

Maths Challenges

She makes ham and cucumber sandwiches.

Each has slices of ham and pieces of cucumber.

• How many of these does Sandy need?

slices of bread slices of ham pieces of cucumber

She makes bacon and lettuce sandwiches.

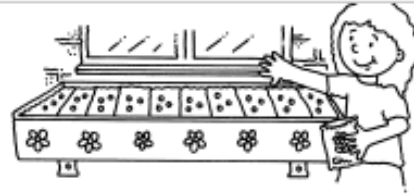
Each has pieces of bacon and leaves of lettuce.

• How many of these does Sandy need?

slices of bread pieces of bacon leaves of lettuce

Maths Challenges

Wendy divided her window box into 10 parts. She planted 3 seeds in each part.



1 How many seeds did she plant in total?

$$10 \times 3 = 30$$

2 She had 35 seeds altogether.
How many didn't she plant?

3 The 35 seeds cost 70p altogether.
How much did each seed cost?


4 15 of the seeds were flower seeds.
The rest were vegetable seeds.
How many was this?

5 Only 6 of the 15 flower seeds grew.
How many did not grow?

6 Wendy picked 5 tomatoes from each
of her 3 tomato plants.
How many tomatoes did she pick?

7 Wendy dug up 12 small potatoes.
She shared them equally with her friend.
How many did they each have?

Maths Challenges

- Match each question with a number sentence 
- Some number sentences can be used more than once.

1 There are 18 daisies. Beth takes away 3 of them. How many daisies are there now?

2 There are 18 counters in a pile. Fred puts 3 more in the pile. How many now?

3 There are 18 people on a bus. 3 people get off. How many are there now?

4 18 sweets were shared between 3 friends. How many sweets do they each get?

5 Ben had 18p. He buys a cake costing 3p. How much money does he have now?

6 A plant was 18 cm tall. It grew 3 times as tall. How tall is it now?

7 18 grapes were shared equally between Lee and 2 friends. How many grapes did Lee get?



$$18 - 3 = 15$$

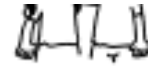
$$18 * 3 = 54$$

$$18 + 3 = 21$$

$$18 \div 3 = 6$$

Maths Challenges

- Match each question with a **number sentence**.
- Some number sentences can be used more than once.



1 There are 36 daisies. Beth takes away 4 of them. Kat picks 7 more. How many daisies are there now?

2 There are 36 counters. Fred takes 4 and Sean takes 7. How many are left?

3 There are 36 people on a bus. 4 people get off and 7 get on. How many are left?

4 36 sweets were shared between Josh and 3 friends. Josh ate 7 of his sweets. How many does he have left?

5 Ben had 36p. He buys a cake costing 4p and a drink costing 7p. How much money does he have now?

6 A plant was 36 cm tall. It grew 4 cm and then a further 7 cm. How tall is it now?

7 36 grapes were shared between Lee and 3 friends. Then Lee was given 7 more grapes as well. How many has he now?

8 Harry was given 36p each day for 4 days. He spent 7p of this money. How much does he have now?



$$36 - 4 + 7 = 39$$

$$(36 \div 4) - 7 = 137$$

$$36 - 4 - 7 = 25$$

$$36 + 4 - 7 = 33$$

$$(36 \div 4) + 7 = 16$$






$$(36 \times 4) + 7 = 151$$

$$(36 \div 4) - 7 = 2$$

$$36 + 4 + 7 = 47$$

Maths Challenges

- Use the information in this box to solve each puzzle.

				
Reliant Robins 3 wheels	Lorries 8 wheels	Tractors 4 wheels	Bikes 2 wheels	Caravans 6 wheels

1 There are only caravans and bikes on a road.

There are 10 wheels in total.

How many: caravans? bikes?

2 There are only tractors and caravans on a road.

There are 14 wheels in total.

How many: tractors? caravans?

3 There are only lorries and Reliant Robins on a road.

There are 25 wheels in total.

How many: lorries? Reliant Robins?

4 There are only tractors and Reliant Robins on a road.

There are 17 wheels in total.

How many: tractors? Reliant Robins?

NOW TRY
THIS!



- Make up wheel puzzles of your own to solve.

Maths Challenges

Applying our learning about 3, 4 and 8 times tables: A Challenge!

Reasoning and Problem Solving Multiplication and Division Consolidation – Year 3



Ever wondered what life is like on the top and the bottom of the world?

Antarctica (The South Pole) was only discovered in 1820, it is the second smallest continent. It is a land of ice. The Arctic Ocean (The North Pole) is by far the smallest and the shallowest of the world's oceans. It has a thick layer of ice floating in the centre of the ocean, about 5m thick. Would you like to learn more? You'd better get some warm clothes on, it's going to be cold!

Did you know?

Polar bears and penguins will never meet in the wild, only in zoos. Polar bears live in the Arctic while penguins live in Antarctica.

Ok, are you ready for the first expedition? We are going to face a few challenges along the way but I'm sure with your help we will be able to solve anything.

There are many creatures in the Arctic Ocean, they have adapted to the cold in order to survive.

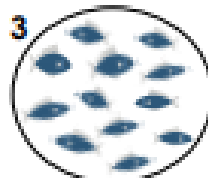
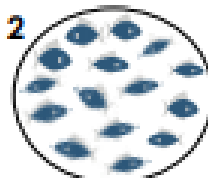
Polar bears have very large, furry feet, this helps them to distribute their weight evenly on the thin ice. They have lots of white fur which helps to keep them warm.

There are also snowy owls, snow geese, grey wolves, beluga whales, harp seals and arctic foxes.

These animals mainly eat fish, let's make sure everyone gets fed today!

1. Match the animals so they each get the correct amount of food.

The wolves need to have 5 fish each. The whales need 3 fish each. The polar bears need 6 fish each.



Maths Challenges

Reasoning and Problem Solving Multiplication and Division Consolidation – Year 3

Now we've sorted out the animals, we need to help the families here in Greenland. Greenland is the largest island in the world and it is next to the Arctic Ocean. It is completely covered in ice, all year round. Fire is essential to cook and keep the people warm.

2. Aani and her husband Klaus share the firewood that they have collected for the families in the village equally. They have collected 33 pieces of firewood and there are 3 families that live in their village.

How many pieces will each family get?

$$33 \div 3 = \boxed{}$$



Do you like sledging? Travelling around Greenland can be lots of fun. People use dogs to pull their sledges to travel around.

3. For every sledge we need 8 strong dogs to pull it efficiently. Fill in the table to work out how many dogs we will need for 3, 4, 5 and 6 sleds?



Number of sledges	Number of dogs
3	
4	
5	
6	

If there were 56 dogs, how many sledges would we need?

sledges

Brilliant! So, we have the dogs and sledges sorted, now we need your help to get enough rope to tie the sledges together.

4. Each piece of rope is 4m, there are 6 pieces of rope. How long is the rope when they are joined together?

The rope is m long.

Maths Challenges

Reasoning and Problem Solving Multiplication and Division Consolidation – Year 3

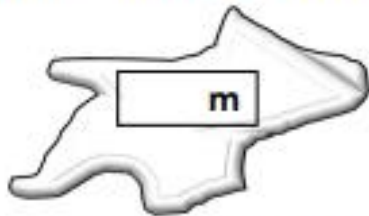
Now, let's head down to The South Pole and join some penguins.

5. Here in Antarctica the ice is three times as thick as in the Arctic Ocean.

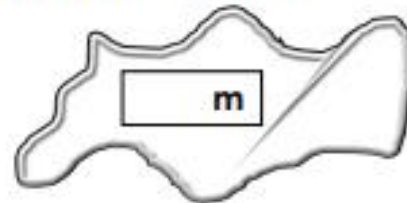
How thick is the ice in Antarctica?

Look back at the introduction to find out how thick the ice in the Arctic Ocean is and then work out the thickness of the ice in Antarctica.

Write your answers in the ice floes (large pieces of ice that float on the water).



Depth of the ice in the Arctic



Depth of the ice in Antarctica

The tallest penguin in Antarctica is the Emperor penguin, it can grow to a very tall 128cm.

6. 128 is a multiple of 8. Tick all the other penguins who have a height which is a multiple of 8?



64cm



108cm



72cm



96cm

In Antarctica shelters are built out of ice, these are called igloos.

7. How many igloos can we build out of 48 blocks of ice.

Each segment of the igloo uses 4 blocks of ice. How many segments will the igloo have?

