

The Energy Show



**Information for KS2 teachers
and group leaders**

What will the show involve?

The Energy Show is an exciting 30 minute science show bringing to life just how amazing energy is. Through explosive experiments and hands-on science demos your pupils will learn that energy is everywhere and can never be created or destroyed, only changed. Perfect for enquiring minds this show covers a range of the science curriculum including energy, forces, electricity and magnets.

Please note that the show may contain elements of the curriculum not yet covered by some pupils but nonetheless will still provide an interesting and informative experience for the children.

Is there anything I need to do to prepare the children before the visit?

The show is a very gentle introduction to the topic of energy and types of energy. Although it's not necessary for the children to have any prior knowledge of the subject, it covers a range of the science curriculum including energy, forces, electricity and magnets. All of these concepts are explained as part of the show using demonstrations and experiments as examples.

Risk assessment

- Please visit our website education.eureka.org.uk/resources to download both the general museum risk assessment and the one for your chosen session.
- We advise you to make a preview visit to carry out your own risk assessment for the overall visit.

Evaluation

Eureka! constantly aims to improve its programmes for school groups and feedback from adults and children is an essential part of this. We value all comments made and will always try our best to act upon them. You will be sent a link to an online survey following your visit and we'd be extremely grateful if you could complete and return as soon as possible after your visit.

Additional resources & information

The following pages contain various supporting resources and information related to the science show.

Please find the following documents in this pack:

- **National Curriculum links** – *showing how the workshop fits in with the national curriculum for science at KS2*
- **Teacher's assessment chart** - *this outlines the aims and objectives of the show, including the key activities which children will be taking part in and their learning outcomes.*

The Energy Show: KS2 Primary Science National Curriculum links

Year	Programme of study	Links to:
3	Forces and magnets	<ul style="list-style-type: none"> • Notice that some forces need contact between two objects, but magnetic forces can act at a distance
4	Sound	<ul style="list-style-type: none"> • Identify how sounds are made, associating some of them with something vibrating • Recognise that vibrations from sounds travel through a medium to the ear
5	Forces	<ul style="list-style-type: none"> • Explain that unsupported objects fall towards the Earth because of the force of gravity between the Earth and the falling object • Identify the effects of air resistance, water resistance and friction, that act between moving surfaces

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Teacher assessment chart

Aims and objectives – by the end of this workshop children should have learned:

- That energy cannot be made or destroyed it can only be changed from one type to another.
- The two main types of energy are movement and stored energy.
- The main types of movement energy you see around you are movement, sound, heat, light, electric and magnetic energy
- The main types of stored energy you see around you are chemical, elastic and gravity energy.
- Friction can make it look like energy has been 'lost', when it's actually been turned into heat.

Overview: Through a series of interactive activities, powerpoint presentation and discussion, this show offers fantastic insight and learnings into energy and energy changes	
Activities	Learning Outcomes
Introduction to the session, to what energy is and the golden rules of energy.	<i>Energy is a property objects have that lets them do things like move. Energy can't be created or destroyed, only changed, and the more something weighs, the more energy it takes for it to do something.</i>
<i>Movement Energy:</i> Introduce the types of movement energy, with throwing balls, noisemaker and energy stick	<i>The main types of movement energy are movement, heat, light, sound, electric and magnetic.</i>
<i>Stored Energy:</i> Introduce the types of stored energy, with a chocolate bar (demo only), dropping balls, elastic band plane and popsicle stick explosion.	<i>The main types of stored energy are chemical, gravity and elastic.</i>
<i>Simple Energy Changes:</i> Look at simple energy changes by banging steel balls together to make heat energy, use a Newton's cradle and magnets and create a fireball.	<i>You can change one type of energy to another quite simply. You can go from movement to movement energy and stored to movement energy.</i>
<i>Harder Energy Changes:</i> More complicated ways of energy changing, using fireballs and a basketball and tennis ball bouncing together	<i>There are more complicated ways of energy changing from one type to another, but they still obey the golden rule.</i>
<i>Friction:</i> Look at what friction is and how you can feel it rubbing your hands together. See how powerful it can be with a tug of war as well.	<i>Energy isn't lost in friction, it changes to heat energy. Lots of little bits of energy can add up to a lot of energy, especially when it comes to friction.</i>