



BBC LEARNING PRESENTS

Terrific Scientific Exercise - Live Lesson

Date: Thursday 14th September

Time: 2:00pm

Duration: 30 minutes (approx.) + 30 minutes follow up Live Lessons EXTRA programme (this will be published on the website within the week)

Location: bbc.co.uk/livelessons

(Note: if you can't watch live, you will be able to watch the recording on the Live Lessons website)

Curriculum links include:

Science

England KS2: Knowledge to be gained in **Years 3-4 (ages 7-8)** - identify that humans and some other animals have skeletons and muscles for support, protection and movement
Years 5-6 (ages 9-11) recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function

Scotland: Knowledge to be gained from **First Level (up to age 8)** - I am aware of my growing body and I am learning the correct names for its different parts and how they work. By researching, I can describe the position and function of the skeleton and major organs of the human body and discuss what I need to do to keep them healthy. I recognise that we have similarities and differences but are all unique.

Second Level (ages 8-12)

By investigating some body systems and potential problems which they may develop, I can make informed decisions to help me to maintain my health and wellbeing.

Wales KS2: the names, positions, functions and relative sizes of a human's main organs / the need for a variety of foods and exercise for human good health.

Northern Ireland: Where the major organs are located in the body. Humans have skeletons to protect major organs, support their bodies and help them move.

Health and Wellbeing

Scotland I understand how what I eat, how active I am and how decisions I make about my behaviour and relationships affect my physical and mental wellbeing. I am developing my understanding of the human body and can use this knowledge to maintain and improve my wellbeing and health.

Wales - understand the features and physical and emotional benefits of a healthy lifestyle, e.g. food and fitness.

Northern Ireland - understanding the benefits of a healthy lifestyle, including physical activity, healthy eating, rest and hygiene / recognising what shapes positive mental health.

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.

Some of the activities involve writing so sitting at their tables in a classroom would be helpful or something to lean on to write. Your students will also require copies of the following activity sheets for the live programme:

- **Live Lesson: Activity Sheet 1** – What happens to your body when you exercise?
- **Live Lesson: Activity Sheet 2** – Match the activity to the heart rate
- **Live Lesson: Activity Sheet 3** – How do different sports impact the body?

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 the Live Lesson. Space might be a consideration if you have a very large group.

How to prepare for the Live Lesson

Before the lesson

This Live Lesson is part of BBC Terrific Scientific – a primary science campaign from the BBC. The lesson is themed around Investigation 6 of the campaign: Exercise.

To find out more about Investigation 6 and access a collection of teaching resources, visit the BBC Terrific Scientific website at bbc.co.uk/terrificscientific

Send in any photos of your class planning – or doing – their Exercise Investigation to live.lessons@bbc.co.uk, and they could be featured on the live programme.

Please note: *If you are sending in any images or videos that feature children, please ensure that you have parental permission, as they may be shown during the Live Lesson and on our website. 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.*

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 our Live Lesson, and we hope you'll join us on 14th September.

Introduction to Exercise

Early in the Live Lesson, we'll be asking students to put their existing knowledge to the test by identifying the physical impact exercise has on the human body.

- You can find this activity on **Live Lesson: Activity Sheet 1 – What happens to your body when you exercise?**, on our website. They will be given a short time to do this in, so it might benefit them to have the activity sheets on hand and ready to go, or to carry out the activity before the lesson.

Our expert guest will reveal the answers during the Live Lesson.

Impact of Exercise on the Brain

In the Live Lesson, we'll be putting our presenters to the test and seeing if exercise has an impact on their reaction times.

Email your students' answers to live.lessons@bbc.co.uk or use the hashtag **#bbclivelessons**, and they could be featured on the Live Lesson.

Impact of Exercise on the Heart

In this section of the Live Lesson, we'll be exploring the impact exercise has on our heart.

We'll be conducting an experiment using an ECG machine to investigate how exercise affects our heart rate.

During the Live Lesson, students will be asked to think about the impact different activities have on heart rate, and write down their answers on **Live Lesson: Activity Sheet 2 – Match the activity to the heart rate.**

Impact of Exercise on the Lungs

In this part we look at how the lungs take in oxygen from the air we breathe and carry it in the blood to the rest of the body.

We will be doing an investigation into lung capacity and will measure the amount of air we can fit into our lungs by blowing into balloons. If you have balloons in your classroom you can join in with this demonstration.

Warning: *You are not obliged to take part in this if you do not feel comfortable doing so. It is important to remember that when we breathe we don't always completely fill and empty our lungs.*

Impact of Sport on the Body

In the final section of the Live Lesson, we'll be investigating the impact different sports have on the human body.

As part of this, we'll be asking students to match different sports with the impact they have on the human body in **Live Lesson: Activity Sheet 3 – How do different sports impact the body?**

Email your students' answers to live.lessons@bbc.co.uk or use the hashtag **#bbclivelessons**, and they could be featured on the Live Lesson.

Live Q&A session

The Live Lesson will end with a live question and answer session with our expert guests.

If your students would like to pose any questions about exercise and the body to the experts, you can send them in to live.lessons@bbc.co.uk or use the hashtag **#bbclivelessons** before and during the live programme. We will try and answer as many as we can during the show.

Live Lessons EXTRA

We will be featuring a follow up programme called **Live Lessons EXTRA**.

This will not be broadcast live but will be published on our website bbc.co.uk/livelessons a day or two after the live broadcast, and will build on the outcomes of the live programme.

Muscles

In the first part of the Live Lesson EXTRA programme, we'll be looking into the impact exercise has on our muscles.

We'll be seeing how our muscles work in pairs and how we have both voluntary and involuntary muscles.

Elastic bands will be used to demonstrate the importance of warming up muscles before exercise. If you have elastic bands in your classroom you can join in with this demonstration.

Warning: *Please make sure when stretching elastic bands to stay facing forward and do not point the elastic band in the direction of anyone.*

Students will be also asked to think about a variety of muscles and circle on Activity Sheet 1 whether these muscles are voluntary or involuntary on **Live Lesson EXTRA: Activity Sheet 1 – Muscles and their function.**

Skeleton

In the second part of the programme, we'll explore the role our skeleton plays when we exercise.

We will be looking at the four main functions of the skeleton and students will be asked to think about the role our skeleton plays in different activities on **Live Lesson EXTRA: Activity Sheet 2 – Functions of the skeleton.**

The children will be asked to move their arms about in various exercises during this lesson. Please make sure there is enough room for them to stretch their arms around them.

Joints

In the final part of the programme, we explore how we move – by looking at the role of our joints.

Through demonstrations and simulations, we'll be seeing how our joints help us to move and the role they play in different exercise.

Students will be challenged to identify whether our presenter is using a ball and socket or hinge joint for various exercises they are carrying out.