

Maths Mastery Home Learning Challenge

Adult Guidance

What Are We Learning?

We are learning about capacity and how to describe how full containers are.

How to Set up the Challenge

- Gather a selection of clear plastic bottles and place them in a tray, sink or bath. You could also use clear plastic cups or containers.
- Fill a jug or bowl with water. You may wish to colour the water using a little food colouring to make it easier to see inside the bottles.
- Encourage your child to explore filling the bottles.
- Your child could try pouring water into the bottles using a jug or they could fill the bottles by holding them in a sink or bowl of water.
- Talk about how full the bottles are with your child. Can they use the words empty, nearly empty, half full, nearly full and full to describe the bottles as they fill them?

How to Get Your Child Thinking

- What can you tell me about this bottle?
- Can you pour some water into this bottle so that it is half full?
- Can you make this bottle nearly empty? How?
- Which bottle is full/empty/nearly full?
- How do you know this bottle is nearly full?
- I think this bottle is nearly empty. Am I correct? Why? Why not?
- How can we change this bottle so that it is nearly full?



Full or Empty?



- Gather a set of plastic bottles.
- Use a jug or bowl to put some water into each bottle.
- Can you tell a grown-up about how full each bottle is?
- Can you fill a bottle right to the top? Can you create a bottle that is half full?

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What Are We Learning?

We are learning to use language related to weight.

How to Set up the Challenge

- Gather some objects from around the house, such as toys, books, tins and packets. Try to find a range of different sizes and weights, and to find a couple of objects which are large but light or small but heavy.
- Ask your child to choose two objects and hold them in their hands while they stretch their arms out to the sides, as if they were a balance scale.
- Talk to your child about which object feels heavier and which feels lighter.
- Ask them to tip to the side which is heavier like a balance scale would.
- Repeat with different objects. If the objects are too big to hold, try giving your child two buckets or carrier bags to hold and put the objects in them.
- If you have a set of balance scales, you could take this further by helping your child to weigh objects, such as building bricks, buttons, coins or other small objects.

How to Get Your Child Thinking

- Which object is heavier?
- Which object is lighter?
- Can you find the heaviest or lightest of all the objects? How would you do that?
- Are the biggest things always the heaviest? How can we find out?
- Are the smallest things always the lightest? How can we find out?
- Do any of the objects weigh about the same?
- Do all cardboard boxes have the same weight?



Heavier or Lighter?



- Find some objects from around your house.
- Hold one item in each hand and then hold your arms out so you look like a balance scale.
- Decide which object is heavier and which is lighter. Then, bend to the heavier side like a real balance scale.
- Repeat with different pairs of objects and tell a grown-up what you have found out.

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What Are We Learning?

We are learning about weight.

How to Set up the Challenge

- Fill two shopping bags, one with many small items and the other with one or two larger empty or light boxes. Do not tell your child that the boxes are empty.
- Show your child the two bags and ask them to look inside without touching.
- Ask your child to predict which bag they think will be the heaviest and why.
- Allow your child to pick up the two shopping bags and ask them to show which bag is heaviest by moving their arms like weighing scales.
- Repeat this activity using a different combination of items.



How to Get Your Child Thinking

Try asking questions, such as:

- Why have you made that prediction?
- Are large things always heavy? Are small things always light?
- Can you think of an example of a small heavy object?
- Can you show me which one is heaviest using your body?

Ask your child to fill shopping bags by themselves for you to predict which one is the heaviest or lightest. Take other household items and make predictions about their weights using your hands.

Weight



- There are many things in this bag. Will that make it heavy or light?
- This object is large. Do you think that makes it heavy or light?
- Which object do you think weighs the most and why?
- What have we found out today?

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What Are We Learning?

We are learning to use language related to length.

How to Set up the Challenge

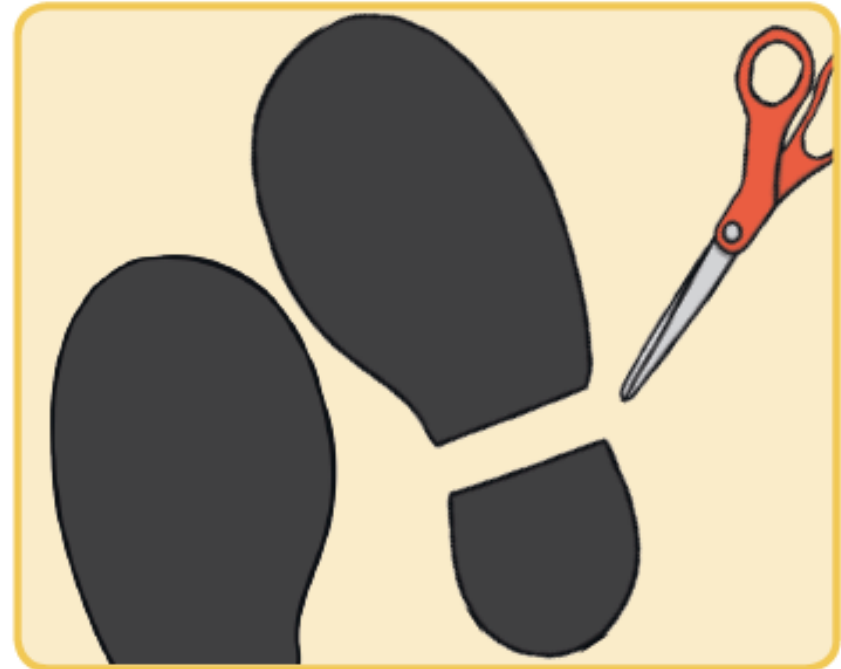
- Gather two pieces of A4 paper and ask your child for one of their shoes.
- Support your child to draw around their shoe on each piece of paper, creating a shoe template. Then, help your child to cut each template out.
- Explain that you are going to use the footprints to find out which is the longest room and which is the shortest room in the house.
- First, discuss with your child how many footprints long they think each room might be. Can they make a prediction?
- Next, use the footprints to measure the length of each room.
- Once each room is measured, encourage your child to think about their predictions. Were they correct?



How to Get Your Child Thinking

- We are measuring the length of this room today. Can you explain what length is? Can you say how it is different to width?
- Which room is the longest? How do you know?
- Which room is the shortest?
- Encourage your child to use language related to length, such as short, shorter, shortest, long, longer, longest.
- Support your child to use these words in full sentences. For example, 'The bedroom is longer than the bathroom.'

Length



- Draw around your shoe on two pieces of paper. Then, cut the footprints out.
- Can you use the footprints to measure the length of the rooms in your house?
- Which room is the longest?
- Which room is the shortest?

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What Are We Learning?

We are learning about height.

How to Set up the Challenge

- For this challenge, you will need some toys of varying heights; string or ribbon, scissors and labels.
- First, ask your child to predict which toy will be the tallest and which will be the shortest.
- Using the string or ribbon, measure each toy. Support your child to write the name of the toy on each label, so you know which string belongs to which toy.
- Challenge your child to order the pieces of string from shortest to tallest.

How to Get Your Child Thinking

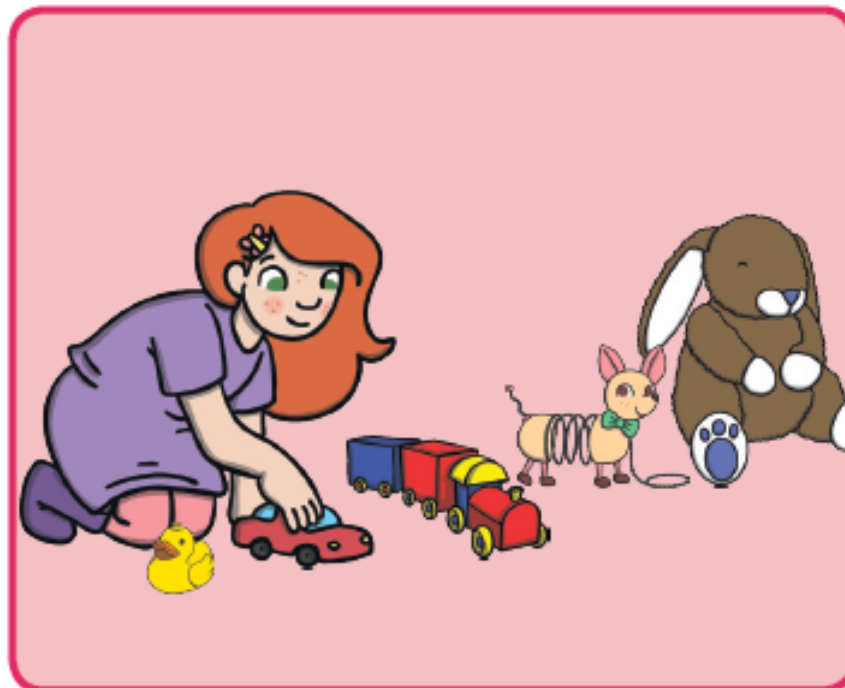
Try asking questions, such as:

- Can you predict which toy is the tallest? Why have you made that prediction?
- Which toy do you think is the shortest? Why?
- Which toy is of medium height?

To extend your child's understanding of height and measurements, you can introduce another way of measuring the toys heights. This could be through building bricks. Discuss how many building bricks tall each toy is, which toy is tall/tallest, short/shortest and which toys are in the middle/medium.



Height



- Which toy is tall? Which is the tallest?
- Which toy is short? Which toy is the shortest?
- Can you think of another way to measure the height of your toys?
- How could you describe the toys that are in the middle?