BBC LEARNING PRESENTS

Science: Get Scientific Live Lesson

Date: Thursday, 17th November 2016
Time: 11:00am
Duration: 50 minutes (approx.)
Location: bbc.co.uk/livelessons
*(**Note:** if you can't watch the webcast live, you will be able to watch the recording on the Live Lessons website)*

Setup

How much space and equipment is needed?

The lesson can be screened in a classroom with a large screen linked to a reliable broadband connection. Good audio equipment is not essential but will make the event more enjoyable.

As we'll be asking students to get involved in activities throughout the lesson, it would be beneficial if students had the space to move around – especially if you want to replicate the sweet circuit model with your class.

How many students can participate?

It's completely up to you how many students you have participating in the session. We want to get as many students as possible engaged in this Live Lesson. Space might be a consideration if you have a very large group.

How to prepare for the lesson

In this Live Lesson, we'll be looking at how to think like a scientist. We'll be introducing pupils to scientific principles such as scientific inquiry and investigation, using the topic of electricity. During the lesson we will be exploring the following activities.

Circuits and symbols

In the first section of the Live Lesson, we will look at the different electrical symbols used in a simple series circuit and construct a circuit using a battery, switch, bulb and buzzer. Students will then be asked to choose the correct circuit to light a bulb using **Activity sheet 1: Circuits and symbols.**

Conductors and insulators

In the second section of the Live Lesson, we'll be looking at the conductivity of different materials and asking pupils to classify some everyday objects into groups of conductors and insulators. Students will be provided with a list of objects and asked to place them in a Venn diagram as shown on **Activity sheet 2: Conductors and insulators.**

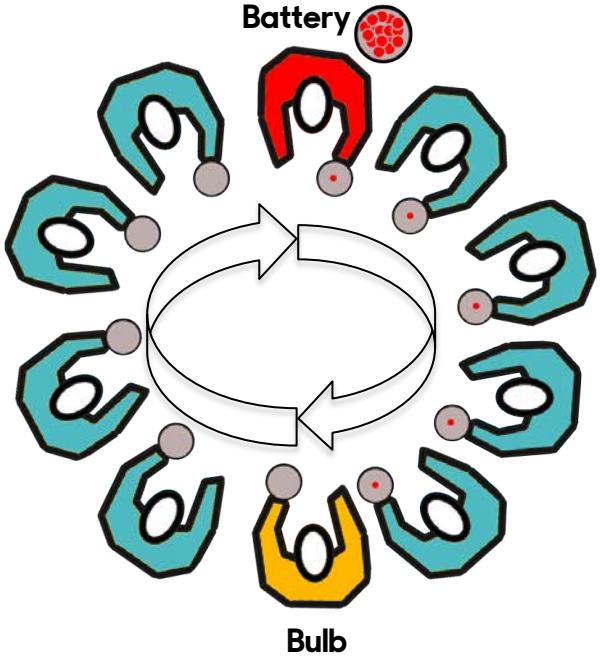
During this part of the programme, we also ask pupils to think of other objects that are insulators and conductors. Send in your pupils' suggestions to live.lessons@bbc.co.uk or by using the hashtag **#bbclivelessons** for the chance to be highlighted on the programme.

The sweet circuit model

During this part of the programme we will be demonstrating how electricity moves around a circuit by using models. In one of the models pupils will be asked to stand in a circle, passing cups/sweets to demonstrate the flow of electrons around a complete circuit. You may wish to replicate this activity in your classrooms during the lesson.

You will need some plastic cups and some sweets. Everyone stands in a circle as shown below. Each person holds a plastic cup. Nominate one pupil as the bulb and another pupil as the battery. The battery has a bowl of sweets beside them.

Each person passes their cup to the person on their left. The 'battery' places a sweet into each cup that is passed to them, before passing it on. As each cup passes the 'bulb', they take the sweet out and place it on a tray beside them.



The battery (person with bowl of sweets) is a chemical energy store and the electric current (the flow of plastic cups) is a carrier of that energy. After that energy gets to the bulb, the heated filament becomes a *thermal* energy store and the light that is radiated becomes the energy carrier.

Prior to the lesson, you can download all activity sheets for the Live Lesson from our website: **bbc.co.uk/livelessons**

Contact us

You can email any questions or comments before and during the Live Lesson to live.lessons@bbc.co.uk, or by using the hashtag **#bbclivelessons**. We'll aim to answer as many of your questions as possible.

We'd also love to see examples of your students' work. If your classes have created any work or carried out any activities using the resources on our website, please do send it in to live.lessons@bbc.co.uk, and they could be showcased on the programme and on our website.

If you let us know if your school is planning to tune in on the day, your school name could also be featured on the programme.

Thank you for your interest in the Get Scientific Live Lesson, and we hope you'll join us at 11am on 17th November.

Curriculum links

Key Stage 2/2nd Level - Science

As part of the lesson, students will be encouraged to:

- Develop skills for scientific inquiry and investigation by asking questions and using practical techniques
- Report on their findings
- Recognise electrical symbols
- Identify a complete series circuit, including the naming of components
- Understand the effect of changing variables within an electrical circuit
- Classify a range of objects into groups of insulators and conductors