

Science Time



Experimenting at Home – Parent Resource

Balancing

To compliment this resource, watch the ‘Experimenting at Home - Balancing’ video online and read the ‘Exploring with your Little Scientist Parent Resource’ sheet.

Resources

- Things to balance on and with (e.g. rulers, blocks, spoons, toys, plastic bottles)
- Things to make a set of scales (e.g. coat hanger with clips, 2 plastic zip lock bags, or coat hanger, 2 containers or cups, wool or string,
- Somewhere to hang your scales (e.g. door knob, clothes rack or two chairs and broomstick)

Safety

- Avoid breakable items when experimenting with balance

Getting started

Centre of balance

When things balance it means they are steady and don't fall. Everything has a centre of balance, where there is the same amount of weight on all sides. A



person's centre of balance is about where their bellybutton is. Use a sticker or some tape to mark your bellybutton while experimenting.

Body balance

Start by balancing on two legs. What happens if you move your centre of balance over to the side? Do you get unsteady and fall over? Try balancing on one leg. This is a bit harder because there is only a small part of you touching the ground and it's hard to keep your centre of balance above your foot. Experiment with balancing while walking along a line of string or tape on the floor.

Waiter

Experiment with balancing a plastic plate on your hand like a waiter. Try putting things on the plate and moving them around.

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Exploring further

Balancing flat objects

Try to balance something long and flat (like a ruler) on a bottle or tower of blocks. Experiment with where to place the ruler so that it doesn't fall off. When it's balanced it has the same amount of weight on both sides. The part of the ruler touching the top of the bottle or blocks is its centre of balance. Experiment with balancing other flat objects and try to find their centre of balance.

Adding extra weights

Explore what happens if you add something like a block to one side of the ruler. Watch what happens and experiment with moving it around until you find the new centre of balance. Experiment with trying to balance things which are heavier on one side, like a spoon or a brush. Keep moving the object around until it balances and you will find its centre of balance.

Balancing interesting shapes

Experiment with trying to balance things that aren't flat, like stuffed toys or toy cars. It's a bit tricky! Look at the shapes, feel which bits are heaviest and keep moving them around until they balance.

Extra Challenges

Encourage children to use their understandings of balance to attempt the following challenges;

- **See Saw:** Build a see saw for your toys. Flatten one side of a cardboard tube and tape a ruler or piece of cardboard across the top so that the see saw is balanced, with both sides off the ground. Place a toy on each end to find out which toy is heavier. Experiment with moving toys around on the seesaw so that it is balanced, even if one toy is heavier than the other.
- **Coathanger scales:** Make a set of scales by hanging a bag or container off each end of a coat hanger. Hang the coathanger scales on a doorknob or somethings similar. You can use your scales to measure which of your toys are heavier. First feel the weight of two toys and have a think about which one is heavier. Then put one toy in each end of the scales and test. The heavier end will go down. Test lots of different toys and find the heaviest and lightest toy. You can also use your scales to measure how heavy your toys are. Place a toy in one side of the scales and in the other side add blocks until the scales are balanced, count how many blocks are needed. Compare different toys.

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 King Edward Terrace, Canberra

t 02 6270 2893
 e sciencetime@questacon.edu.au



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