Test Kitchen: Everyday Materials Science Show

This show is generously supported by The Granada Foundation

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Information for teachers and group leaders

What will the show involve?

Test Kitchen: Everyday Materials is entertaining 30-minute show where children will discover the properties of different materials through a series of interactive demonstrations. It is led by a member of our team and will require some student volunteers to bring to life some of the demonstrations.

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

Not particularly. We link all demonstrations to familiar things so even if the topics haven't been covered, the children will be able to relate to the content. Let us know if there are particular vocabulary or materials that are struggling with in your classroom and we'll see if we can emphasise these more in the show.

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.

Show Content and Objectives

Test Kitchen: Everyday Materials Learning Outcomes

Aims and objectives – by the end of this science show,

Students will have learned:

- The words we use to describe materials are called its properties.
- Objects might look the same but be made from different materials.
- Some materials conduct heat.
- Some materials are absorbent and some are waterproof.
- Scientists choose materials depending on the job they need to do.
- Scientists have come up with new materials to solve everyday problems.

Students will:

- Think creatively about the materials they encounter in their everyday lives.
- Feel inspired to look differently at the world around them.

Overview

Through a series of interactive activities, powerpoint presentation, and discussion, children will learn about a selection of everyday materials, how some materials are better than others in cooking and cleaning, and how scientists help make our lives easier with innovative product design.

Activities	Learning Outcomes
Introduction to a selection of objects and what they're made from.	To get everyone warmed up and gauge existing knowledge. Objects can be made from different materials.

Materials include wood, glass, plastic, fabric, ceramic, paper, cardboard, metal.	The words we use to describe materials are called its properties.
Heat conduction demonstrations. Add hot water to cups made from different materials and see if we can feel heat through the bottom. Volunteers will be asked to describe what they feel. Heat 2 pans made from different materials (metal and ceramic) on a hot plate to see which one pops corn the quickest.	Some materials conduct heat well and these are often used in cooking such as metal pans. Others don't conduct heat as well and we can use these for jobs where we don't want to burn our hands such as wooden spoons.
Strength demonstration. Using bags of similar size and shape but different materials, we will load each bag with a similar weight and see what happens to the bag. The paper bag will rip, whereas the fabric bag will remain strong. We will see the flexibility of the fabric bag compared to the rigidity of the paper bag.	Materials can be strong in different ways.
Absorbency and waterproofing demonstration. We will use a paper towel to mop up a water spill and talk about what we see. We will then use a water gun to shoot water at different materials to see what happens. Volunteers will hold the materials. The water will soak through	Fabrics like cotton are great at absorbing liquids so are great for things like towels that don't need to absorb lots of water. If they absorb too much water they become very wet and can't absorb any more! Plastic is often used to make waterproof materials. Waterproof

the paper towel, be absorbed by the tea towel, and bounce off the plastic. We will talk about why absorbent and waterproof materials are useful and where we might see them.	means it doesn't absorb water but repels it, keep the object dry.
Summary and reflection	Scientists have to think about the intended use of an object to determine what material is best.

Sensory considerations

Sense	Items
Smell	Hot oil, popcorn
Sound	Audience and Enabler shouting, tapping the spoons on the surface, music sound effects, sizzling oil, weights falling to the floor, rain ponchos rustling.
Touch	Heated cups, holding a weight (bottle), water spray. Note that if a pupil is selected for the absorbency demonstration they will likely get wet. Rain ponchos will be provided.
Sight	No low lights needed, bright light from projection screen, popcorn popping
Taste	None