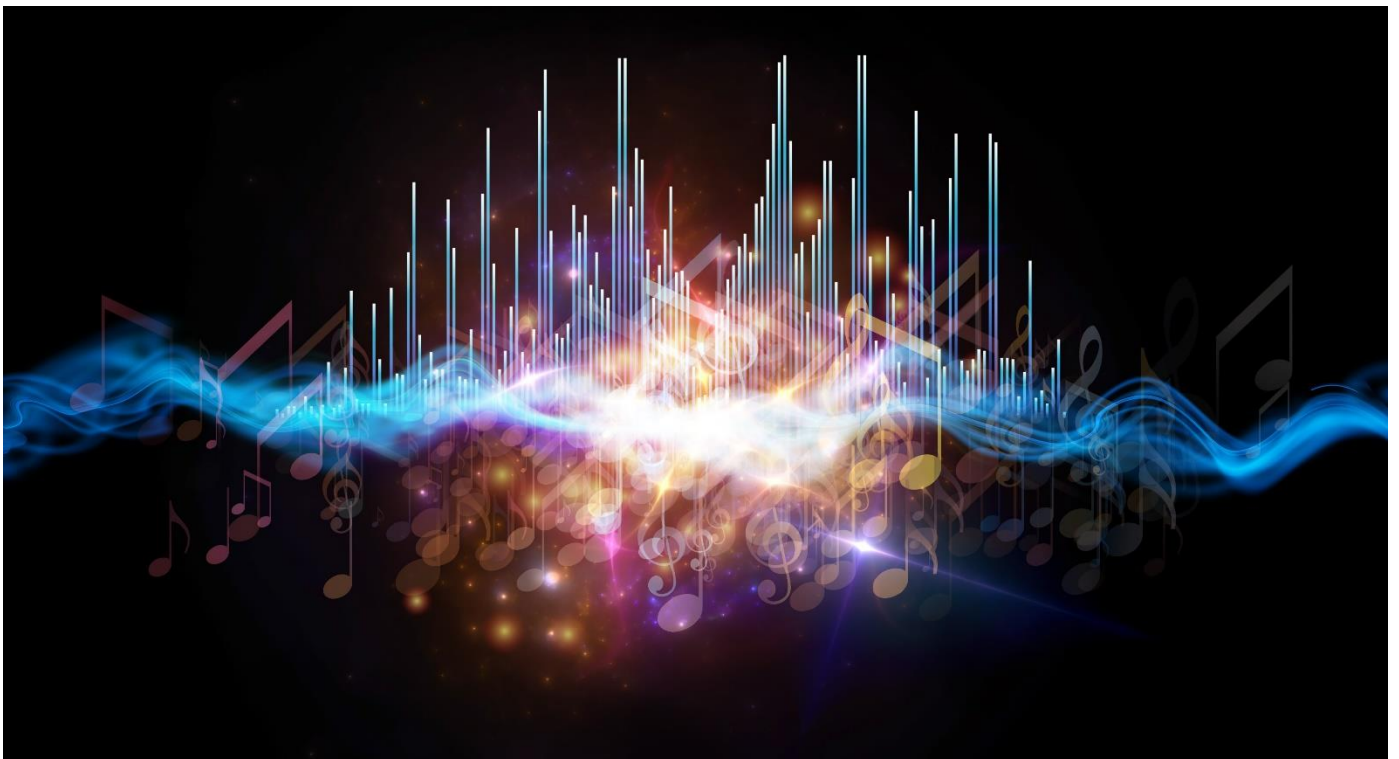




Light & Sound Show



**Information for teachers
and group leaders**

What will the show involve?

Dive into a 30-minute adventure of discovery as we explore the magic of light, the mysteries of sound and their amazing effects all around us. Fun, interactive and curriculum-linked, get ready to **see**, **hear** and **discover** science! Containing a mix of presenter led and volunteer demonstrations as well as full audience participation this is a fun way of introducing the topic or consolidating knowledge for KS2 groups.

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

Not particularly. It can be helpful if children have been doing something about this topic at school but not essential.

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.

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 show fits in with the national curriculum for science.*
- **Teacher's assessment chart** - *this outlines the aims and objectives of the show and their learning outcomes.*

Light & Sound: KS2 Science Show

Primary Science National Curriculum links

Year	Programme of study	Links to:
3	Light	<ul style="list-style-type: none"> recognise that they need light in order to see things and that dark is the absence of light notice that light is reflected from surfaces recognise that light from the sun can be dangerous and that there are ways to protect their eyes recognise that shadows are formed when the light from a light source is blocked by an opaque object find patterns in the way that the size of shadows change.
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. Find patterns between the pitch of a sound and features of the object that produced it. Find patterns between the volume of a sound and the strength of the vibrations that produced it. Recognise that sounds get fainter as the distance from the sound source increases.
6	Light	<ul style="list-style-type: none"> recognise that light appears to travel in straight lines use the idea that light travels in straight lines to explain that objects are seen because they give out or reflect light into the eye explain that we see things because light travels from light sources to our eyes or from light sources to objects and then to our eyes use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them.

Light & Sound Show Learning Outcomes

Aims and objectives – by the end of this science show children should...

- Be able to recognise different sources of light & understand that it is dangerous to look directly at the sun.
- Have learnt that light is a source of energy that travels in straight lines.
- Have learnt about refraction and reflection.
- Know why shadows occur and why they change size.
- That sound is a type of energy caused by vibrations.
- That sound travels through a medium in sound waves to our ears.
- Have learnt about volume and understand that the bigger the vibration, the louder the sound.
- Understand how the pitch of a sound changes depending on how fast or slow the vibrations are.
- That scale is a group of notes arranged in order of pitch.

Overview: Through a series of interactive activities, powerpoint presentation and discussion, children will learn about light and sound.

Section of the show	Learning Outcomes
What is light?	<i>Recognising the different sources of light; that direct sunlight can be harmful to our eyes.</i>
How does light travel? <i>Activity – volunteers try to guide light using mirrors</i>	<i>That light travels in straight lines; that it is reflected off surfaces and objects and that's how we see them; that smooth shiny surfaces like a mirror are best for reflecting light.</i>
<i>Refraction: Demo – presenter shows how light bends when it moves from air to water</i>	<i>That when light bends as it moves from through one medium to another, this is called refraction.</i>
<i>Shadows: Activity - volunteers experiment with creating shadows</i>	<i>To recognise that shadows are formed when the light from a light source is blocked by an opaque object; to find patterns in the way that the size of shadows change.</i>
<i>What is sound? Demo – presenter uses a ping pong ball & tuning fork to show vibrations</i>	<i>That sound is a type of energy caused when something vibrates.</i>
How do we hear sound?	<i>That sound travels through a medium in sound waves to our ears.</i>
<i>Volume: Demo - we use a gong to show how the size of the vibration determines if a sound is loud or quiet.</i>	<i>That the size of the vibrations links to volume. The bigger the vibration = the louder the sound.</i>
<i>Pitch: Activity - can the class put the handbells in order of pitch from low to high?</i>	<i>That pitch is how high or low a sound is and is linked to how fast or slow the vibrations are; that scale is a group of notes arranged in order of pitch.</i>
<i>Finale: Demo – to link light and sound together by creating visual sound waves on the screen</i>	<i>Light helps us see and travels in straight lines; sound is made by vibrations and travels as waves; and when we combine them, we can create amazing patterns!</i>