



## Wider Curriculum Unit Plan for Home learning

**Subject:** Science

**Unit:** Circulatory System

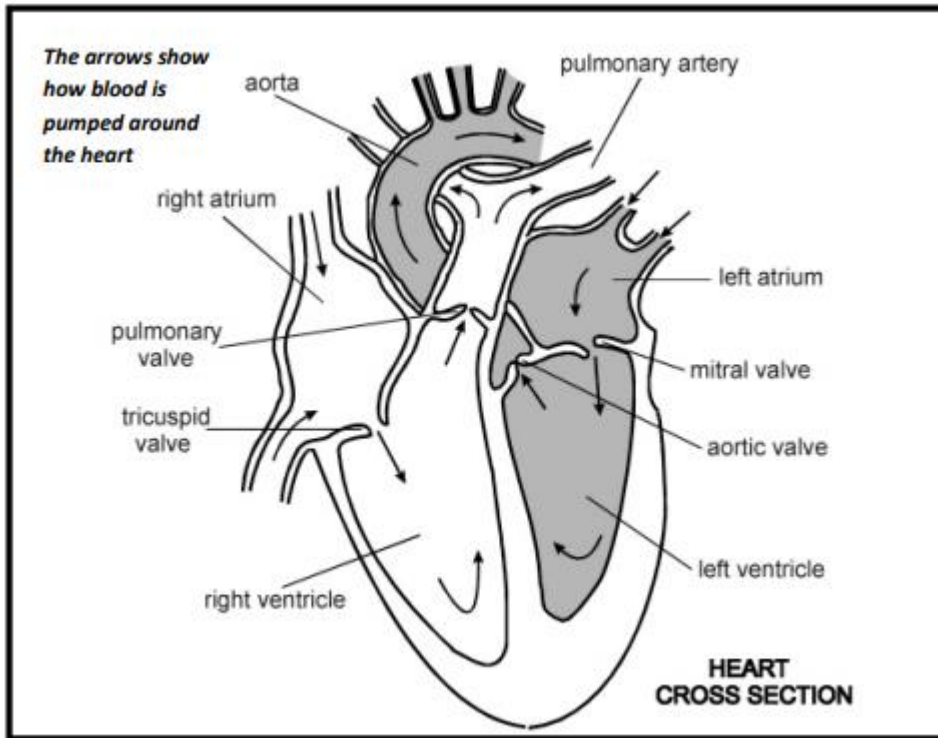
**Year:** 6

Session	Lesson task
Week 1 Session 1	<p><b>What is the function of the heart?</b></p> <ul style="list-style-type: none"> <li>• Write down at least 3 things:               <ul style="list-style-type: none"> <li>○ You already know about the heart</li> <li>○ You would like to know about the heart (questions, what you're not sure about)</li> </ul> </li> <li>• Place your hand over your chest. What can you feel? Now jog on the spot for 30 seconds and do the same again. What did you notice?</li> <li>• The heart is part of the circulatory system. Watch the <a href="#">BBC introduction</a>.</li> <li>• Read the information about the structure of the <a href="#">heart</a>. Pay particular attention to the terminology for the different parts of the heart.</li> <li>• Write a paragraph to explain the function of the heart, using these questions to help you: What does the heart do? Why is it important? What might prevent the heart from working efficiently?</li> </ul>
Week 1 Session 2	<p><b>What does a heart look like?</b></p> <ul style="list-style-type: none"> <li>• Look at the diagram of the heart in the resources. Where does the aorta take the oxygenated blood to? Where does the pulmonary artery take the deoxygenated blood to?</li> <li>• Watch the <a href="#">video</a> on how the heart works and think about why it is such an important organ. What would happen if it stopped working?</li> <li>• Look through the slides where a lamb's heart is dissected. Complete the review questions.</li> </ul>
Week 2 Session 3	<p><b>What does a heart look like?</b></p> <ul style="list-style-type: none"> <li>• Look at the concept cartoon in the session resources. What do you think?</li> <li>• Watch the video, <a href="#">What is in your blood?</a></li> <li>• Follow the <a href="#">video lesson</a> on how oxygen is transported around our bodies. There will be activities for you to complete. Some of these will revise the work on the heart and circulatory system.</li> </ul>
Week 2 Session 4	<p><b>What happens to the rate at which our hearts beat when we perform different exercises?</b> <b>Lesson 1</b></p> <ul style="list-style-type: none"> <li>• Using the diagram in the resources, put the names of the parts of heart that blood visits in order starting from the vena cava: right atrium, left atrium, aorta, right ventricle, left ventricle, pulmonary artery, pulmonary vein.</li> <li>• Look at the line graph (in resources) titled 'heart beats per minute for children on the playground'. What do you think each of these children were doing at playtime? Why?</li> <li>• What is your pulse? Where is your pulse? How might you measure your pulse?</li> <li>• Use the guide in the resources to find your own pulse.</li> <li>• When might pulse rate be used/needed?</li> </ul>
Week 3 Session 5	<p><b>What happens to the rate at which our hearts beat when we perform different exercises?</b> <b>Lesson 2</b></p> <ul style="list-style-type: none"> <li>• Follow the <a href="#">video lesson</a> on what happens to the circulatory system during exercise.</li> <li>• Complete the activities that make up the lesson.</li> </ul>
Week 3 Session 6	<p><b>What happens to the rate at which our hearts beat when we perform different exercises?</b> <b>Lesson 3</b></p> <ul style="list-style-type: none"> <li>• <a href="#">Explore</a> animals' heart facts. What do you notice?</li> </ul>

	<ul style="list-style-type: none"> <li>Thinking back to the investigation you completed in the last lesson, decide on ways that you could extend it (see resources if you need some ideas).</li> <li>Explain what the heart was doing during the exercises, and why it was doing this. Before you start, make a word bank of useful words.</li> </ul>
Week 4 Session 7	<p><b>Why do our bodies need water?</b></p> <ul style="list-style-type: none"> <li>Read the interview transcript in the session resources.</li> <li>Look at the images of the different foods and drinks in the session resources. Which have the highest water content? Are there any that surprise you?</li> <li>Complete the activity sheet 'How hydrated am I?' from the session resources.</li> </ul>
Week 4 Session 8	<p><b>What is the role of the heart in sending oxygen, nutrients and water within the blood around the body?</b></p> <ul style="list-style-type: none"> <li>Read the information <a href="#">here</a> about the circulatory system (only pages 2 and 3 are necessary, but you can look through all 6 pages)</li> <li>Explain/define the following: <ul style="list-style-type: none"> <li>The double circulatory system</li> <li>The three types of blood vessels and their roles</li> <li>How nutrients and water are transported through the body</li> </ul> </li> </ul>
Week 5 Session 9	<p><b>What impact does exercise have on our bodies?</b></p> <ul style="list-style-type: none"> <li>Look at the lifestyle chart in the session resources. Suggest key behaviours for each aspect.</li> <li>Thinking about exercise – how much exercise do you think you should be getting each week? What sort of exercise should it be?</li> <li>Look at the <a href="#">NHS guidance</a> and reflect on what you do each week and where improvements could be made – make a list of your current exercise schedule and how you could improve this.</li> </ul>
Week 5 Session 10	<p><b>What impact does food have on our bodies?</b></p> <ul style="list-style-type: none"> <li>What are the 5 main food groups? Give examples of these.</li> <li>Gather a variety of foods that you have at home. See the list in the session resources for suggestions.</li> <li>Decide on the positive and negative impacts of each food on the human body. Look at the nutritional information in the session resources to help you.</li> <li>Look at the food diary in the session resources. Write a letter to Ben to advise him on how and why he should change his diet.</li> </ul>
Week 6 Session 11	<p><b>What impact do drugs have on our bodies?</b></p> <ul style="list-style-type: none"> <li>Complete the two lessons on <a href="#">medicinal drugs</a> and <a href="#">nicotine and alcohol</a>.</li> </ul>
Week 6 Session 12	<p><b>Why do people with different lifestyles need different diets?</b></p> <ul style="list-style-type: none"> <li>Watch the <a href="#">video</a>.</li> <li>Work through the <a href="#">lesson</a> and complete tasks.</li> </ul>

## Session Resources

### Session 2



### Session 3

If you stand on your head your feet won't get any blood

Your brain will get too much blood

Your heart will need to pump harder

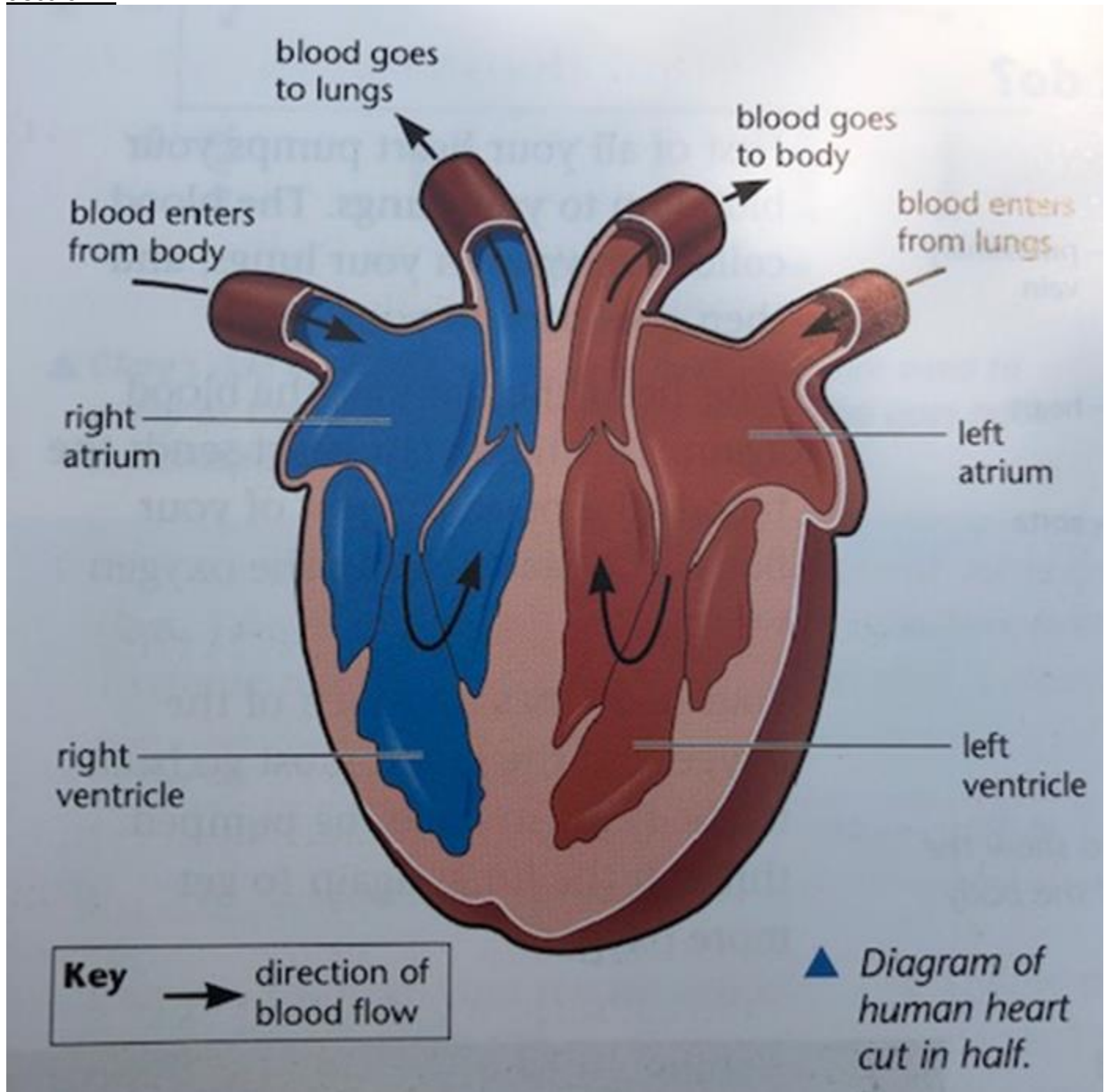
It won't make any difference to your heart or your blood circulation

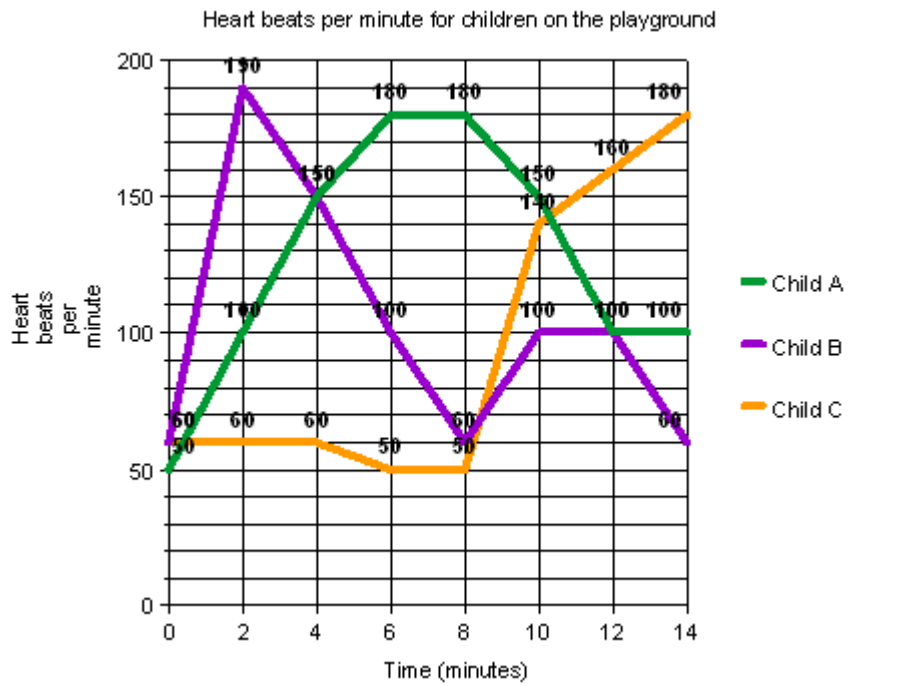
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**6.4 Headstand**

**What do YOU think?**

Session 4





A **pulse** (or **heartbeat**) is a throbbing of blood vessels as blood goes through them. You can feel someone's pulse in their wrist, thumb or neck, where vessels are closer to the skin.

Can you explain this formula?

Let's measure our pulse!

Use this formula:  
 beats per 15 seconds  $\times 4 =$   
 \_\_\_\_\_

### Session 6

To extend the investigation further, you could:

- complete several different exercises – does the exercise make a difference?
- ask people of different ages to complete the investigation – does age make a difference?

## **Session 7**

Interview transcript with Premier League footballers and coaches from:

<https://plprimarystars.com/audio-transcription/hydration-film> (you would need to register to watch this)

Hydration means that everybody in general, needs to drink enough fluids, so that the fluid circulates throughout their body and keeps them feeling well and enables them to do everything they need to do on a daily basis. So, it generally relates to how much water and other fluids that you drink each day to make sure that your body flushes out everything that it needs to.

Water is a significant amount: it makes up an awful lot of your body, and you're continually eliminating it from sweating and being, so you have to replace that, to make sure that you have enough water in your body so that you can think properly, you can breathe properly, and your heart can beat properly.

When you're drinking, you know that you're putting fluid through your body, keeping yourself healthy, and you're staying hydrated, which is the main thing. Just making sure that you're always 100% feeling good.

As a professional football player, you lose a lot of water when you're training and doing a lot of exercise, so it's important you get the water back into your system to help you give you fuel for the game. If you don't have this water in your body, the concentration during training can be lost. It's really important to keep you hydrated because it keeps you feeling well, it enables you do to everything that you need to do to have a successful day, and it keeps you concentrating and feeling active.

So to ensure I stay hydrated, I drink plenty of water throughout the day, after training, during training...I normally try to have, when I wake up, have a bottle of water in the mornings before breakfast, and during breakfast, I try to have a bottle, as well.

I always make sure I have a bottle of water with me. So whenever that's empty, I make sure I get a new one because drinking throughout the day is essential, really, to keep myself focussed on whatever I'm going to be doing.

The difference between drinking water and other drinks, are that water is very simple, water is what you're trying to put into your body so it's absorbed very, very quickly and goes to where it should go very quickly. And another thing is, it's eliminated very quickly as well. There are other things that you can drink which can be very good for you, for instance, milk is very good for you, it's got a lot of protein in, does a lot of good things. Whereas if you drink fizzy drinks, things like that, that can have lots of other effects that you don't want. So it's important to make sure you drink the right things.

Food keeps us hydrated because there are many fruits and vegetables that actually have water in them. So if you think about lettuce, oranges, those types of foods that actually have a lot of liquid in them, which means we can stay hydrated through eating as well as drinking.

The food that we serve here at Southampton is of a wide variety, catered to keeping the players hydrated and the types of food that we're talking in this area is lettuce, watermelon, anything that's going to put those nutrients back into their body.

In terms of emotional well-being, and how hydration makes you feel, you can feel... Your mood might not be as good if you're dehydrated so it can be linked to people feeling unhappy, not as lively as normal, and not being able to concentrate as well. So in terms of doing well at school, and concentrating on everything that you need to do, it's very important to remain well hydrated.









# Activity sheet

## How hydrated am I?

### Instructions:

Make a list of all of the food and drinks you had yesterday.

- Remember to include everything. For example, if you had cereal for breakfast, remember to include the milk you put on it.
- When you have listed all of your food and drink, make a quick decision about each item. Do you think it has LOTS of water in it, or a LITTLE bit of water?
- Put a **green** coloured dot next to something that gave you lots of water, **red** for items that gave you very little water, and **orange** for those 'in between' foods.

Food / Drink	  
Breakfast ..... .....	
Lunch ..... .....	
Dinner ..... .....	
Snacks ..... .....	
One thing I would change to improve my hydration. .....	

## Session 9

Aspect	Suggested daily behaviours
Cleanliness	
Teeth cleaning	
Being active	
Health (injury & illness)	
Screen time	
Sleeping	
Drinking enough water	
Good diet	
Plenty of exercise	
The right combination of exercise	

## Session 10

List of food to look at:

- Fruit (4 apples, 2 bananas, blueberries (or other berries)
- Veg (1 small cabbage, 3 carrots, broccoli, courgette)
- A large chocolate bar
- A packet of cereal bars
- A box of cereal (with sugar) and puffed rice or Weetabix
- Dried fruit
- Packet of nuts (if not allowed nuts in your school then use the images)
- Bottle of fizzy water, a can of 'diet' pop and a can of normal pop

### Nutritional information for 'foods on the table'

Item	Sugar	Fat	Micro nutrients	Teacher discussion notes
Fruit	High	Low	High	Fruit is a healthy snack, but remind chn that it has a lot of fruit sugar (fructose) in it, so eating vast quantities is not as healthy as it may seem. A great snack.
Veg	Low	Low	High	Vegetables have much lower levels of naturally occurring sugar. A great snack.
Chocolate	High	High	Low	The amount of sugar in chocolate varies – very dark chocolate has a much lower amount of sugar and is nutritionally better. However, chocolate is a 'treat' food and should be eaten in moderation.
Cereal bars	High	High	Mid	Cereal bars may seem like a healthy option, but they are in fact very high in sugar and often have a lot of saturated fat (the bad fat!).
Cereal	High	Low	Mid	Lots of cereals (especially those marketed at children) have high levels of sugar. Porridge or cereal without sugar should always be the cereal of choice.
Dried fruit	High	Low	High	Dried fruit is nutritionally good, but has a very high level of fruit sugars and can contribute to tooth decay. A great snack in moderation.
Nuts	Low	High	High	Nuts may be high in fat, but it is the 'good' sort of fat. This is a great snack.
Can of drink	High	Low	Low	These drinks are very high in sugar and should be avoided.
Can of 'sugar free' drink	Low	Low	Low	Although these drinks don't have sugar in them they do have sweeteners like aspartame which some people believe affect our appetite and encourage us to eat more.
Water	Low	Low	Low	A great drink

### Ben's food diary

Meal	Food
Breakfast	Coco pops, milk, banana, fruit juice
Lunch	Cheese sandwich, vegetable crisps, cereal bar, apple
Dinner	Fish fingers, mashed potato, carrots, sweetcorn
Snacks	Salted nuts, flapjack, grapes