

Live Lessons

Doctor Who, Space, Light, and Super Movers – Live Lesson

Date: Friday, 23rd November 2018

Time: 2pm

Duration: 40 minutes (approx.)

Location: bbc.com/livelessons

(Note: if you can't watch the programme live, you will be able to watch the recording on the Live Lessons website within half an hour of the live broadcast via BBC iPlayer)



Curriculum links

Key Stage 2 Science (2nd Level in Scotland)

Earth and Space

- Observe and research the features of our Solar System, Earth, Moon and Sun, and demonstrate understanding of size, scale, time and relative motion within it.
- Understand that a moon is a celestial body that orbits a planet.
- Recognise the Sun is a star at the centre of our Solar System and that it has eight planets: Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus and Neptune.

Light

- Investigate the science behind how light travels and how this can be used.
- Demonstrate through practical investigation that light travels in straight lines, exploring light sources, reflection and shadows.
- Explain that we see things because light travels from light sources to our eyes or from light sources to objects and then to our eye.

Setup

How much space and equipment is needed?

The lesson can take place 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.

We'll be encouraging students to participate in simple physical activities during the lesson, so your class may enjoy it more if they have space to move around. We advise you to prepare your classroom by pushing tables and chairs to the side. Don't worry if you can't do this as Super Movers videos are designed for active learning behind desks with very little disruption to the classroom.

The narrative of this Live Lesson takes place in space. You may wish to encourage your class's imagination by closing a few blinds or curtains to set the scene.

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.

How to prepare for the lesson

Before the Live Lesson begins

For Section 1, prior to the start of the Live Lesson, please allocate nine of your pupils one of the following roles: Sun, Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus, and Neptune. One pupil or member of staff will need to be a mystery planet. The remaining children in your class will be moons. For Section 2, divide your class into threes. Each group will need two beanbags or small balls.

Prior to the Live Lesson, it may be worth reminding all pupils the definitions of transparent, translucent and opaque objects as these definitions form the starting point for Section 2. Similarly, whilst we shall explain reflection within Section 3, a refresher may be useful for pupils, especially with regards to how a periscope works.

Section 1: The Solar System, Earth and Sun

In Section 1, we will discover what constitutes a Solar System and look closely at how our Solar System functions. In particular, we'll consider the importance of the Sun within our Solar System. As we work alongside the Doctor to solve an interplanetary, scientific investigation, we shall explore the eight planets in our Solar System and physically demonstrate their orbits.

Section 2: Light and materials

Encouraged by the Doctor, we will explore the properties of light and understand how we see light. We'll actively investigate transparent, translucent and opaque objects and learn how they impact the direction of light.

We'd like all teachers to send in suggestions from their class for weird, wonderful and out of this world objects that are opaque, translucent or transparent. This can be done before or during the Live Lesson. Please see our guidelines below for further information for how to get in touch.

Section 3: Reflection

Building upon learning points from Section 2, we shall explore how reflective surfaces can change the direction of light. Using this knowledge, we'll actively work together to help the Doctor solve our galactic dilemma.

Contact us

Let us know you're taking part!

If you're planning on taking part the Live Lesson, let us know. Email us with your school name and it could be featured in the Live Lesson.

Participate in our Doctor Who mission

As the Live Lesson unfolds, we'll ask all schools to actively participate to help the Doctor with our space investigation. We'll also be asking to see your class's Super Moves so make sure you send them in. A 'Super Move' is a basic dance move, celebration or exercise technique that children or adults can make up themselves. It's simple, fun and easy to copy.'

Ask our expert

If you'd like to ask our expert, Dr Kevin Fong a question, you can email us before and during the Live Lesson at live.lessons@bbc.co.uk, or get in touch by using the hashtag **#bbclivelessons**. We'll aim to answer as many of your questions as possible.

If you are sending in any images or videos that feature children, please ensure that you have parental permission, as they may feature in the Live Lesson and on our website. Please be aware that the BBC may ask you to demonstrate that you have received verifiable parental consent.

In the email, please confirm your official relationship to the child/children featured, e.g. teacher, Brownie group leader, sports coach etc. and confirm that you have sought prior parental consent.

Please also ensure the material is not sensitive or controversial. Read our Terms and Conditions for more information

Following the lesson

Visit bbc.com/livelessons from Tuesday 27th November onward for top tips from our panel of specialists. This film will include advice, discussions and science teaching resources developed especially for teachers.