

The Energy Show



Information for KS2 teachers
and group leaders

What will the show involve?

The Energy Show is an exciting 45 minute interactive science show all about energy. The children will have opportunity to explore what energy is, the different types of energy and how energy can change from one type to another. There will be balls bouncing,

The show is presented by our expert Enablers and will provide opportunities for children to get involved with the show whether it be as volunteers for a particular demonstration or as whole audience participation.

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.

Workshop synopsis.

This show brings 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. Pupils will find out how energy moves through their bodies to complete an electrical circuit and see a chemical reaction explode on their hand! We'll also introduce friction as a form of energy loss, complete with a giant friction tug of war.

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

This 45 minute session 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.

Evaluation

Eureka! constantly aims to improve its programmes for school groups and feedback from adults and children is an essential part of this. We try and capture as much feedback as possible from teachers and children to guide our future programmes.

Teachers will be given a questionnaire at the end of the workshop and we'd appreciate it if you could fill this in on the day and hand to a member of staff.

After your visit we will send out a questionnaire for the children to complete (preferably within 1 week of the visit). Copies of both forms are included in this pack.

Additional resources & information

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

Please find the following documents in this pack:

- **National Curriculum links** – *showing how the workshop fits in with the national curriculum for science.*
- **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.*
- **Evaluation forms** – *from for the lead teacher and children to complete.*
- **Risk assessment** - *for the workshop. We advise you to make a preview visit to carry out your own risk assessment for the overall visit.*

The Energy Show: KS2 Workshop

Learning Outcomes

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.</i> <i>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.</i> <i>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 coloured 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.</i> <i>Lots of little bits of energy can add up to a lot of energy, especially when it comes to friction.</i>
<i>Quick Energy Change:</i> See what happens with a quick energy change by making a fireball in a hand.	<i>Quick energy changes can be very spectacular!</i>

Teacher questionnaire

We would like to find out what you thought of The Energy Show. Please complete this form and return it to a member of staff. Thank you for your assistance.

What is the name of your school?		
What is the postcode or road name of your school?		
What year group did you bring today?		
Approximately how many pupils did you bring today?		
Approximately how many of these are on pupil premium?		

1. How would you rate the following aspects of the day? (Please tick)

	Very good	Good	Average	Poor	Very Poor
The knowledge of the staff running the show					
Accessibility of the science content					
Venue for the show					
Overall, how would you rate the show					

2. What did you particularly like about today's activities?

3. Do you have any comments or suggestions that you'd like to share with us?

4. Are there any topics you would like to see covered in future Eureka! workshops/shows?

Please turn over —————>

5. Do you feel that the day was good value for money? (Please circle your response)

Yes

No

Not Sure

5b. Please explain your answer

6. How did you hear about the event (please tick all that apply)

- ☐ Received leaflet/email direct from Eureka!
- ☐ Word-of-mouth recommendation from colleague
- ☐ Eureka! website or social media
- ☐ Other {please specify}

7. Measuring impact – for teachers

Please read the following statements and tick the option which most applies to you.

	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree
Impact on my pupils					
I feel this visit inspired my pupils					
My pupils learned something new about science					
I feel my pupils will be more confident about science than before they came					
Eureka! is a good place to learn about science in a different way to school					
I feel my pupils will be more interested in science than before they came					
About me					
I discovered something new during my visit					
The visit made me feel more positive towards science					
I would recommend a visit to other teachers					

Thank you for taking the time to complete this form and if you have any other comments about the day overall, please use the space below.

Please return completed forms to jenny.goodall@eureka.org.uk or alternatively post to:
Jenny Goodall, Play & Learning Officer, Eureka! The National Children's Museum, Discovery Road, Halifax, HX1 2NE