7/4 Maths w/c 4th May 2020

3. We are exploring angles and turning.

A right-angle is the kind of angle you would see in a cross or a door frame. The corners on squares and rectangles are right-angles.

|  |
| --- |
| A close up of a logo  Description automatically generated |
| Sometimes, you might see a right angle that has been rotated or turned – like the ones below.  |
| A close up of a logo  Description automatically generated | A close up of a logo  Description automatically generated | A close up of a logo  Description automatically generated |
| Just because they are not ‘straight up’ and ‘straight across’ does not mean they are not right-angles. Turn the page that the angle is on is you are not sure. **Each right-angle measures 90 degrees.** We can also write this like90º - the little circle after the number means ‘degrees’.A straight line angle is made up of two right-angles. See below.  |

How many degrees would be in a straight line angle?

What if we put three right-angles together?

|  |  |
| --- | --- |
|  |  |
|  |  |

How many right-angles would it be if we went all the way around?

We can also describe these as fractions of a turn.

One full turn: Stand up. Turn all the way around so you are facing the same way as you started.

Half a turn: Stand up. Turn until you are facing the opposite direction to where you started.

Can you work out what a quarter turn would be?

What about a three-quarter turn?

Task 1 - Fill in this table:

|  |  |  |
| --- | --- | --- |
| Angle | Fraction of a full turn | How many degrees? |
| a right-angle | $$\frac{1}{4}$$ | 90º |
| straight line |  |  |
| three right-angles |  |  |
| a full turn |  |  |

Task 2 – The compass – facing North - clockwise

Look at the compass below. For all the questions in this section, you need to imagine that you are facing North. For all of these questions, you will be turning ‘clockwise’ – same direction as the arrow.

|  |  |  |
| --- | --- | --- |
|  | North |  |
| West |  |  | East |
|  |  |
|  | South |  |

a) Turn from North to East

* How many right-angles do you need to turn?
* What fraction of a turn would that be?
* How many degrees is that?

b) Turn from North to West

* How many right-angles do you need to turn?
* What fraction of a turn would that be?
* How many degrees is that?

c) Turn from North to South

* How many right-angles do you need to turn?
* What fraction of a turn would that be?
* How many degrees is that?

Task 3 – The compass – facing North – anti-clockwise

Now answer the same questions as if you were turning anti-clockwise

|  |  |  |
| --- | --- | --- |
|  | North |  |
| West |  |  | East |
|  |  |
|  | South |  |

a) Turn from North to East

* How many right-angles do you need to turn?
* What fraction of a turn would that be?
* How many degrees is that?

b) Turn from North to West

* How many right-angles do you need to turn?
* What fraction of a turn would that be?
* How many degrees is that?

c) Turn from North to South

* How many right-angles do you need to turn?
* What fraction of a turn would that be?
* How many degrees is that?

EXTRA CHALLENGE

Task 4 – The compass

This time, each question will tell you where you are starting from and where you need to turn to. It will also tell you which direction. Read the questions carefully.

|  |  |  |
| --- | --- | --- |
|  | North |  |
| West |  |  | East |
|  |  |
|  | South |  |

a) Turn from South to East anti-clockwise

* How many right-angles do you need to turn?
* What fraction of a turn would that be?
* How many degrees is that?

b) Turn from South to West anti-clockwise

* How many right-angles do you need to turn?
* What fraction of a turn would that be?
* How many degrees is that?

c) Turn from East to North anti-clockwise

* How many right-angles do you need to turn?
* What fraction of a turn would that be?
* How many degrees is that?

d) Turn from East to North clockwise

* How many right-angles do you need to turn?
* What fraction of a turn would that be?
* How many degrees is that?

e) Turn from West to South clockwise

* How many right-angles do you need to turn?
* What fraction of a turn would that be?
* How many degrees is that?