

Playing with science (Foundation & KS 1)

PREPARATION GUIDE

Playing with science is an interactive science show that uses toys to explore science concepts from a range of topics relating to forces.

Our shows are designed to work flexibly as introductions to a topic or to revise a topic depending on what approach teachers would like us to adopt with particular audiences.

Teachers may wish to use this overview to help to prepare their classes before the show. Introducing or revising key vocabulary and concepts in advance of the show tends to increase the learning outcomes from the presentation.



Key concepts and vocabulary

- **Science** as a way of asking questions. This is what scientists do continually. The show will encourage children to use their natural curiosity to develop ways of asking different kinds of questions – for example “how does this work?”; “what would happen if I changed this?”; “do these two toys work the same way?”
- Pushes and pulls as **forces** that change things – they make objects move or change shape.
- **Air** is all around us. Although we can’t see it or normally feel it, air pushes equally in all directions.
- **Magnets** can make objects move at a distance - without touching the objects. Sometimes the magnets will pull towards each other, and other times they will push apart.
- Everything feels a pull down towards the ground – we call this pull **gravity**.
- Every object has a **balance point** or centre of gravity (the point where all of the weight of an object is assumed to act). If the centre of gravity of any object is directly over the point where it is sitting then the object should be **balanced**.
- Some toys need **electricity** to make them work. These kinds of toys get electricity either from a battery or from plugging them into an electrical socket in the wall. Batteries store something we call “**energy**” inside them. All objects (including us) need energy if they are to move. Electricity is said to flow around **electrical circuits** – but it can only flow if there are no breaks in the circuit.
- **Elastic materials** can be stretched to store energy, which we then use to make toys move. Also, **springs** can be squeezed to store energy to move toys. The more that you stretch or squeeze the material the more energy you will store in it and the further or faster the toy will travel.

Further information explaining the demonstrations and concepts used in the show, with some suggested follow-up activities, can be found in the support notes for this show at www.think-differently.co.uk