

HEALTH WARRIORS



TEACHER BOOKLET



Module 4 : Health Heroes Lesson Plans



University of
Southampton

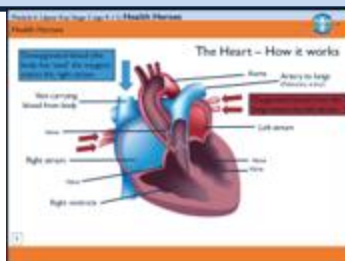
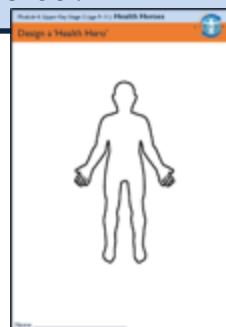


University Hospital
Southampton
NHS Foundation Trust

Health Heroes

Module Overview

In this module, pupils learn about the human circulatory system through a series of cross-curricular, hands-on, enquiry based sessions. Following this, they begin to think about all the factors that contribute to overall health, and what might influence our health behaviours. Pupils become, 'Health Heroes'; leading campaigns on health issues within their school.



Curriculum and Assessment

Coverage and Opportunities

All Early LifeLab activities are designed to be rich and cross-curricular and hands-on wherever possible. The content of the activities in this module is centered around the health-related objectives within the Key Stage 2 programme of study for science:

- Identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood
- Recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function
- Describe the ways in which nutrients and water are transported within animals, including humans

Implementing recommendations from the Education Endowment Foundation – Improving Primary Science Guidance Report. Link to full report [here](#) or scan the QR code. ➡



Developing pupils' scientific vocabulary – laminated keyword bank provided along with an extensive glossary at the end of the PowerPoint to be used by teachers and students as necessary.

- **Relate Learning to relevant, real world contexts** – This module allows students to think about sleep, nutrition and exercise in relation to their own lives, to explore the reasons behind living healthily and to plan a Health Campaign to apply their knowledge to their school community.
- **Guide pupils to work scientifically** - We focus on science enquiry and working scientifically. Detailed assessment criteria for the elements of working scientifically covered by this module are included in the overview document and assessment spread sheet.
- Our central themes are **identifying and classifying, comparative tests, research, observation and pattern seeking**.

Session Resources

All resources provided in the Flightcase unless specified

Health Heroes Work books

1. Blood

Scientist Profiles
Lab coats
Safety goggles
Hoop cereal
Marshmallows
Red and yellow food dye
Pom poms
Measuring cylinders: 50ml, 100ml, 250ml
500ml jugs
Stirring rods
Images of blood
Air dough
Acrylic paints, sketching pencils, pastels
A4 and A3 card
Making Blood Instructions

2. The Circulatory System

Virtuali-tee shirts
I-pads
I-pad chargers
Virtuali-tee Instructions
Trug buckets
Ping pong balls
Frisbees
Rubber floor arrows
Crawl tunnels
Hoops and hoop stands
Circulatory System diagram
Circulatory System labels

3. The Heart

Pulse Oximeters
Pulse Oximeter Instructions
Cardiovascular Examination instructions
Stethoscopes

5. Health Heroes: Diet

Nutritionist Profiles
Nutritionist for a day Eatwell Guidelines

7. Sleep

Bedtime habits work sheets
Sleep Diaries

4. Health Heroes

Masking tape
Agree/Disagree Signs
Health Warrior Promise Cards
Health Warrior Promise banner

6. Health Heroes: Exercise

UK CMO Physical Activity guidelines
CMO Physical Activity infographic

Welcome to the Health Warrior Team!

Evaluation sheets
Bookmarks and stickers
Certificates

I. Blood

Please begin the module by watching 'Meet the Health Warriors' video- links to all videos can be found in the PowerPoint accessed on lifelabonline.org.

Introduction

Pose the question, 'What is blood for?'. Record all ideas (including any misconceptions) in a list or mind map (on PowerPoint) that can be saved. Also record any questions pupils have about blood.

Watch 'Healthy Hearts' video.

Explain that some scientists from the local hospital are supporting the school with this part of learning in science, by sharing their work. Some scientists research and diagnose diseases that require a **microscope** to be seen. They are therefore the experts when it comes to looking at what blood is made of! Look at the profile of the scientist and discuss their role.

Main

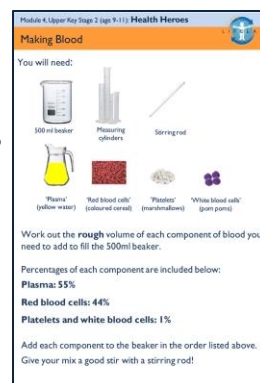
Look at the images of blood on the PowerPoint. Work together to work out which cell is which from the written description.

Ask the children how they feel when they look at the images? You could discuss scale, advances in modern technology and general awe and wonder.

1. Making blood!

In pairs students follow the instruction sheet provided to make their own blood, using numeracy skills to accurately calculate the volumes of each blood component they require.

All components are provided, but you will need to make up the jugs of 'plasma' by adding a few drops of yellow food colouring to the water. The cereal will need to be mixed with red food colouring and a bit of water before use.



2. Challenge students to create a piece of artwork on small canvases or with air dry clay, that showcases each component of blood. Copies of the images are provided for careful study.

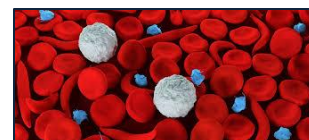
Art and Design : Pupils should be taught to improve their mastery of art and design techniques, including drawing, painting and sculpture with a range of materials



Plenary

When it goes wrong...

Show pupils the image of Sick Cell disease. What do they notice? What problems might this cause? *People with sickle cell disease produce unusually shaped red blood cells that can cause problems because they do not live as long as healthy blood cells and can block blood vessels. Sometimes, people with sickle cell disease can develop anaemia (where red blood cells cannot carry enough oxygen around the body), which can cause tiredness and shortness of breath.*



Return to the mind map of ideas. Is there anything we need to add or correct?

2.The Circulatory System

Introduction

The next few sessions will focus on the **circulatory system**. Use the AR t-shirts to explore the circulatory system in groups.



Virtual Tee Fill in the Gaps

The _____ is a muscle that pumps blood through _____ around your body to deliver _____ and nutrients to your organs and tissues.

Blood then returns to the heart with the oxygen and nutrients used up.

The heart pumps deoxygenated blood to the _____ where new oxygen can be delivered to red blood cells.

Vessels called _____ take the blood away from the heart.

Vessels called _____ take the blood back to the heart.

heart veins
lungs oxygen
blood vessels arteries



Challenge pupils to use the app to fill in the gaps on the worksheet provided.

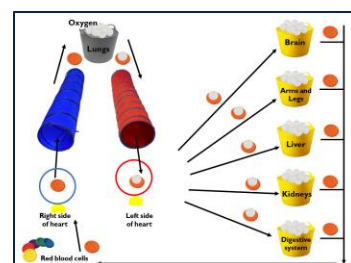
Main

Watch the BBC video here: <https://www.bbc.co.uk/bitesize/topics/zv9qhyc/articles/zn6f382>

You will need to move to a large space to create a human model of the circulatory system. All equipment is provided. (enough for 2 groups to run at a time)

Explain that the heart is a pump which keeps the blood moving around the body all the time. Every part of the body requires oxygen, nutrients and water and these are delivered by the circulatory system.

This model focuses on how the heart moves oxygen around the body.



Pupils act as red blood cells. They collect a red blood cell (frisbee) and move through the right side of the heart (remember the 'person' is facing us, so their left is our right!). They move through the heart and are squeezed through the artery and into the lungs. At the lungs, pupils can collect oxygen (balls) that has been breathed in from the air, and stick it to their blood cell. The blood is now *oxygenated*. They travel back to the left side of heart through the pulmonary vein.

The oxygenated blood is now ready to be delivered to all the different parts of the body. After the oxygen has been delivered, the (now *deoxygenated*) blood returns back to the right side of the heart and the cycle begins again.

Plenary

When it goes wrong... What could happen if an artery got blocked?

Watch the British Heart Foundation video, here:

<https://www.youtube.com/watch?v=y6QJceOAVY0#action=share>

Ask pupils if they have heard about heart attacks and strokes?

A heart attack happens when one of the arteries that carries blood to the heart muscle itself gets blocked.

This causes your heart muscle to be starved of blood and oxygen. It causes pain and may stop the heart from working properly. Doctors can give medicine or do an operation to try and unblock the artery.

A stroke happens when the blood flow to part of your brain is cut off because an artery to the brain is blocked. This can cause your brain cells to become damaged or die. It can stop your arms or legs from working, make your face droopy and affect speech.

If you think someone is having a heart attack or a stroke, you should always call 999.

There are choices we can make to keep our hearts and circulatory systems healthy, and these will be explored in the next sessions!

3.The Heart

Introduction

Work through the slides on the PowerPoint to look at how blood moves through the heart. Note that this is the **cardiac cycle** and occurs every time your heart beats. Key anatomical names are in bold.

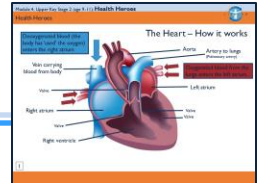
Demonstrate the Pumping Heart model.

This simple clip can help with visualisation of the process:

<https://www.bbc.co.uk/bitesize/topics/zy9qhyc/articles/zk9qmfr#:~:text=Your%20heart%20first%20pumps%20blood,the%20blood%20a%20second%20push.>

A 3D animation of the heart is available here:

<https://sketchfab.com/3d-models/the-human-heart-anatomical-cross-section-53b90d7856004bd7ac935c14966bb169>



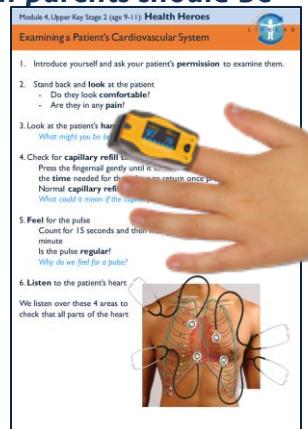
Main

Discuss the meaning of the term 'heart rate'. What does it mean? What affects heart rate? How do you know?

A key point here is that our heart beats faster when we exercise. This allows more oxygen to be delivered to areas of the body using it up as they work harder. (Remember that one cardiac cycle is one heart beat)

Introduce pupils to the pulse oximeters and demonstrate how they work (see instruction sheet). *N.B. You can briefly talk about the oxygen saturation figure that is displayed alongside heart rate. Oxygen saturation is a measure of how much oxygen the red blood cells in your blood are carrying. It is expressed as a percentage, and would normally be 95-100%, even during vigorous exercise. **Readings are unlikely to be accurate in this situation, but if a pupil has a consistently low reading, then parents should be informed so that they can seek advice from their GP.***

Invite pupils to work in threes to come up with an interesting question about heart rate they could investigate using the fingertip monitors. Use the provided planning proforma (or your own school version) to plan and structure investigations.



Examples include:

How does laughing affect your heart rate?

Which raises heart rate more - star jumps or running?

If possible, try to allow children to be adventurous in their question choice!

Plenary

Examining the circulatory system

How do health professionals (doctors, nurses etc.) check how well the circulatory system is working? Pupils take it in turns to be the 'Doctor' and the 'Patient' and follow the instruction cards to complete their 'examination' - they might want to wear the white coats and Use the stethoscopes!

Pupils should be able to answer the prompt questions on the sheet, using their knowledge from the previous few sessions.

Heart Rate Investigation (1)

What is your question?

What do you think will happen?

What will you measure?

How will you collect your data?

How many people need to be involved?

Heart Rate Investigation (2)

What variable is changing?

Equipment list

Summary of findings (include a graph if you like to do so)

Extra Learning: The British Heart Foundation provide a free interactive tool for teaching CPR in school. <https://www.bhf.org.uk/how-you-can-help/how-to-save-a-life/cpr-training-in-schools>

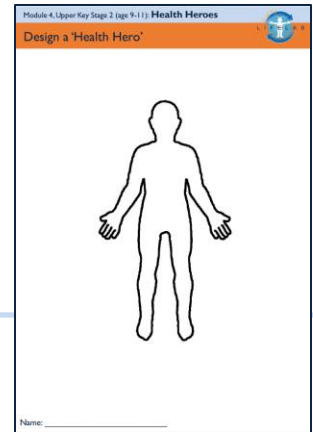
4. Health Heroes

Introduction

What does it mean to be healthy? What would your health hero do?

Ask pupils to design and label a 'Health Hero'. Remind them to consider all aspects of health.

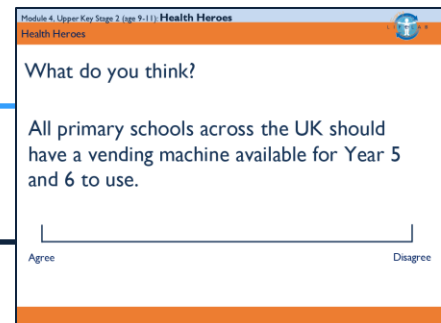
e.g. A health hero takes care of their body by doing exercise that makes them feel good.



Main

Before you start this activity – remind pupils that everyone is entitled to have an opinion, and that it is important to listen to everyone's point of view. However, it is not acceptable to be unkind or disrespectful. It is also worth noting that opinions can change.

Mark out an Agree/Disagree line across your classroom using the signs and masking tape provided. Read out each of the statements in the PPT, and ask pupils to place themselves on the line, depending on how strongly they agree or disagree with the statement.



Plenary

Making a 'Health Promise'

Look back at your health heroes. Is there anything about your own health behaviours that you would like to change?

Watch 'Health Warrior Promise' video.

Encourage pupils to write a short, measurable and realistic 'promise' on a Promise card to improve their health,- add to a class display. Use Healthy Conversation skills to encourage a strong, achievable promise. (see final page of plan for more details)



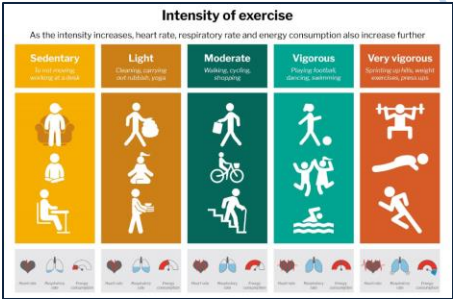
Remember to revisit the class promise display, does anyone need to update or edit their promise?



6. Health Heroes: Exercise

Introduction

How do you feel about exercise?
How much exercise is recommended for a young person your age?
What types of exercise do you do? Make a class list, categorising activities according to the intensity chart.



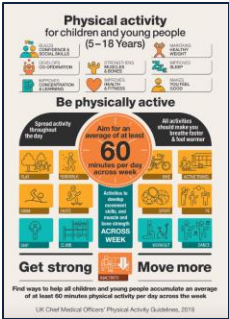
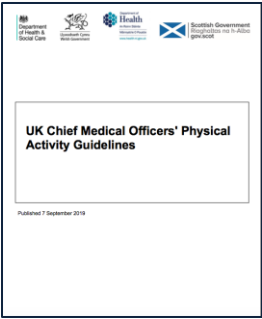
How do you know if that exercise is effective? (Talk about increased respiratory rate, increased heart rate, sweating etc.)

Main Comprehension Exercise

Read the sections for young people aged 5-18 in the most recent UK Chief Medical Officers' Physical Activity Guidelines. Use bullet points to make a list of the most important points. A proforma is provided.(cutdown version of guidelines for pupils is provided, you can find the full version at https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/832868/uk-chief-medical-officers-physical-activity-guidelines.pdf

Communicating Scientific Findings

Look at the infographic produced by Public Health England. This is a summary of the document pupils read earlier in the lesson.
How many of the points did you include in your summary?
Which type of information do you prefer?
What are the advantages and disadvantages of each approach?



Plenary

Revisit the class promises, does anyone need to update or edit their promise?
Ask pupils whether any of them made a promise related to physical activity that they would be willing to talk about. How is it going? What might they change after this lesson?

7. Sleep

Introduction

Watch '**Power Off**' video and begin a discussion about bedtime routines. In small groups list helpful/unhelpful bedtime habits (A3 worksheet).

Share ideas as a class and discuss. Does everyone agree? Why do you think different activities work/don't work? What currently works/doesn't work for you?

Tell children that they are going to investigate different bedtime activities to help them to create a bedtime routine that will work for them. Emphasise that nobody gets it right all of the time and they shouldn't feel bad for doing the 'wrong' thing sometimes. Routine means something you do in the same way regularly i.e. most of the time.

*It would be a good idea to let parents know about this activity and ask for their support!

Main

Hand out sleep diaries and ask children to choose 4 activities from the lists they made that they can investigate - 2 'helpful' and 2 'unhelpful'. Make sure that chosen activities can be done without too much family disruption! Also try to make sure that a wide range of different activities are covered so that children can report back. You may prefer to stick to the positive activities which is also fine. Children should write a different activity onto each page and be given at least a week to complete their task.

Discuss the importance of trying to keep as many things as possible in their routine the same, only changing the one activity they are focusing on that night. (Fair Test)

Make sure the children understand the questions and check during the week that they are managing to complete the task.

Plenary

Children to bring their sleep diaries to class and discuss what they found out- answer questions in groups then share with the whole class:

When did you have your longest sleep and what was your change that night?

When did you have your shortest sleep and what was the change that night?

Does everyone have the same results?

Why do some people always sleep longer/shorter than others?

Are there any other factors you noticed? (activities you enjoyed/effect on others in your home)

Whole class record- ppt slide... create a 'perfect' sleep routine.

Different things work for different people/lifestyles- ask children to draw out a routine that they think will work for them. Again, emphasise that they may not manage the routine every night, just most nights.



PSHE Curriculum Links:

Healthy lifestyles (physical wellbeing):

H2. about the elements of a balanced, healthy lifestyle

H3. about choices that support a healthy lifestyle, and recognise what might influence these

H4. how to recognise that habits can have both positive and negative effects on a healthy lifestyle

H8. about how sleep contributes to a healthy lifestyle; routines that support good quality sleep; the effects of lack of sleep on the body, feelings, behaviour and ability to learn

8. Health Heroes: The Campaign (I)

Introduction

Start by watching 'Time to Act'.

Revisit the beliefs axis and your promises, as well as work from the previous two sessions.

What are the main health issues faced by you and your classmates? How do they affect you?

Make a list of the main issues together.

Look at the Better Health campaigns already used in schools (<https://www.nhs.uk/better-health/>), as well as the selection within the PowerPoint. What do pupils think? How do they feel when they see this kind of material?

Main

Split children into pairs or groups.

Challenge pupils to become Health Heroes in their school, by launching a health campaign. Things to think about:

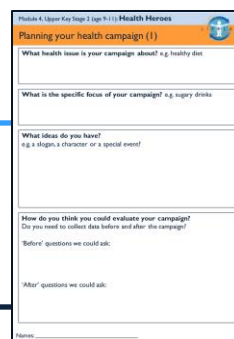
- We cannot force people to change their behaviours.
- Giving information on its own doesn't usually help people to make long term changes. We have to support them to want to make changes for themselves.

With these things in mind, pupils should choose an area of health to focus their campaign on. Decide on a launch date and allow pupils planning time. Campaigns could include any of the following:

- Posters
- Leaflets
- Videos
- Challenges
- Taste testing

Ask pupils how they will evaluate the success of their campaign. If possible, they may want to collect some simple survey data before and after the campaign.

A planning proforma is included in your pack.



Module 4, Upper Key Stage 2 (age 9-11): Health Heroes

Planning your health campaign (I)

What health issue is your campaign about? e.g. healthy diet:

What is the specific focus of your campaign? e.g. sugary drinks:

What ideas do you have?
e.g. a display, a challenge or a special event?

How do you think you could evaluate your campaign?
(Do you need to collect data before and after the campaign?)

Before questions we could ask:

After questions we could ask:

Name: _____

Plenary

Come together as a class and ask each group to present the main theme and ideas around their campaign. Ask other pupils to provide feedback, responding to the questions:

How would you feel if you saw this campaign?

What would appeal to you about their ideas?

What might put you off?

Remember to revisit the class promises, does anyone need to update or edit their promise?

9. Health Heroes: The Campaign (2)

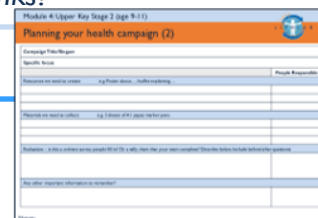
Introduction

Ask pupils to revisit their campaign plans and edit these based on feedback or further thoughts.

Groups should spend some time designing their evaluation (there is space for this in the proforma), which is likely to take the form of a simple survey. An example is:

Before question: *How many sugary drinks do you drink each week?*

After question: *How has this campaign affected what you think about sugary drinks?*



Main

Pupils will need plenty of time to create the resources for their campaign.

You may choose to run all the campaigns at one time, as an event (this could be an opportunity to involve parents) or alternatively allow campaigns to run more infrequently but over the course of a few weeks.

Ensure there is time to complete surveys and collect any other evaluation data. Some pupils will be able to tally and tabulate responses, some may be able to create graphs.

Plenary

Spend time together discussing how the campaigns went and looking at evaluation data.

What went well? What didn't go so well? What would you change?

How did you feel about running the campaign? What difference do you think you can make?

Closing the Project

Remind pupils of the variety of enquiry-based learning they have taken on over the course of this project (you could look back through the PowerPoint). Praise pupils for taking this learning one step further, by using it to support the health of their peers.

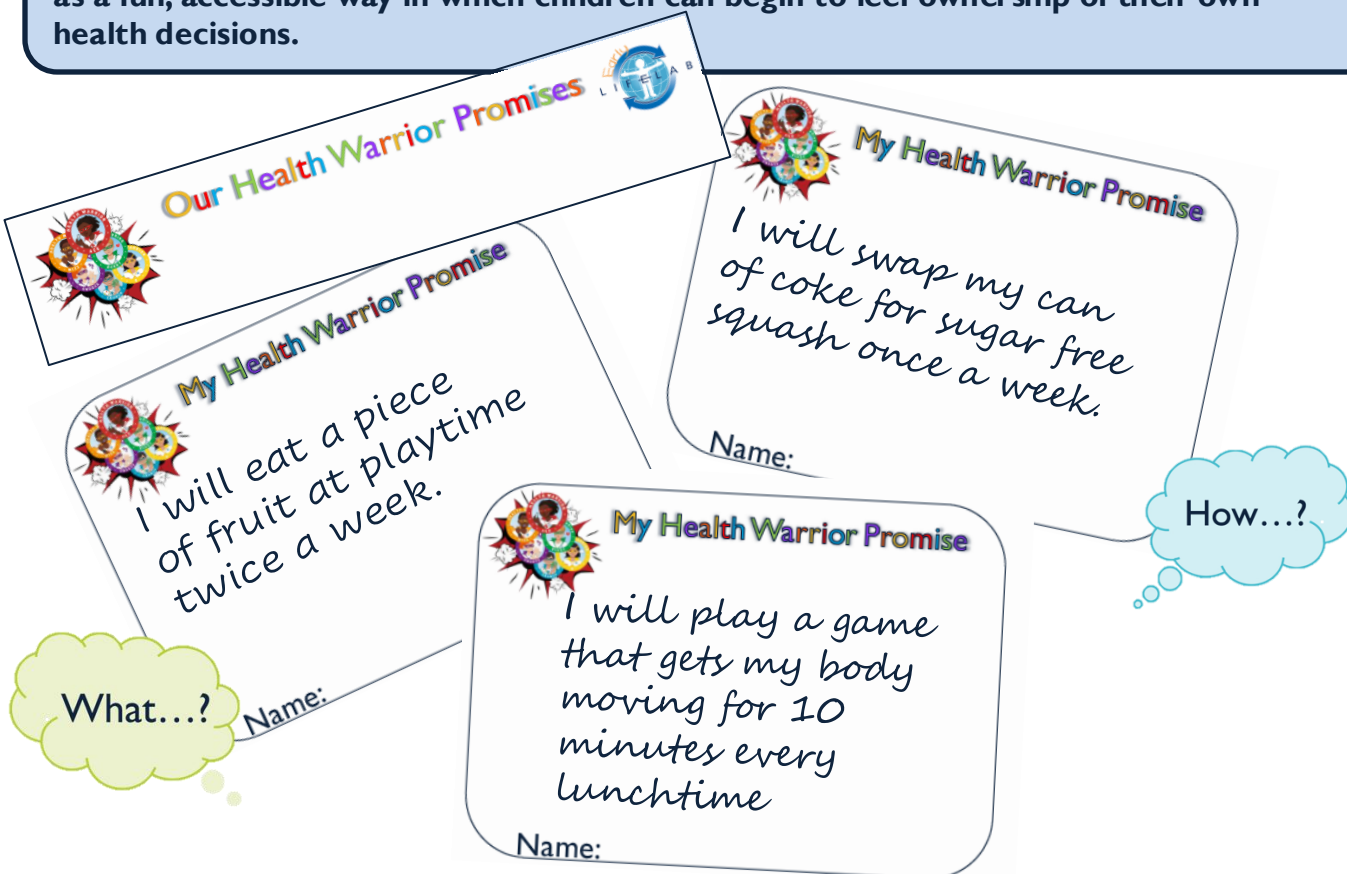
You may wish to display the following quote:

"Never doubt that a small group of thoughtful, committed citizens can change the world. Indeed, it is the only thing that ever has." - Margaret Mead

Remember to revisit the class promises one final time. Spend some time reflecting on this, asking 'What has gone well?', 'What would be your next step?'.

Healthy Conversation Skills

A Class Promise display enables the implementation of the Healthy Conversation Skills training that all staff involved in the module should receive. They have been designed as a fun, accessible way in which children can begin to feel ownership of their own health decisions.



Early LifeLab aims to empower children to make healthy choices. We recognise that children need plenty of support to make these choices.

The premise of identifying one's own solutions informs the underlying philosophy of 'Healthy Conversation Skills', an approach to supporting change utilising a range of behaviour change techniques known to be effective in promoting and maintaining lifestyle changes. We have adapted Healthy Conversations Skills for children, and all teaching staff involved in the Early LifeLab project receive training.

In this way, small realistic steps towards change can be planned and reviewed by children, alongside a teacher.

You may wish to start with a 'Class Promise' e.g. *We will all do some movement that gets our heart beating faster at playtime*, but some children may feel able to make an individual promise. The training will support you to guide children through making and reviewing their promises, ensuring that they are regularly followed up.

Welcome to the Health Warrior Team!

Introduction

- Watch **You are Health Warriors** video

As a class, recap what the children learned during this module.

What was their favourite activity? Why?

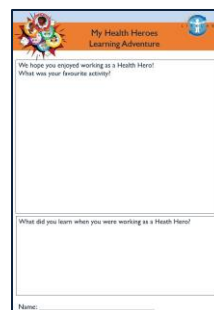
What did they learn? Did anything they found out surprise them?

Main

Children complete Health Warrior Evaluation worksheet or

Google Form “My Health Heroes Learning Adventure”.

Refer back to questions from class discussion.



Plenary

Children complete stickers/statements on their bookmark (if not yet completed) and reflect on their Health Warrior Promise.

How did they get on with their promise?

What was difficult/easy?

Did they have to adapt the promise to make more realistic or achievable?

Children are encouraged to continue to reflect on their Health Warrior Promises and make healthy choices.

We hope your class enjoyed Early LifeLab Health Heroes Module! We appreciate any feedback about the resources – **please fill out a short feedback form here** [Teacher feedback form](#) or scan this QR code



Vaping Information

Currently Early LifeLab have not produced resources for Primary Schools to address the risks of Vaping, however our Secondary School resources are available, and we have put together links to support teachers in this area. Please click [here](#) or use the QR code to access.



