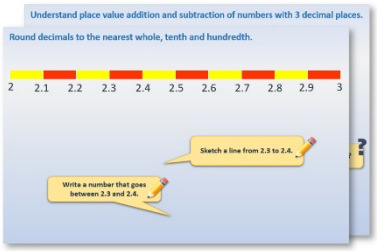
Week 13, Day 5

3-D shapes, $^1/_2$ and $^1/_4$ turns

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

1. Start by reading through the **Learning Reminders**. They come from our *PowerPoint* slides.



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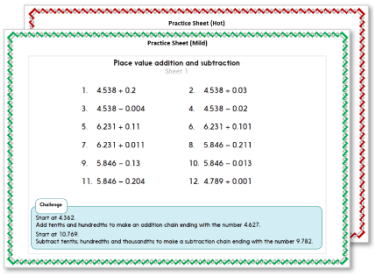
2. Tackle the questions on the **Practice Sheet**. There might be a choice of either Mild (easier) or Hot (harder)! Check the answers.



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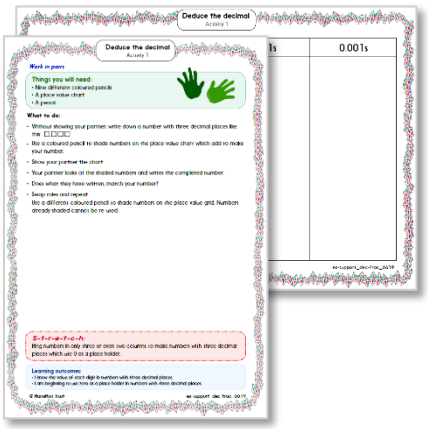
3. Finding it tricky? That's OK… have a go with a grown-up at **A Bit Stuck?**



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

Learning Reminders

Recognise 3-D shapes.

Find a tin of beans.
How many circles can you see?
Where are they on the tin?
Can you see the curved face around the middle of the tin?

It's a cylinder!

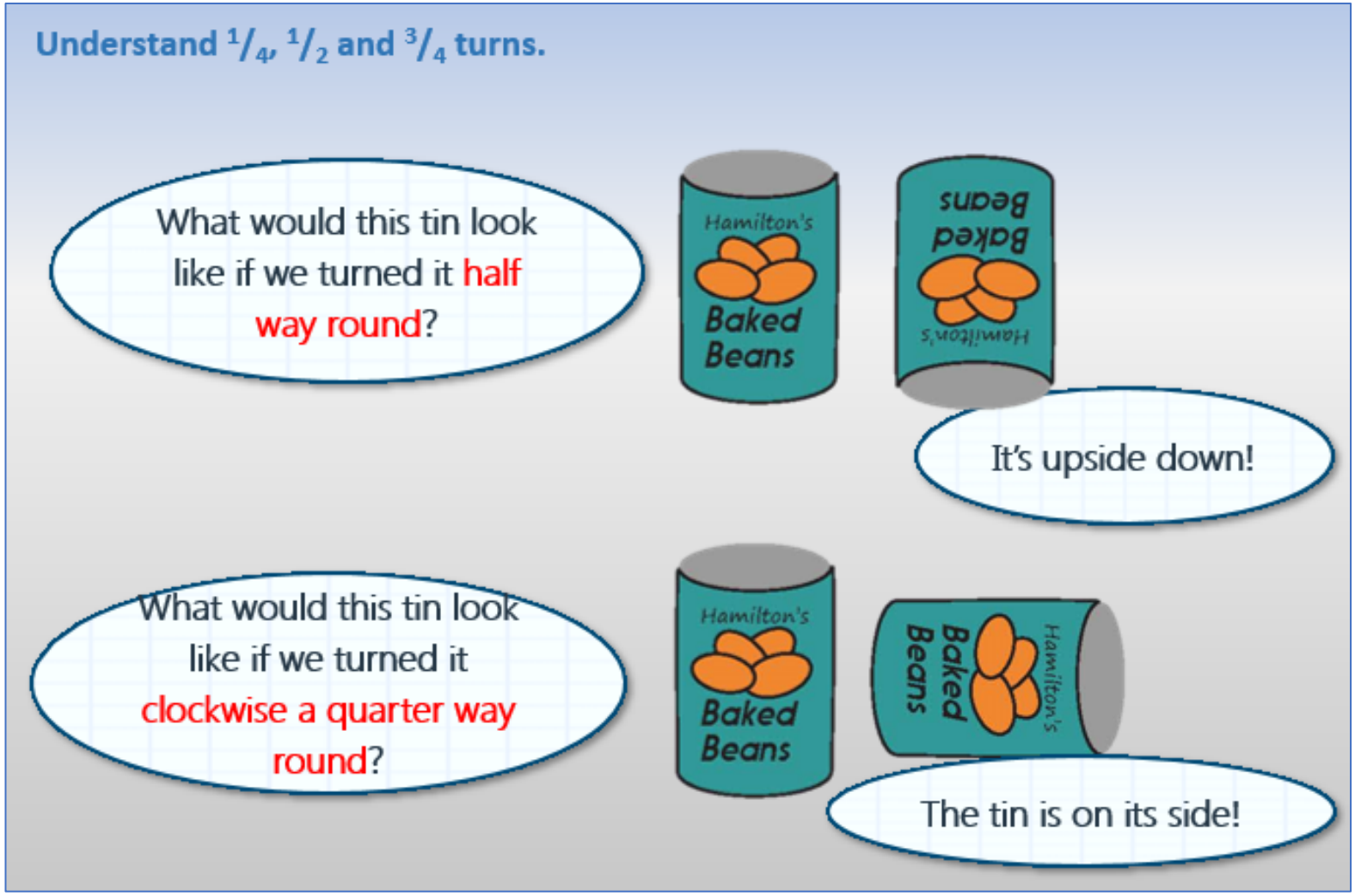
Now find a cereal box. What shape are its faces? Count them... How many altogether?

It's a cuboid!

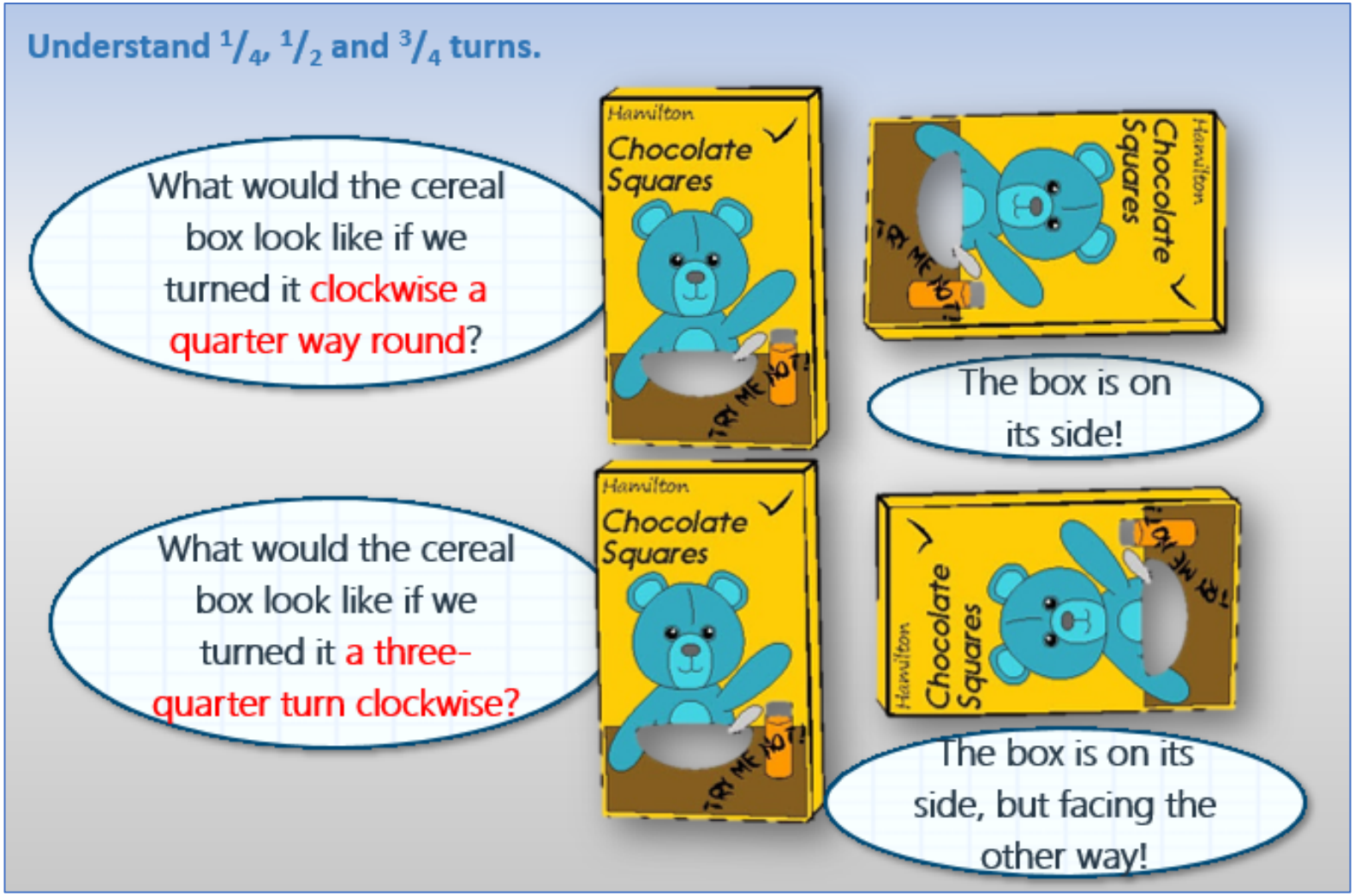
Now imagine a football.
What shape is it?

It's a sphere!

Learning Reminders



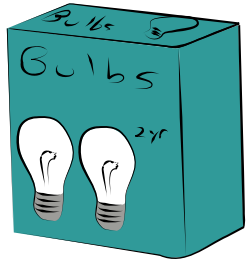
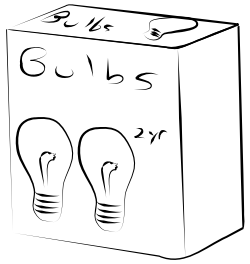
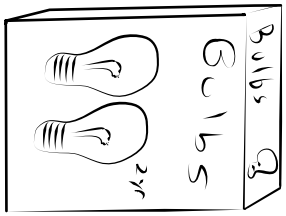
Learning Reminders



Practice Sheet Mild

3-D objects

Use cut up pictures from the '3-D objects' Resource sheet to stick on in the correct position.

No turn	$\frac{1}{4}$ turn	$\frac{1}{2}$ turn	
			
			
			

Practice Sheet Mild

Resource sheet

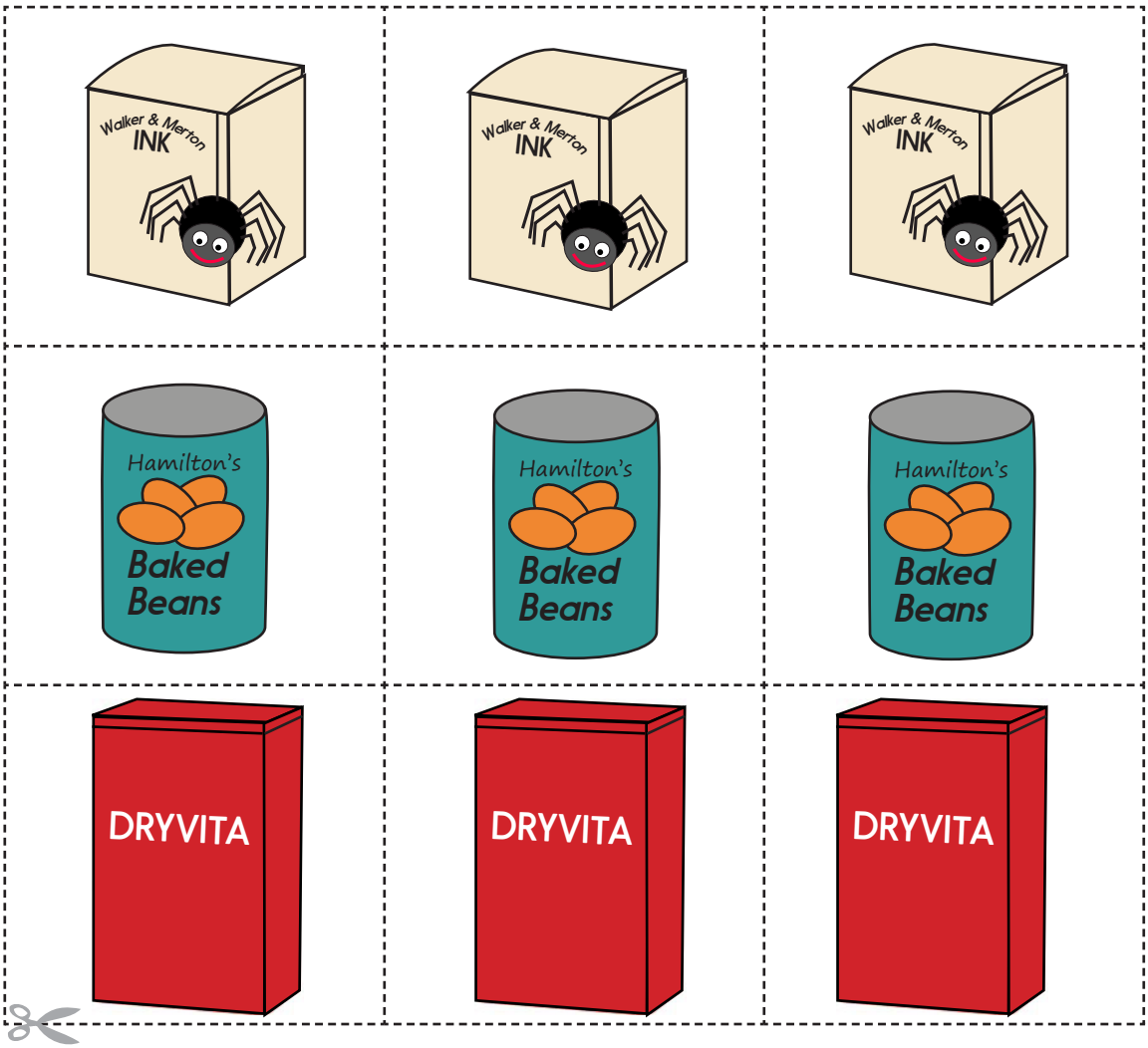
Use cut up pictures from the '3-D objects' Resource sheet to stick on in the correct position.

Practice Sheet Hot
3-D objects

	$\frac{1}{2}$ turn	$\frac{1}{4}$ turn	no turn
	no turn	$\frac{1}{2}$ turn	$\frac{1}{4}$ turn
	$\frac{1}{4}$ turn	no turn	$\frac{1}{2}$ turn

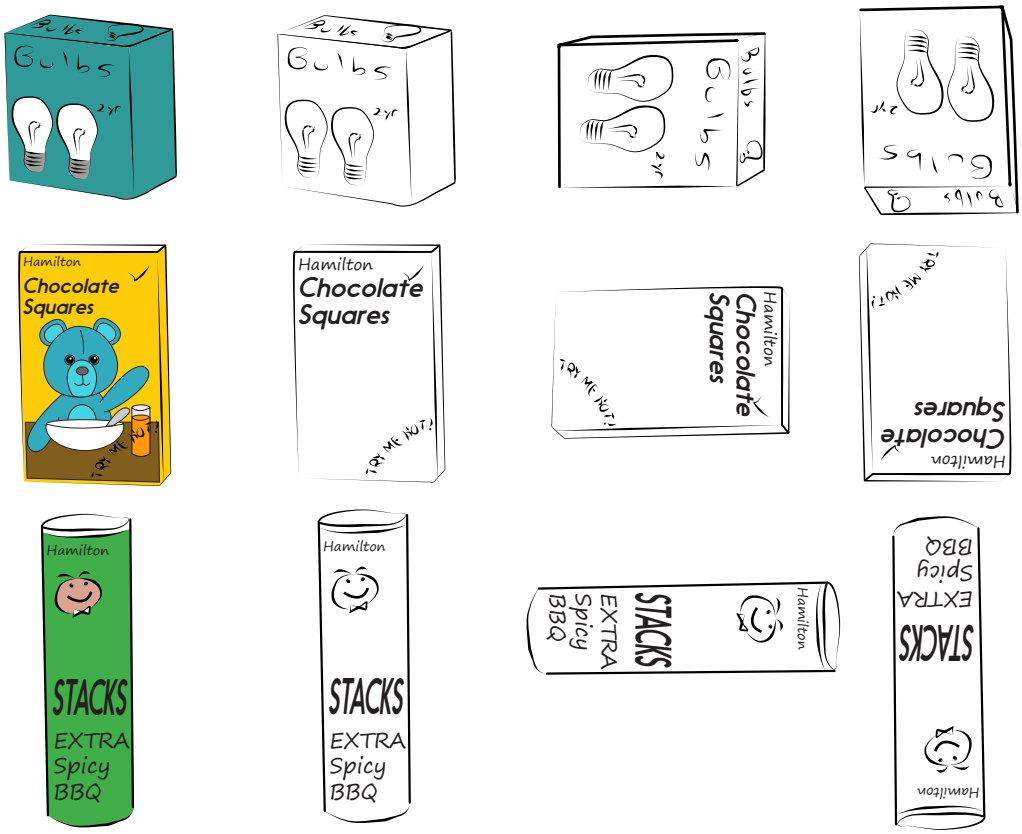
Practice Sheet Hot

Resource sheet

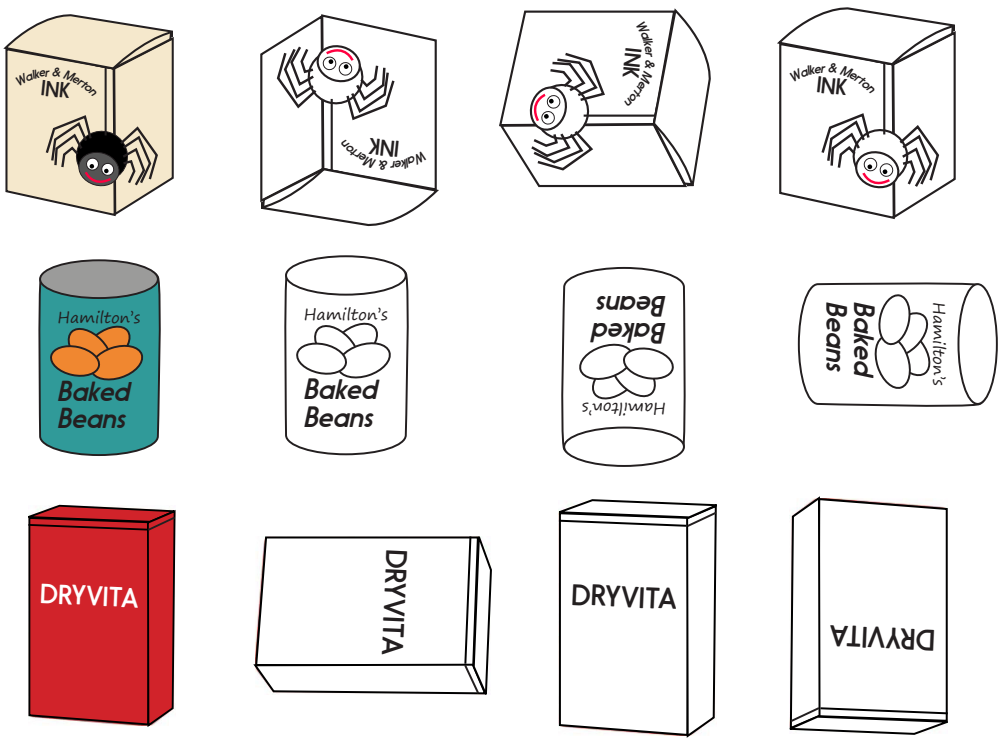


Practice Sheet Answers

Practice Sheet (Mild)



Practice Sheet (Hot)

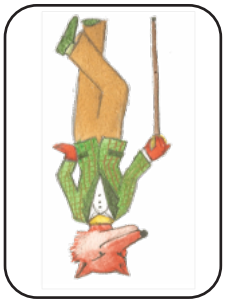


A Bit Stuck?
In a spin

$\frac{1}{4}$ turn	$\frac{1}{2}$ turn	$\frac{3}{4}$ turn

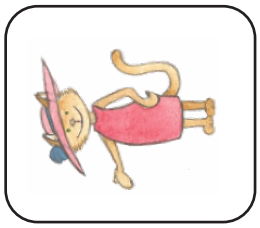
What to do:

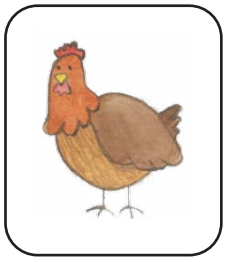
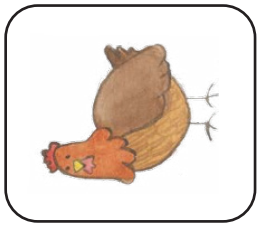
- Look at picture a.
- What turn has been made to create picture b?
- Write the turn beside the pictures.
  Do the cards above help...?



_____ turn



_____ turn



_____ turn



_____ turn



_____ turn

Spin the mouse

Children turn a mouse through a rolled number of quarter or half turns, aiming to get the mouse facing home again.

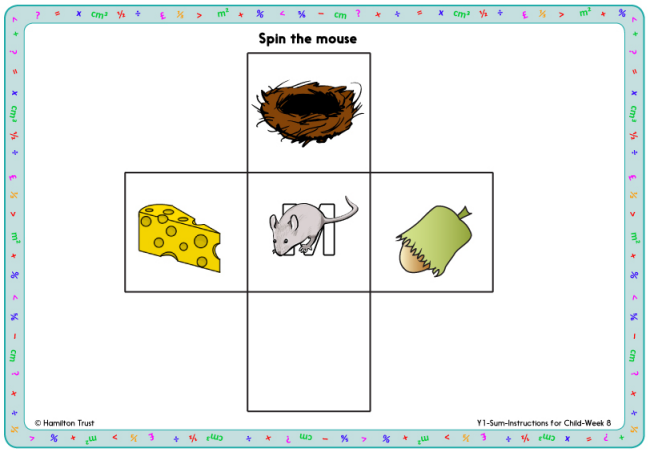
Skills practised:

- Using ¼ and ½ turns
- Using the knowledge that two halves make a whole and four quarters make a whole

***Conjecture**: It is possible to plan the numbers of half and quarter turns needed to make the mouse face home.*

What to do:

Children play in pairs.
Each pair needs a 1-6 dice and a mouse attached to the centre of a game board with a loose brass fastener like this (see child sheet for resources):



1. Children start with the mouse facing home (the nest).
2. They take it in turns to roll a 1-6 dice. They choose to turn the mouse that number of ¼ or ½ turns.
3. The aim is get their mouse pointing home again. If they do, they score a point. If not, they leave the mouse facing that direction ready for their next turn. If the mouse faces the empty square, they lose a point (if they have any).
4. When their mouse isn't facing home, encourage children to try and predict where it will face after the rolled number of ¼ or ½ turns.

If the mouse is facing home, which numbers on the dice get the mouse to face home again? Which numbers work for ½ turns? For ¼ turns? For both?

HINT: *How many ½ turns make a whole turn? How many ¼ turns make a whole turn?*

CHALLENGE: *If you could make your own dice, which six numbers would you put on the faces of the dice to be really good at this game? The six numbers MUST be different!*

Aim:

– To plan ahead and make decisions accordingly

Minimum number of calculations expected

N/A

Investigation
Spin the mouse

1. Start with the mouse facing home (the nest).

2. Take it in turns to roll a 1 to 6 dice. Choose to turn the mouse that number of $\frac{1}{4}$ or $\frac{1}{2}$ turns.

3. The aim is to get your mouse pointing home again. If you do, you score a point. If not, you leave the mouse facing that direction ready for your next turn. If the mouse faces the empty square, you lose a point (if you have any).

4. When your mouse isn't facing home, try to predict where it will face after the rolled number of $\frac{1}{4}$ or $\frac{1}{2}$ turns.

   If the mouse is facing home, which numbers on the dice get the mouse to face home again?

   Which numbers work for $\frac{1}{2}$ turns? For $\frac{1}{4}$ turns? For both?

Roll a 3
Three $\frac{1}{4}$ turns makes mouse face the cheese

Roll a 2
Two $\frac{1}{2}$ turns makes mouse face...

Challenge

If you could make your own dice, which six numbers would you put on the faces of the dice to be really good at this game? The six numbers MUST be different!

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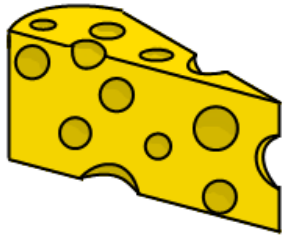
Investigation

Spin the mouse



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