

## Maths Week 12

### Message

Hello, Year 4!

Welcome to your week 12 Maths remote learning!

Our main focus this week is continuing to learn about triangles and angles in more depth.

We are also going to go over some of our previous learning and re-cap some calculation and number objectives from earlier in the year.

Our last lesson is something slightly different as there is a video lesson that you can follow along with. Don't worry if you do not have access to technology on that day, the same activities are still on the sheet and you can do the lesson as normal without the video.

### Teaching

Our key learning for this week focusses on identifying the 4 types of triangles:

#### 1. **Equilateral**

Equilateral triangles have 3 equal sides and 3 equal angles of  $60^\circ$

#### 2. **Isosceles**

Isosceles triangles have 2 equal sides and 2 equal angles.

#### 3. **Right-angled**

One of the angles is a right angle ( $90^\circ$ ) in right-angled triangles.

#### 4. **Scalene**

Scalene triangles have no equal sides and no equal angles.

We are also learning how the angles in a triangle all add up to **180 degrees** and how to calculate missing angles in a triangle.

### Website Links

Learning about triangles:

<https://www.bbc.co.uk/bitesize/topics/zv mxsbk/articles/zggsfrd>

Animation to show triangles:

<https://www.youtube.com/watch?v=r4ry SgvfDQU>

A song about triangles:

<https://www.youtube.com/watch?v=JQ UTVgT9RXY>

## Lesson One – Quick Questions

Below are the definitions of the different types of angles:

An angle less than  $90^\circ$  is **acute**.

An angle between  $90^\circ$  and  $180^\circ$  is **obtuse**.

An angle greater than  $180^\circ$  is **reflex**.

An angle of exactly  $90^\circ$  is a **right-angle**.

An angle of exactly  $180^\circ$  is a **straight angle**.

What would the following angles be classified as?

23 degrees =

91 degrees =

179 degrees =

230 degrees =

359 degrees =

45 degrees =

110 degrees =

2 degrees =

181 degrees =

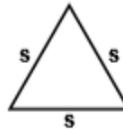
90 degrees =

180 degrees =

## Identifying Triangles

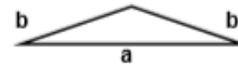
Here are 12 triangles. Can you identify them from the definitions on the previous page?

1)



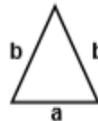
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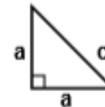
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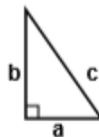
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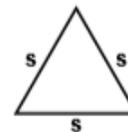
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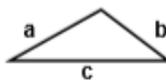
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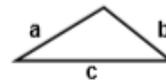
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10)



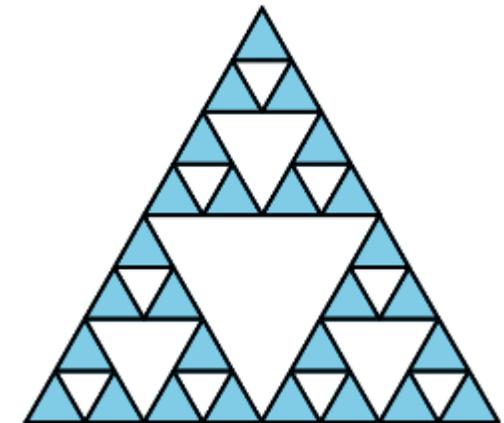
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11)



Type: \_\_\_\_\_

## How Many Triangles can you see?



How many triangles can you see in this image? Try and count them all and see what your final number is.

NOW:

Your next task is to draw this image at home. Start by drawing a triangle that has 3 sides, each should be 20cm in length.

Then try and create the four triangles within the large triangle. These should all have sides of 10 cm in length.

Keep going from there and send us your efforts into [year4@coleridgeprimary.net](mailto:year4@coleridgeprimary.net)

You can even make your triangles more complicated by making smaller triangles inside the smallest triangles you can see in the image!

## Lesson Two – Quick Questions

Can you figure out what the numbers are?

If you double me and then double me again, you get 24. What am I?

If you treble me, you get 45. What am I?

Times me by 9 and add 5 and you get 68. What am I?

Halve me and you get 117. What am I?

Times me by myself and you get 121. What am I?

Take away 309 from me and you get 31, what am I?

Times me by 10 and take away 9 and you get 91. What am I?

If you halve me, you get 16.5. What am I?

If you multiply me by 3, then double me, then add 11, you get 29. What am I?

## What Triangle am I?

### Can you figure out what I am?

I have three sides that are each 7 cm long. All my angles are 60 degrees. What am I?

I have one side which is 9 cm long. My other two sides are both 12cm long. What am I?

My bottom side is 7cm long. My left side is 4 cm long and my final side is 8 cm long. What am I?

My shortest side is 5cm long. Two of my angles are 65 degrees. What am I?

One of my angles is 27 degrees. Another one is 63 degrees. What triangle am I?

My perimeter is 18 cm. You can divide that by 3 to find each side's length. What triangle am I?

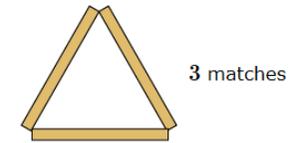
I have two sides that are each 15 cm long. What am I?

Two of my angles are the same and together equal 100 degrees. What triangle am I?

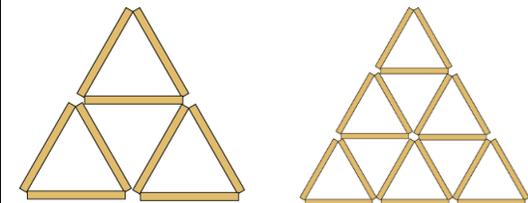
All of my sides are different prime numbers. What kind of triangle am I?

## Sticky Triangles

I was exploring a puzzle in which headless match sticks had to be moved to make a different number of triangles. I made one small triangle



I then added 6 more matches and made 4 triangles instead of 1.



I added another row and counted the number of small triangles and counted the matches. I made a table of my results and continued adding rows. I found many patterns.

Have a go and see what patterns you can find. You do not have to use match sticks (or cocktail sticks) - drawing lines will do just as well.

Record your results however you like and send them to us!

## Lesson Three – Quick Questions

### Times Table division:

$132 \div 12 = \underline{\quad}$

$49 \div 7 = \underline{\quad}$

$72 \div 6 = \underline{\quad}$

$132 \div 11 = \underline{\quad}$

$48 \div 12 = \underline{\quad}$

$55 \div 11 = \underline{\quad}$

$72 \div 8 = \underline{\quad}$

$64 \div 8 = \underline{\quad}$

$40 \div 8 = \underline{\quad}$

$24 \div 12 = \underline{\quad}$

$88 \div 11 = \underline{\quad}$

$8 \div 4 = \underline{\quad}$

$84 \div 7 = \underline{\quad}$

$32 \div 8 = \underline{\quad}$

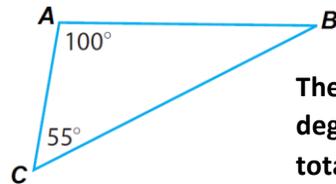
$144 \div 12 = \underline{\quad}$

$24 \div 4 = \underline{\quad}$

$12 \div 6 = \underline{\quad}$

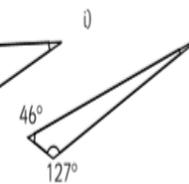
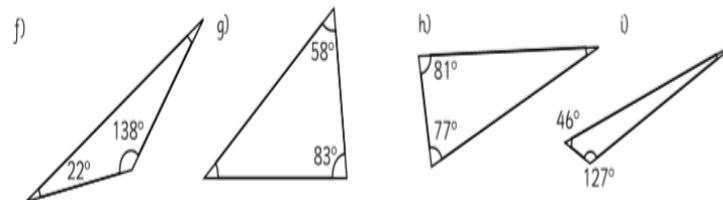
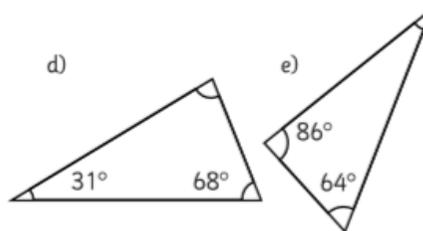
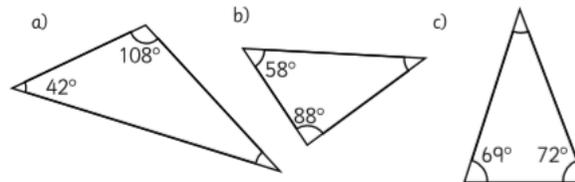
## Missing Angles

Have a look at this triangle. All angles in a triangle will add up to 180 degrees. The two angles we know about add up to 155 degrees. The third angle would add to this to take the total up to 180 degrees.

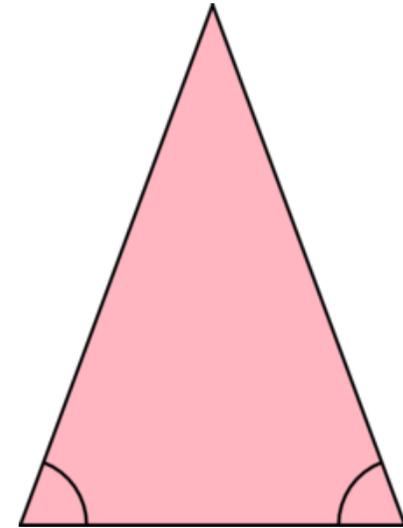


The missing angle is 25 degrees which takes the total up to 180 degrees.

Have a look at these triangles. Can you work out the missing angles?



## Isosceles Investigation



Step 1:

Investigate: How many different isosceles triangles can you make where the lengths of the sides are whole numbers (not decimals) that **total** (add up to) 12cm? Draw or make your triangles to prove it.

Remember that two sides will be equal and the third will not.

Step 2:

How many isosceles triangles can you make where the lengths of the sides are whole numbers that **total** 26cm? Draw or make your triangles to prove it.

## Lesson 4 – Quick Questions

### Double the Decimals

Here are some decimal numbers, have a go at doubling them.

Double 1.3

Double 4.2

Double 6.3

Double 10.4

Double 9.1

Double 3.5

Double 3.6

Double 4.7

Double 8.9

Double 20.8

Double 5.27

Double 7.89

## Column Addition

Today we are going to go over using column addition to solve problems. Have a go at the following:

$$\begin{array}{r} 1. \quad 307 \\ + 6,524 \\ \hline \end{array}$$

$$\begin{array}{r} 2. \quad 2,600 \\ + 6,533 \\ \hline \end{array}$$

$$\begin{array}{r} 3. \quad 7,183 \\ + 1,313 \\ \hline \end{array}$$

$$\begin{array}{r} 4. \quad 5,959 \\ + 4,021 \\ \hline \end{array}$$

$$\begin{array}{r} 5. \quad 5,183 \\ + 3,934 \\ \hline \end{array}$$

$$\begin{array}{r} 6. \quad 2,597 \\ + 6,013 \\ \hline \end{array}$$

$$\begin{array}{r} 7. \quad 1,345 \\ + 5,590 \\ \hline \end{array}$$

$$\begin{array}{r} 8. \quad 3,687 \\ + 4,608 \\ \hline \end{array}$$

$$\begin{array}{r} 9. \quad 8,007 \\ + 1,558 \\ \hline \end{array}$$

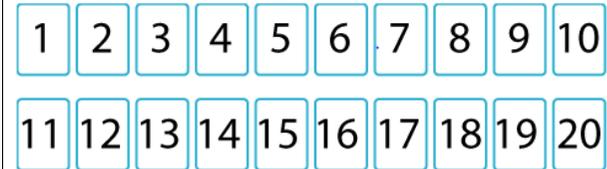
$$\begin{array}{r} 10. \quad 5,001 \\ + 2,275 \\ \hline \end{array}$$

$$\begin{array}{r} 11. \quad 4,021 \\ + 4,054 \\ \hline \end{array}$$

$$\begin{array}{r} 12. \quad 7,350 \\ + 1,815 \\ \hline \end{array}$$

## Twenty divided into Six

Katie had a pack of twenty cards numbered from 1 to 20.



She arranged the cards into six piles.

The numbers on the cards in each pile added to the same total.

What was the total and how could this be done?

Make your own set of cards to help you to investigate this question.

## Lesson Five – Quick Questions

This lesson can be followed along with a video tutorial by Mr Shiel.

Lesson Five Video tutorial:  
<https://youtu.be/Bt9gK8rsws8>

If you prefer not to, or are unable to follow the video, then please follow the activities as they are set out below. Here are the quick questions to get us started. They are adding 3 digit numbers together – try to do it mentally.

$125 + 132$

$203 + 124$

$105 + 103$

$106 + 210$

$305 + 102$

$415 + 121$

$215 + 112$

$340 + 124$

$250 + 115$

$318 + 102$

## Lesson Five – Subtraction

Here are some questions involving subtraction where you will need to borrow. There are hints in the questions where you need to borrow from:

$$\begin{array}{r} \text{a)} \quad 6 \quad \cancel{8} \quad 3 \quad 9 \\ - \quad 3 \quad 7 \quad 4 \quad 9 \\ \hline \end{array}$$

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$$\begin{array}{r} \text{b)} \quad \cancel{5} \quad 8 \quad 9 \quad \cancel{2} \\ - \quad 2 \quad 9 \quad 7 \quad 3 \\ \hline \end{array}$$

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$$\begin{array}{r} \text{c)} \quad 7 \quad 8 \quad \cancel{4} \quad 2 \\ - \quad 3 \quad 9 \quad 3 \quad 3 \\ \hline \end{array}$$

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$$\begin{array}{r} \text{d)} \quad \cancel{7} \quad \cancel{5} \quad \cancel{3} \quad 6 \\ - \quad 5 \quad 9 \quad 3 \quad 3 \\ \hline \end{array}$$

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$$\begin{array}{r} \text{e)} \quad 6 \quad 8 \quad \square \quad 4 \\ - \quad 2 \quad \square \quad 1 \quad \square \\ \hline \end{array}$$

	3	2	1
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$$\begin{array}{r} \text{f)} \quad 8 \quad 4 \quad \square \quad \square \\ - \quad \square \quad 2 \quad 5 \quad 1 \\ \hline \end{array}$$

3		4	1
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$$\begin{array}{r} \text{g)} \quad 7 \quad \square \quad \cancel{8} \quad \cancel{1} \\ - \quad \square \quad 3 \quad 7 \quad \square \\ \hline \end{array}$$

2	1		9
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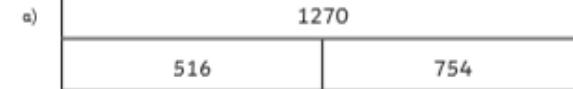
$$\begin{array}{r} \text{h)} \quad \cancel{7} \quad \cancel{6} \quad \cancel{1} \quad 3 \quad 8 \\ - \quad \square \quad \square \quad \square \quad \square \\ \hline \end{array}$$

2	9	7	1
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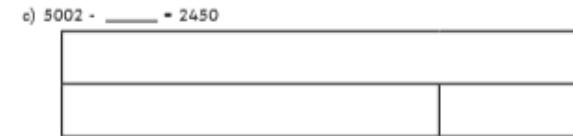
## Subtraction – Apply it

### Using Bar Models in Addition and Subtraction

1. Can you write an addition and a subtraction calculation for each bar using the given numbers?



2. Can you write an addition and a subtraction calculation for each bar using the given numbers?



3. Now, draw a bar model in the space below the question to help you to solve the problems below.

a) Sally has 7310 football cards in her collection folder. The whole folder holds 9000 football cards in total. How many more football cards does Sally need to complete her collection?

b) The fish and chip shop had 4056 haddocks in their freezer. The shopkeeper ordered another 2300 haddocks from the wholesalers. How many haddocks do they now have in total?