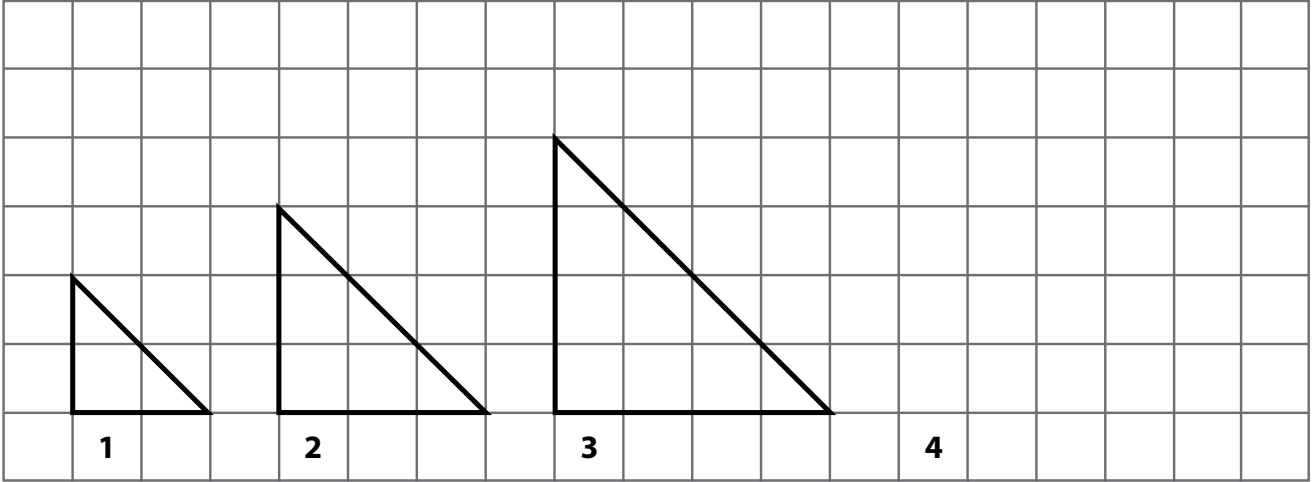


# Triangles and patterns

Name: \_\_\_\_\_



## 1. Look at the triangles above

a) Describe what the pattern is in your own words.

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b) What is the percentage increase of the second triangle compared to the first triangle?

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c) What is the percentage increase of the third triangle compared to the first triangle?

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d) In the space on the grid, draw the fourth triangle with the same ratio increase of the first triangle.

# Triangles and patterns

e) Complete the table by comparing the first triangle to the 2nd, 3rd and 4th triangles.

Triangle 1	Triangle 2	Triangle 3	Triangle 4
Percentage bigger			
Fraction bigger			

f) Complete the table by comparing the size of each triangle to the triangle that comes before it in the pattern.

Triangle 1	Triangle 2	Triangle 3	Triangle 4
Percentage bigger than the previous triangle			
Fraction bigger than the previous triangle			

2. Look at the number sentence below and answer the questions that follow:

1	1	2	3	5	8	13	21	34	55
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a) What is the number pattern?

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b) How does it work?

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c) This pattern was discovered by someone a very long time ago. Do you know what it is called and who discovered it? (Do some research if necessary)

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d) What are the next three numbers in the series?

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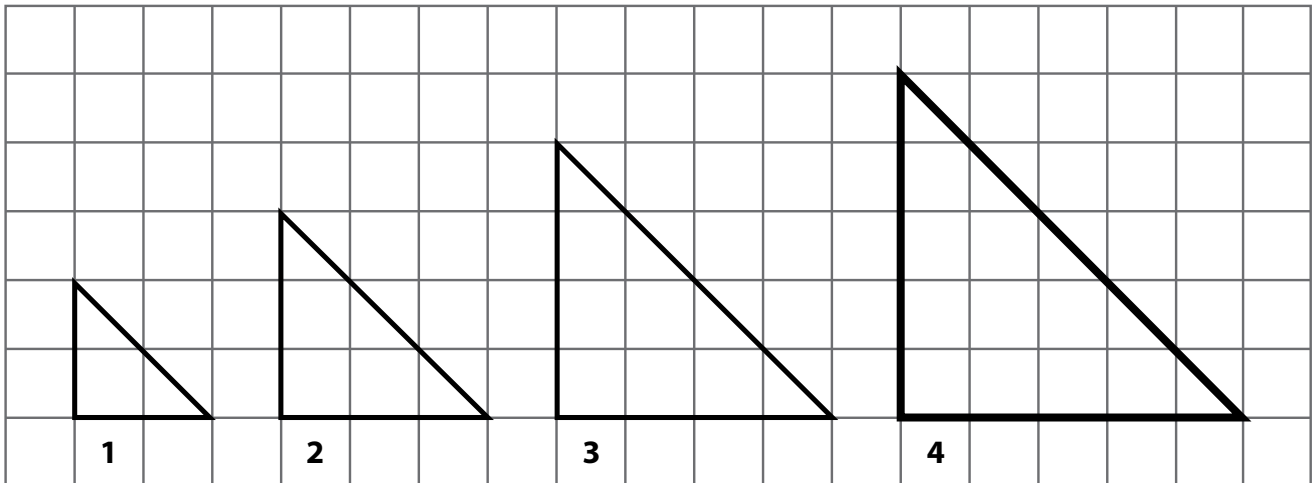


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**Homework: Find out what the number series is called and where you can find it.**



# Answer sheet



1. Look at the triangles above

a) Describe what the pattern is in your own words.

**Each triangle gets 1 block bigger in length and breadth than the block before it.**

b) What is the percentage increase of the second triangle compared to the first triangle?

**The second triangle is 50% bigger than the first triangle.**

c) What is the percentage increase of the third triangle compared to the first triangle?

**The third triangle is 100% bigger than the first triangle.**

d) In the space on the grid, draw the fourth triangle with the same ratio increase of the first triangle.

**(see grid)**

e) Complete the table by comparing the first triangle to the 2nd, 3rd and 4th triangles.

Triangle 1	Triangle 2	Triangle 3	Triangle 4
Percentage bigger	50%	100%	150%
Fraction bigger	$1\frac{1}{2}$	2	$2\frac{1}{2}$

# Answer sheet

- f. Complete the table by comparing the size of each triangle to the triangle that comes before it in the pattern.

Triangle 1	Triangle 2	Triangle 3	Triangle 4
Percentage bigger than the previous triangle	50%	33%	25%
Fraction bigger than the previous triangle	$\frac{1}{2}$	$\frac{1}{3}$	$\frac{1}{4}$

**Each triangle gains a block in length and breadth compared to the first one.**

## 2. Look at the number sentence below and answer the questions that follow:

- a) What is the number pattern?

**Two consecutive numbers add up to the number that follows it in the number sentence, e.g.  $1 + 1 = 2$ ;  $1 + 2 = 3$ .**

- b) How does it work?

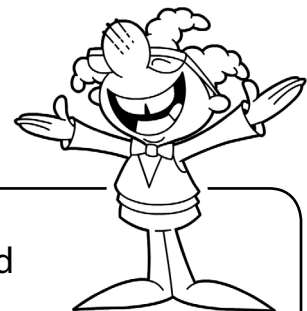
**Each number is the sum of the two previous numbers in the pattern.**

- c) This pattern was discovered by someone a very long time ago. Do you know what it is called and who discovered it? (Do some research if necessary)

**Fibonacci discovered the pattern. It is called the Fibonacci series.**

- d) What are the next three numbers in the series?

**$(34 + 55)$  89,  $(55 + 89)$  144,  $(89 + 144)$  233.**



**Homework:** Find out what the number series is called and where you can find it.

**Leonardo Fibonacci was an Italian mathematician and discovered the sequence of the Fibonacci numbers.**

