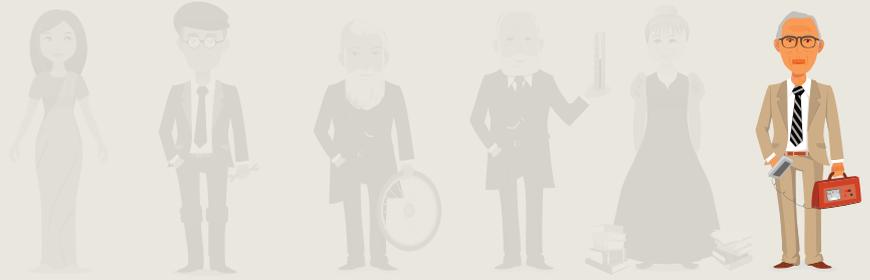




Lesson Activities

Professor Pantridge



Lesson Activities

The Father of Emergency Medicine

Read the Professor Pantridge section of the 'Our Innovators: An Ulster-Scots Legacy' website with the children. Professor Pantridge was known as 'The Father of Emergency Medicine' because his innovative invention of the portable defibrillator saved so many lives.

Recap on the different ways in which a person can be innovative (as covered in the introductory lesson) which include:

- taking on challenges normally seen as impossible;
- an ability to see connections between things;
- being able to look at things in a different way; or
- finding new ways to do things.

In his invention of the portable defibrillator, Professor Pantridge was innovative in several ways. Ask the children to describe in what way his ideas were innovative. For example: Did he see things in a new way? Did he take on a seemingly impossible challenge?

Either give the children a copy of Resource 1 or complete one copy together by viewing it on an interactive whiteboard. Consider why Professor Pantridge was innovative for doing the following:

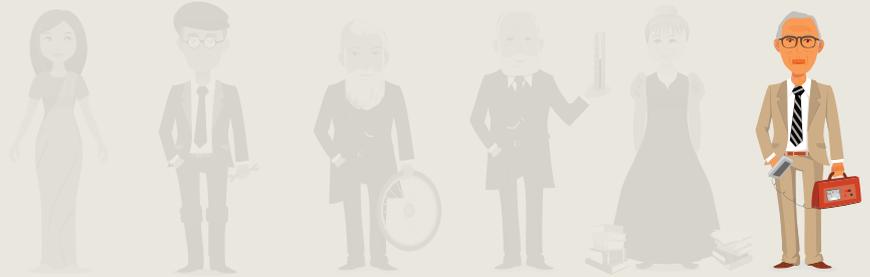
- He realised that it was no good having the defibrillators just in a hospital because research showed that most heart attacks happened suddenly and therefore not in hospital.
- In 1965 he produced the first portable defibrillator.
- He installed the portable defibrillator in an ambulance.
- He created a safety mechanism for the portable defibrillator so that no one would receive the electric shock by accident.

Add information about Professor Pantridge to the KWL grid.



Lesson Activities

Professor Pantridge



The Circulatory System

Introduce a simple version of the circulatory system to the children. This will include simple facts such as:

- The heart and the blood vessels are called the circulatory system because blood circulates through the body.
- The heart is a muscle. It is the important pump that makes the circulatory system work.
- Arteries take blood that doesn't have much oxygen in it away from the heart.
- Veins take blood that does have oxygen in it back to the heart.

You may wish to use a suitable website to show the children a simple model of the circulatory system. BBC Bitesize has one such animation which can be found in the KS2 Science section.

In small groups, the children will now create a simple life-size drawing of the circulatory system in the human body. For each group, you will need:

- large sheets of paper (or several sheets stuck together), which are big enough for a child to lie down on;
- markers or colouring pencils (black, red and blue);
- one copy of Resources 2 and 3;
- scissors; and
- glue.

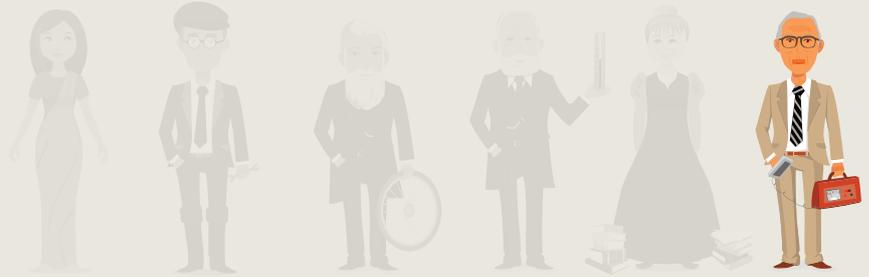
This activity provides a good opportunity to focus on 'Working with Others' from the Thinking Skills & Personal Capabilities framework. You may wish to use a resource such as the Job Role Cards or the Working with Others cards from Set 2 of the Thinking Cards, available in the [CCEA Think Pack](#).

First, ask one child from each group to lie down on the floor, on top of the paper, with their arms and legs slightly apart. Another child in their group should draw around them with a marker. They now have a human outline.



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Next, the children should cut out and colour the lungs (red) and heart (red and blue as indicated) images from Resource 2 and 3. Clarify with the children that our hearts are not really red and blue, but that they are colouring it like that, to demonstrate where the oxygenated and deoxygenated blood leaves and enters the heart.

Now the groups should stick the lungs and heart into position on the human outline they have drawn.

Finally, ask the children to draw one blue artery going away from the heart and one red vein going back to the heart.

As a recap on what they have learned, revisit the KWL grid and add more information and questions where applicable.

The Importance of Exercise for a Healthy Heart

Talk to the children about the importance of exercise and that regular exercise is needed to get fit and stay healthy. You can find a short video on '[The Importance of Fitness](#)' at BBC Bitesize. Explain to them that you don't have to always go to a gym or play a team sport to get fit – playing in the playground with friends can count as fitness too! Give each child a copy of Resource 4, My Exercise Log. Over the next week, they should record what exercise they do and for how long, aiming to do at least 60 minutes of exercise each day. Remind them that if they ever feel dizzy or too hot, they should stop and have a rest and remember to always drink enough water!

Pulse!

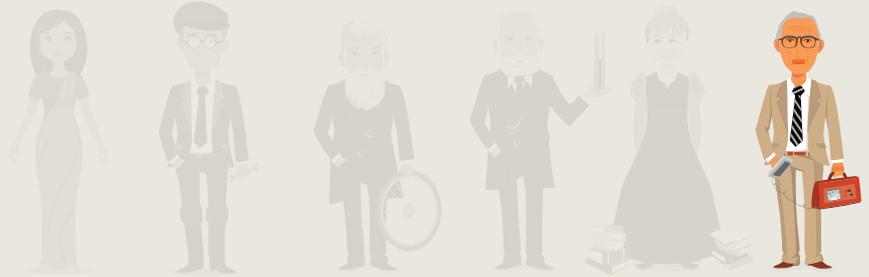
Explain to the children that, on average, the heart pumps blood around the body at the following rates:

- Baby: 80 to 160 beats per minute
- Children 5 to 6 years old: 75 to 115 beats per minute
- Children 7 to 9 years old: 70 to 110 beats per minute
- Children 10 years and older, and adults: 60 to 100 beats per minute
- Well-trained athletes: 40 to 60 beats per minute



Lesson Activities

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During exercise, we need to get more oxygen to every part of our body, so the heart has to work harder to pump oxygenated blood. As the heart is a muscle, the hearts of very fit people don't have to work as hard. We can measure our heart rate by feeling our pulse.

Before a PE lesson, get the children to take their resting pulse rate. They should sit quietly and, using their first two fingers, press gently on their wrist until they feel their pulse. Tell the children when to start and time 1 minute (or 30 seconds and then get them to double the result). Ask them to count (not aloud) how many beats they feel. Get them to record this figure on a small whiteboard or in a book.

Get the children to take the book/whiteboard on which they recorded their resting pulse rate with them to a PE lesson. During the lesson, ask them to stop and repeat the same measurement. They should record this result. Carry on with the PE lesson and at the end, ask the children to repeat this measurement again.

Back in the classroom, use the data that the children have collected to do one, or some, of the following:

Task 1

Using graph or cm squared paper, ask each child to create a graph where the axis shows the following:

x axis:

- resting heart rate,
- during exercise
- after exercise

y axis:

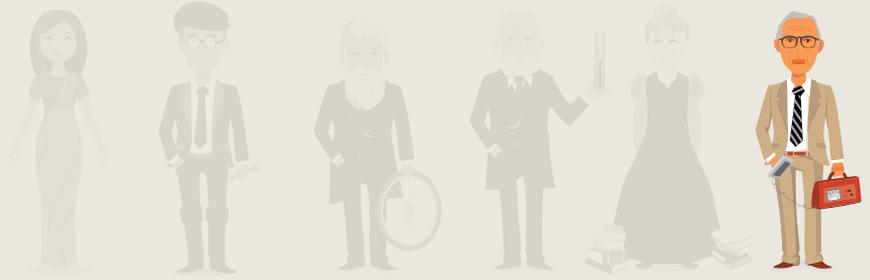
- intervals of 10, starting at 0 to just above their highest measurement

Alternatively, the children could use an ICT package such as Numberbox to create a graph.



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Task 2

Record a class list of each of the three measurements taken. Get the children to work out the average pulse rate for each measurement: resting; during exercise; after exercise. They should create a graph using either paper or an ICT tool to show these measurements.

Ask the children to analyse the findings, answering questions such as:

- How many people had an 'above average' pulse rate?
- How many people had a 'below average' pulse rate?
- By how much was the 'resting' rate lower than the 'during exercise' rate?
- Why is the average for the 'during exercise' higher than the average for the 'resting' rate?

Connected Learning Opportunities

The World Around Us (Science)

Learn where the major organs in the body are and what their primary purpose is.

Language and Literacy (Talking and Listening)

Describe and talk about the life, work and achievements of Professor F. Pantridge.

Using ICT

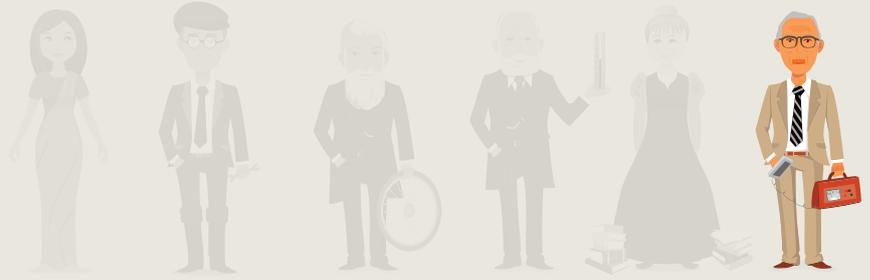
Create a multimedia presentation on the Innovations of Professor Pantridge.

Make a short advertisement for an exercise class which details the benefits of exercise.



Lesson Plan

Professor Pantridge



What's Next?

