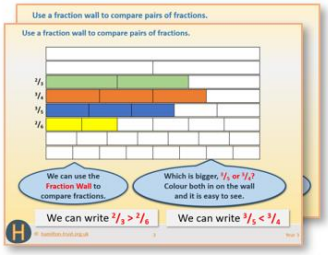
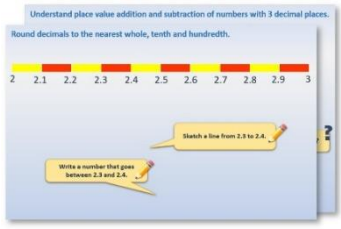
Week 12, Day 5
Right angle turns (2)

Each day covers one maths topic. It should take you about 1 hour or just a little more.

1. If possible, watch the **PowerPoint presentation** with a teacher or another grown-up.



OR start by carefully reading through the **Learning Reminders**.



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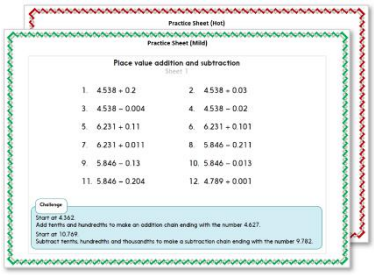
2. Tackle the questions on the **Practice Sheet**.
There might be a choice of either Mild (easier) or Hot (harder)!
Check the answers.



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3. Finding it tricky? That's OK… have a go with a grown-up at **A Bit Stuck?**

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4. Think you've cracked it? Whizzed through the Practice Sheets?
Have a go at the **Investigation**…

Learning Reminders

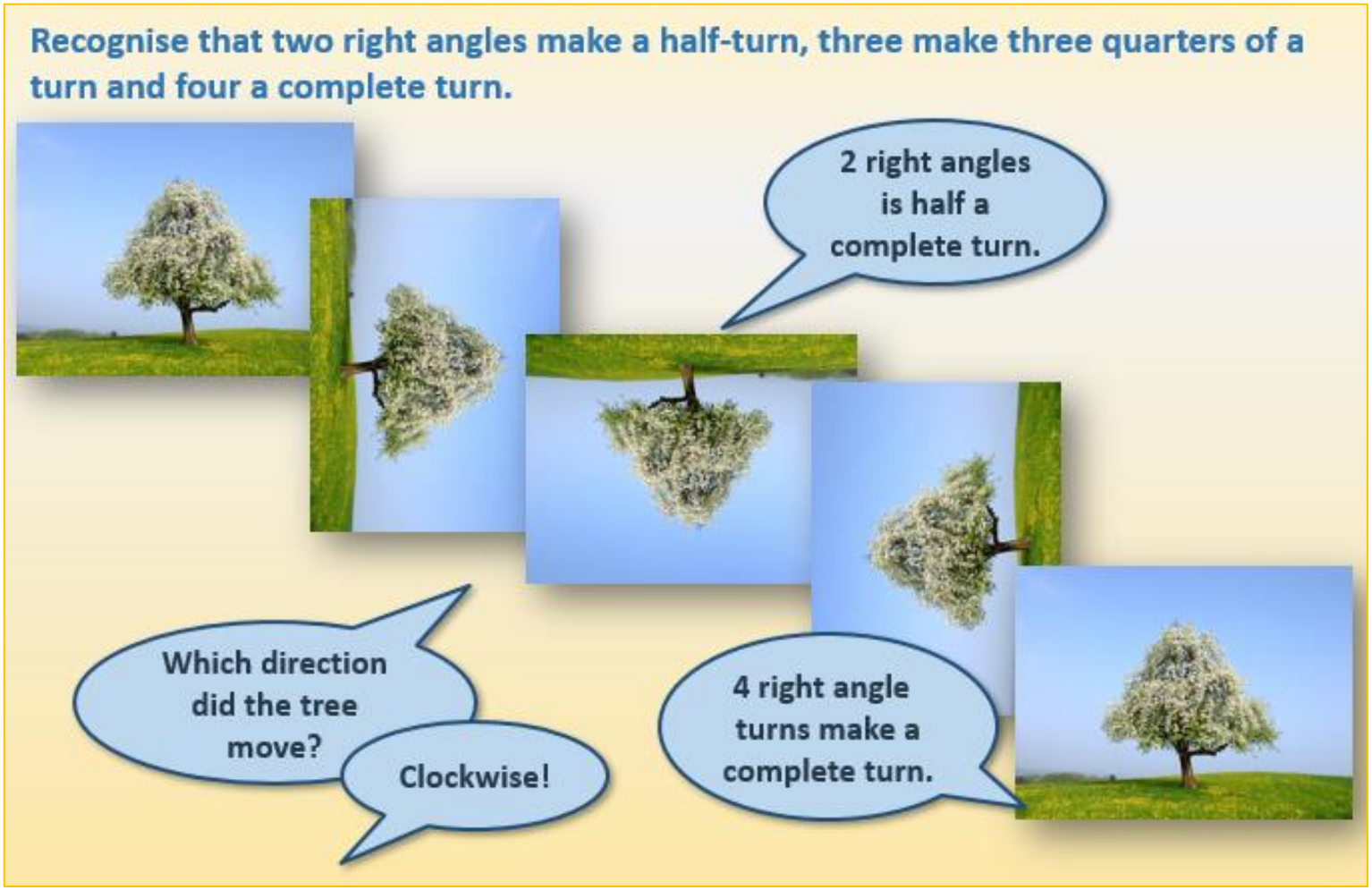
Recognise that two right angles make a half-turn, three make three quarters of a turn and four a complete turn.

What has happened to the picture?

How far has it turned?

The tree has turned through a right angle... a quarter of a full turn.

Learning Reminders



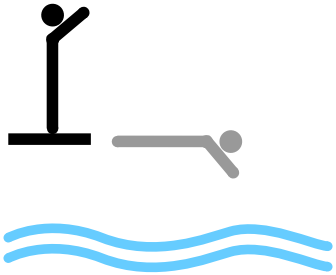
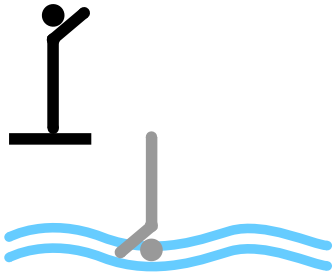
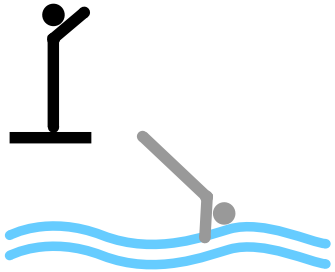
Practice Sheet for All

Right angle turns

Tick true or false by the side of each statement.

	True	False
1. A right angle is 100 degrees.	☐	☐
2. There are four right angle turns in a complete turn.	☐	☐
3. There are three right angle turns in half a turn.	☐	☐
4. There are two right angle turns in a half turn.	☐	☐
5. There are 180 degrees in half a turn.	☐	☐

Hot challenge: have a go at these three questions

		True	False
6. This diver has turned through quarter of a turn.		☐	☐
7. This diver has turned through two right angle turns.		☐	☐
8. This diver has turned through three right angle turns.		☐	☐

Practice Sheet Answers

Right angle turns (for all)

1. A right angle is 100 degrees. FALSE
2. There are four right angle turns in a complete turn. TRUE
3. There are three right angle turns in half a turn. FALSE
4. There are two right angle turns in a half turn. TRUE
5. There are 180 degrees in half a turn. TRUE

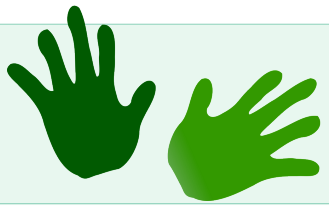
Hot challenge

6. This diver has turned through quarter of a turn. TRUE
7. This diver has turned through two right angle turns. TRUE
8. This diver has turned through three right angle turns. FALSE

A Bit Stuck?
Turning patterns

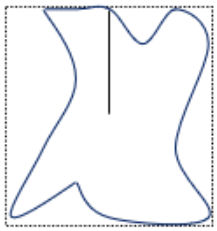
Things you will need:

- Card, e.g. from a cereal box
- Scissor
- Pencils

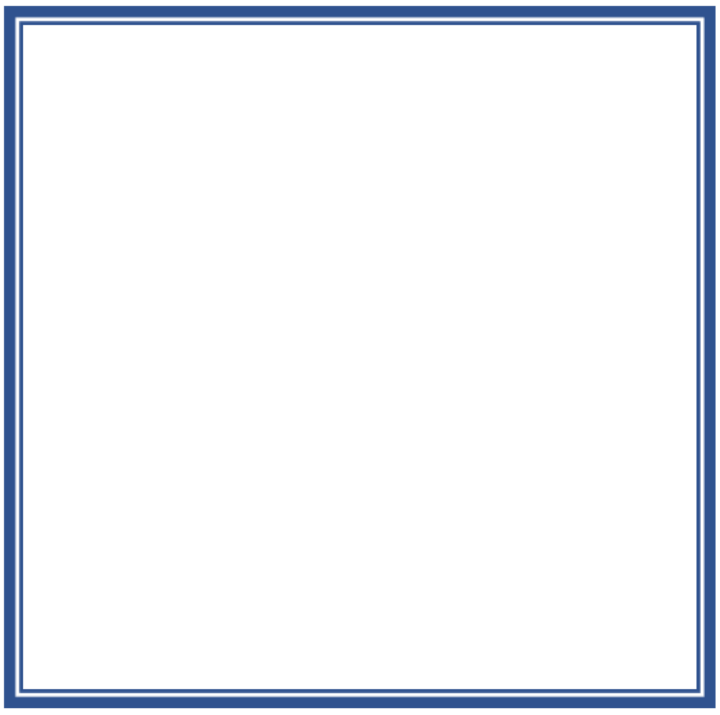


What to do:

- Draw a 10cm by 10cm square on a piece of card and cut it out.
- Draw a line drawn from its centre to the midpoint of one side.
- Now cut a pattern round the edge of the square to make a new shape, e.g.



- Place your square in the middle of the square below with the drawn line facing upwards (as if towards 12 on a clock). Draw round it using a coloured pencil.



- Now rotate the shape through a quarter of a turn (using the drawn line to help). Carefully draw around it *using a different colour.*
- Repeat, until the shape is back in its original position.
- *How many right angle turns were needed to get back to the beginning?*
- Remove the card shape to reveal a turning pattern.
- Repeat with a new shape.

Investigation
In a spin!

Last summer holiday, when I was having a sort out in the classroom, I dropped a box of large wooden capital letters. "Fiddlesticks!" I exclaimed, as one letter bounced five feet across the floor. Funnily enough, it was an **F**:

As I reached to fetch it, I flicked it, and it spun around half a turn.

"Oops" I muttered, but always on the lookout for a new maths investigation, I started to play...

This pattern was quickly made by turning the F through four quarter turns. I pinned it through its 'base' - can you see my blue pin on the picture? I drew around it after each turn, and coloured in the outline...

And this pattern was also made by rotating the F through four quarter turns, this time pinning it at the end of one of the horizontal lines...

So, here's a challenge... What letter did I choose to create this 'In a spin' pattern? What type of turns has it completed? Where was it pinned?

Now it's your turn... Use any of the capital letters (or digits) to create lots of your own 'In a spin' patterns. Explore quarter, half and three quarter turns, and investigate pinning the letters in different places.

Can someone else decipher your patterns and tell you how they were created?

What interesting rules or patterns did you discover? Tell someone about them, or write them down using clear descriptions and mathematical words...

A	B	C
D	E	F
G	H	I
J	K	L

M	N	O
P	Q	R
S	T	U
V	W	X

Y	Z	1
2	3	4
5	6	7
8	9	0