6/5 Maths w/c 11th May 2020

3. We are learning how to calculate angles in different types of triangle (1).

Look at the powerpoint for this lesson.

Equilateral Triangle

The easiest type of triangle to work out angles for is the **equilateral triangle.**

* Internal angles of a triangle always add up to 180º (‘internal’ just means ‘inside’)
* Triangles always have 3 internal angles.
* Equilateral triangles always have three angles that are the same as each other.
* 180º $÷$ 3 = 60º
* **Any internal angle on an equilateral triangle must be 60º**

Isosceles Triangle

We know that this type of triangle has 2 angles that are equal. The third angle is different.

How to work out what the missing angle is depends on which angle is missing. See below:

40$°$

We can see here that the missing angle is the angle that is the same as the one in the bottom left corner. So, because we know they have to be equal, the missing angle must be 70$°$ as well.

We can check this though. Don’t forget that all internal angles on a triangle must add up to 70$°$. So let’s put our answer in and see if that is correct.

?

70$°$

 70 + 40 + 70 = 180 – yes, we are correct.

Now do questions 1 – 3 on the worksheet. Make sure you check your answer each time by doing the calculation above.

What if it is a different angle that is missing?

Again, we can use our knowledge about triangles to work this out. If we start with 180$°$ and take away the angles we have, the number that is left is the missing angle. This works with all kind of triangles. Not just isosceles.

?

40$°$

40$°$

180$°$ – 40$°$ – 40$°$ = 100$°$. The missing angle must be 100$°$.

Now do questions 4 – 5 on the worksheet. Make sure you check your answer each time by doing the calculation above.

Sometimes there may be two missing angles. How can we do this?

Well, we know that the two missing angles have to be equal to each other.

Start by taking away the angle that we have from 180$°$ to see what is left.

180$°$ – 20$°$ = 160$°$.

So, the two missing angles together must equal 160$°$.

Because we know they are equal to each other, we can divide 160$°$ by 2 to find the value of each angle.

160$°$ $÷$ 2 = 80$°$.

The two missing angles are both 80$°$.

?

20$°$

?

Now do questions 6 – 10 on the worksheet. Make sure to include any working out.

Questions 9 and 10 are ‘extra challenge’ – can you work out how to answer the question?