

Ups and downs

Focus of activity: Comparing weights by direct comparison.

Working together: conceptual understanding

- Show children a bag of flour and a similar size bag of cotton wool. *Which do you think is heavier?* Ask children to answer, then pass the two bags round the group. Which do they think is heavier now?
- Show children a bucket balance. Put the bag of cotton wool in one side and the bag of flour in the other. Discuss what happens, i.e. the bucket with the heavier bag goes down, and the bucket with the lighter bag goes up. *The balance is a bit like a see-saw. If you get on one side and I get on the other side, my side will go down, and your side will go up because you are lighter.*
- Show children a small can of beans (smaller than the bag of cotton wool). Ask a child to stretch their arms out like a see saw. Put one item in each of their hands. Ask them to 'be the balance' and act out what they think will happen. They should tilt their arms like a see-saw.
- Put the can of beans and the bag of cotton wool in the bucket balance. Were they right? Point out that although the can of beans is smaller, it's heavier than the cotton wool.
- Repeat with a sponge and a stone.

Up for a challenge?

Spread a selection of food items on the table. Ask children to suggest an item which they think may be heavier than the stone. They hold both before testing their idea by putting both in the bucket balance. Repeat. Now ask children for an item which they think might be lighter than the stone.

Now it's the children's turn:

- Give each pair a bucket balance, and a selection of toys to weigh (of different sizes and weights, including small heavy and large light toys), for the group to share. Each pair of children choose a pair of toys. They guess which is heavier, and pretend to be the scales. They test out their thoughts by using the bucket balance to compare the weights.
- Go round the group and observe them as they estimate and weigh. As children are not recording, you may wish to make notes as a record of their work. Watch out for children who think that heavier items go up because 'up' is more.

S-t-r-e-t-c-h:

If children cope well, ask them to choose a toy, and then choose one which they think might be lighter. They use the bucket balance to check. Repeat, but this time they choose a heavier toy.

Things to remember

Ask children to say whether the bucket with the heavier toy in goes up or down. *And the bucket with the lighter toy?*

You may want to add something that has emerged from the activity. This may refer to misconceptions or mistakes made.

Resources

- A bag of flour, a bag of cotton wool of about the same size, a small can of beans, a small stone, a sponge and range of food items some of which are heavier than the stone and some which are lighter
- A bucket balance
- A selection of items to weigh (e.g. toys of different sizes and weights, including small heavy and large light toys)

Outcomes

1. Children can compare the weights of two items using a bucket balance.
2. Children begin to predict if an object is heavier or lighter than a given object.

Ups and downs

Work in pairs

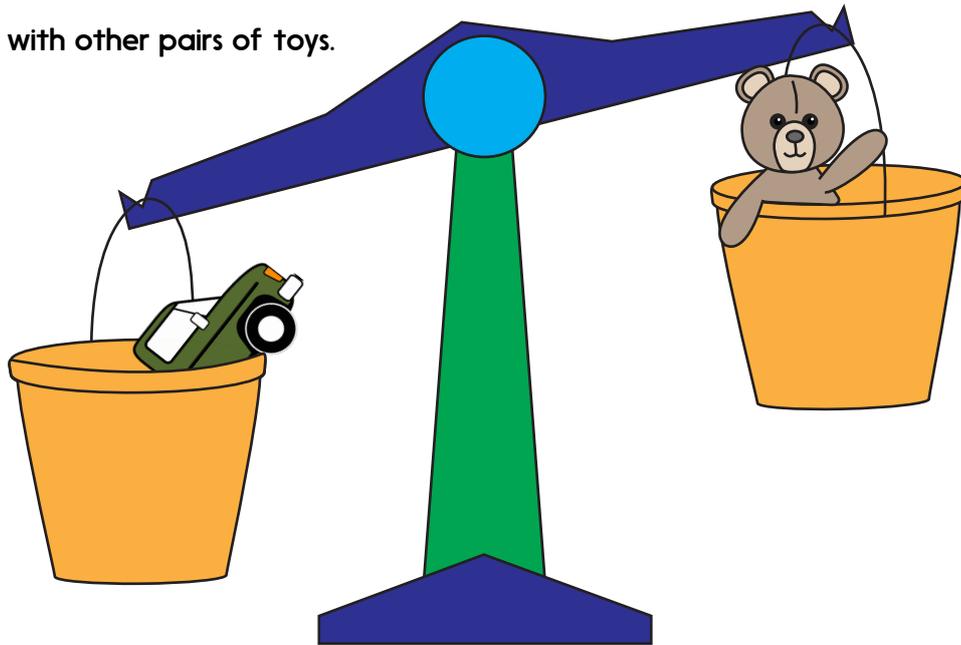
Things you will need:

- Toys
- A bucket balance



What to do:

- Choose two toys.
- Guess which is heavier. Hold a toy in each hand. Be the balance! Which arm needs to move up and which needs to move down?
- Put a toy in each bucket of the balance. What happens? Which toy is heavier? Were you right?
- Put the toys back.
- Repeat with other pairs of toys.



S-t-r-e-t-c-h:

Choose a toy. Now choose a toy which you think will be lighter than the first toy. Use the bucket balance to check. Now choose a toy which you think will be heavier. Use the bucket balance to check.

Learning outcomes:

- I can compare the weights of two toys using a bucket balance.
- I am beginning to predict if a toy will be lighter or heavier than another toy.