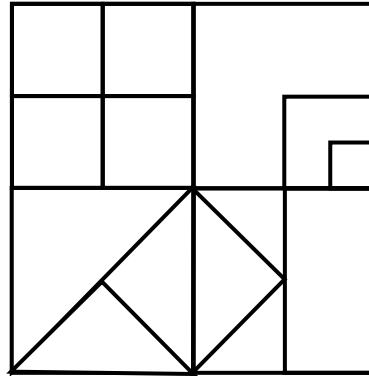
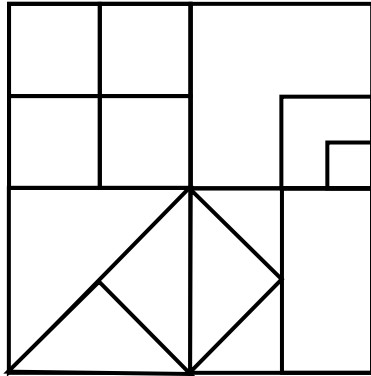
Note:

Number sequences are sets of numbers that follow **a pattern** or **a rule**.

Each number in a sequence is called **a term**.

Halving!

How many creative ways can you find to colour half of the square?



Task 1: What do you notice? What do you wonder?

Task 2: What if instead of shading half, you shaded a quarter of the square? What do you notice now? What is different? What is the same?

Answers for all tasks in this booklet are available on <https://primarymaths.skola.edu.mt/ftit-kuljum/>.