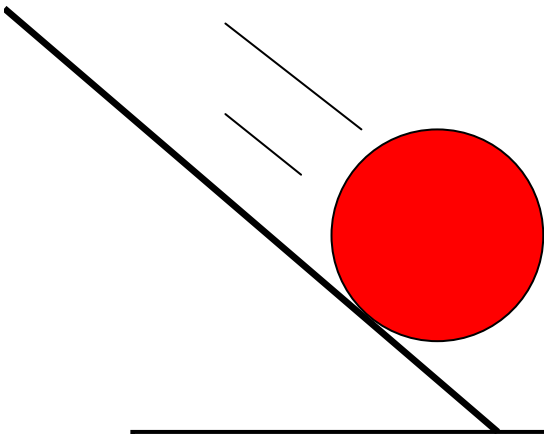
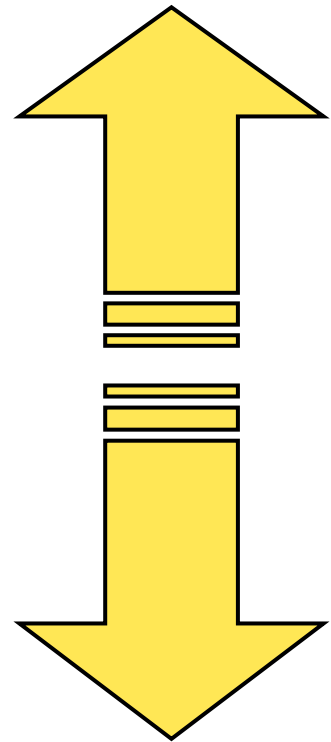
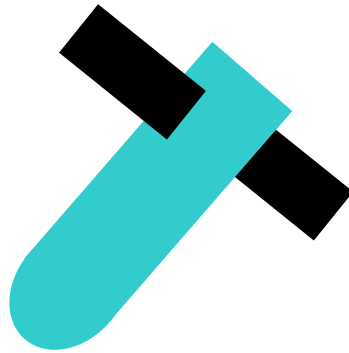


Explore@Bristol

Pushes and pulls ▶▶ Trail

Pushes and pulls make things move.

Use this trail to take a trip around **Explore@Bristol** and discuss some pushes and pulls with your group



Name _____ Date _____

✓ Tick box



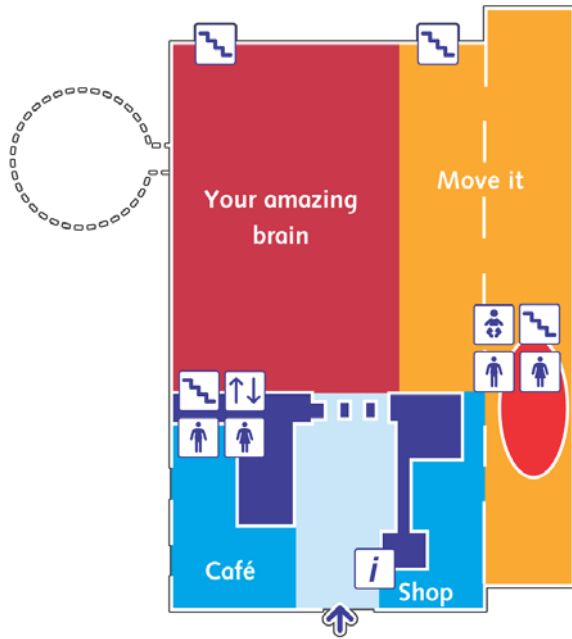
Write or Draw



Discuss

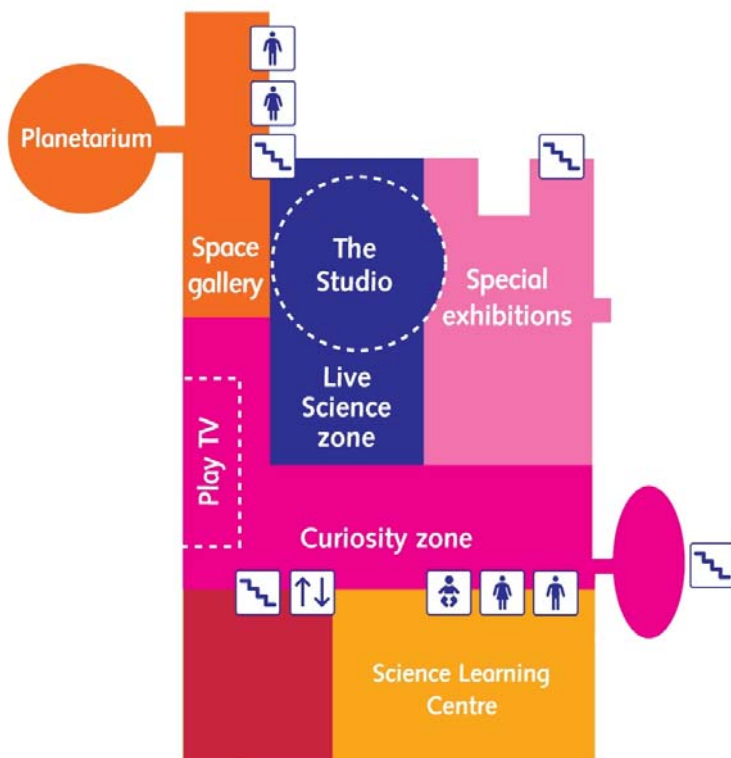
Explore Map

Follow the trail around the exhibitions within **Explore**.
These are the exhibits you'll need to find on your journey.



Ground Floor

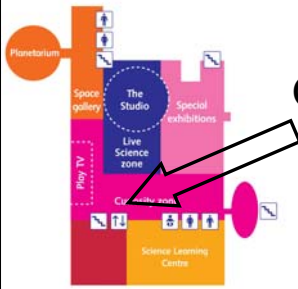
Launch it



First Floor

Leaning lounge

Black sand

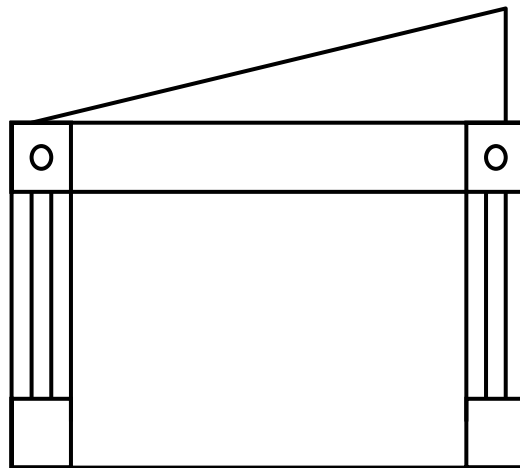


Go upstairs to the **Leaning lounge**

Walk into the Leaning lounge. You might feel a bit strange when you are in this room! Have a look around.

Go to the fireplace. Try to roll the ball up the slope.

Draw the ball on the diagram below to show where it stops.



Where does a ball normally stop if it is on a slope?

How does this trick work?
Here are some ideas from other children. Do you agree with them? Discuss in your group

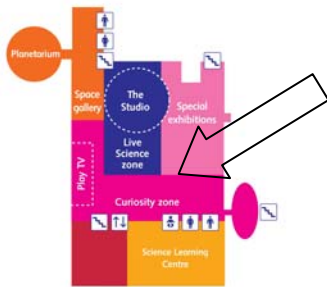
Hint: you might need to test some of their ideas.

The ball has an engine in it so it can drive uphill.

The ball can go uphill because the slope is pushing it up.

There is something on the slope that makes the ball roll uphill.

The leaning floor makes it look like the ball is going uphill, but really it is rolling downhill.



Go to **All about our world**

Find the black sand.

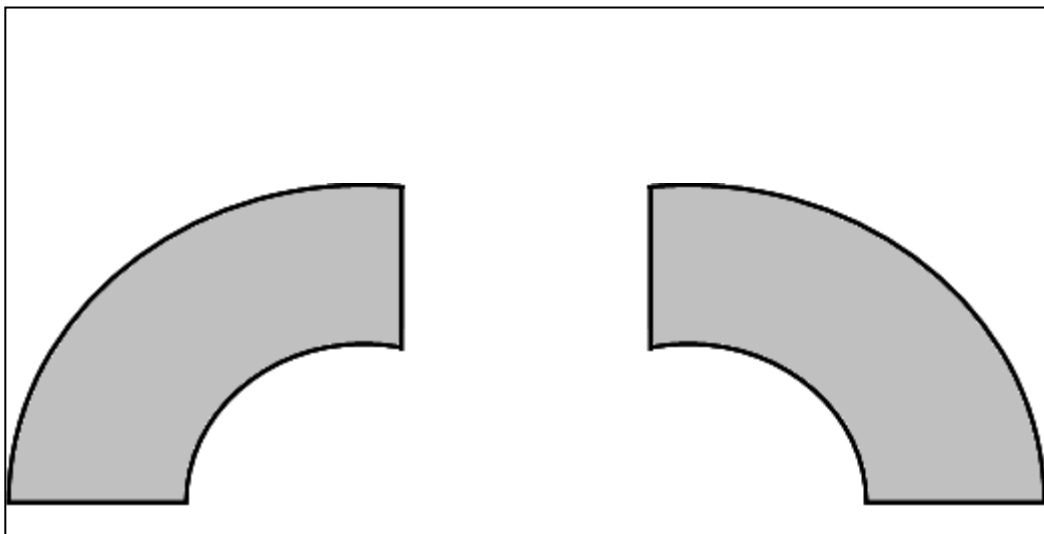
Pick some black sand up and sprinkle it over the big pieces of metal. Try using the sand in lots of different ways. Here are some ideas:

- Drop the sand from different heights.
- Use different amounts of black sand.
- Try to join the two pieces of metal with a 'bridge'.



Choose you favourite result.

Draw the black sand on the diagram below.



Why does the black sand do this?

This is what other children have said. Talk with your group and decide who you agree with.

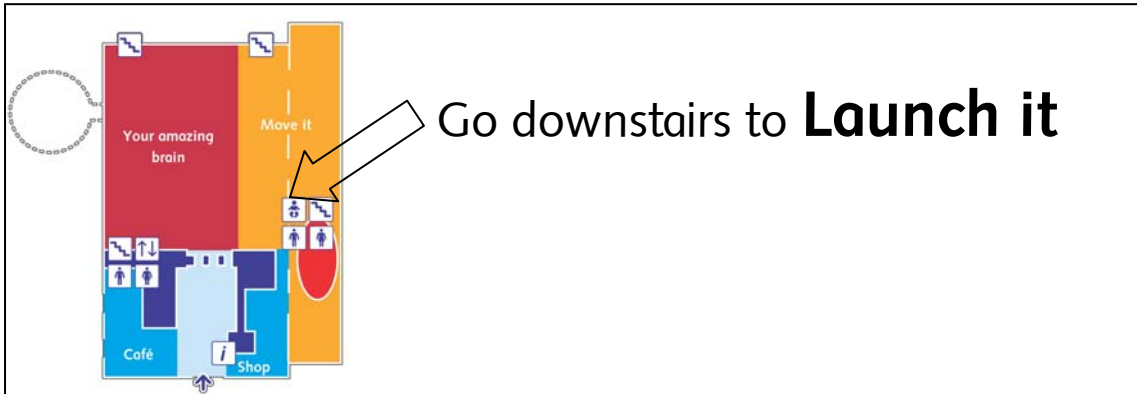
Hint: there may be more than one person you agree with.

**The black sand is sticky.
It sticks to the metal.**

**The big pieces of
metal are magnets.**

**The black sand sticks
because it is heavy.**

**The black sand is
magnetic. It is pulled
towards the magnets.**



Go downstairs to **Launch it**

Launch it can be used to make different rockets and watch how they fall. Make some rockets of your own. Here are some ideas for things to change.

No wings

Four wings

Add a parachute

Only one wing

Try your own ideas!

Which changes make the rocket faster?
Which changes make the rocket slower?

Changing things like wings and a parachute makes the rocket fall at different speeds.

Design two rockets of your own – one that is fast, and one that is slow.



My fast rocket



My slow rocket