

## Year 6 Learning Journey – Week Beginning Monday 13<sup>th</sup> April 2020

This week your focus is to continue to investigate the circulatory system and how it works. You will then carry out a scientific investigation to explore how different exercise affects heart rate. Finally, you will write a scientific report to show your findings.

These tasks are to be spread out across your week – don't rush! Take your time to produce quality work and to remember what you're learning. Do your best to complete the work but don't worry if you don't finish everything, you can always finish at a later date.

**Task 1** – **Watch the video clips about the heart**; you may need to watch them several times. Those of you who were in school during the week before Easter will have watched one of the videos before.

<https://www.bbc.co.uk/teach/class-clips-video/science-ks2-how-our-circulatory-system-keeps-us-alive/zhf76v4>

<https://www.youtube.com/watch?v=-s5iCoCaofc>

<https://www.bbc.co.uk/bitesize/topics/zwdr6yc/articles/zqv4cwx>

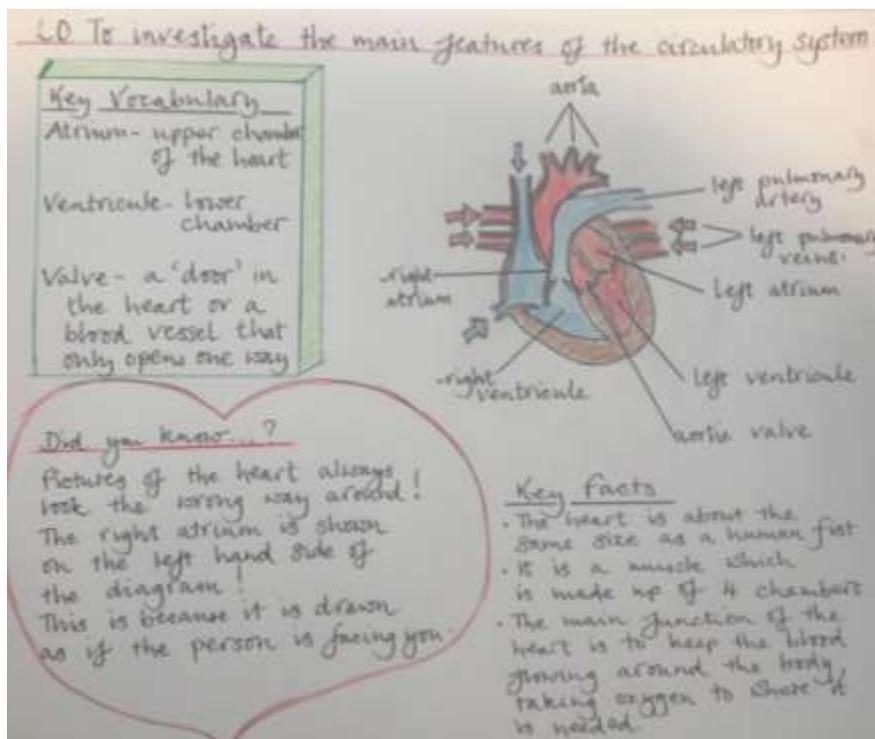
As you watch, make notes about the function of the heart and how it works. You could do this on a scrap piece of paper, perhaps using bullet points or a spider graph or (for those who were in school in the final week) you could use the Cornell note sheet that is in the pack. You may want to make additional notes from one of the texts in the pack. You can also carry out your own research about the circulatory system.

**Task 2** – **Create a journal page** in your black book to record your learning. Use a double page.

You may want to write about the features and functions of the following: the heart, the blood, blood vessels and the lungs.

Here are some tips to help you produce a brilliant journal page:

- 1) Write the LO at the top of the page  
LO To investigate the main features of the circulatory system
- 2) Make sure your handwriting is neat and joined.
- 3) Draw lines using a ruler.
- 4) Add colour.
- 5) Use titles and subheadings to organise your page.
- 6) Use diagrams



**Task 3 – Carry out a scientific investigation and write up your findings in a scientific report.**

LO To investigate how different types of exercise affect heart rate?

*Your final outcome will be a scientific report – all scientists record their methods and findings and these are often published in scientific magazines and journals.*

*Before you start, have a look at the example (called 'Miracle Gro report') in your pack. It shows the key features that you will need to include.*

*Look at the last page of these instructions too, to give you some more ideas for how to successfully write a scientific report.*

You are going to investigate how different types of exercise affect heart rate. You will need to do several different types of exercise and then measure your heart rate after each one. Your heart rate is how many times your heart beats each minute to pump blood around your body. You can measure your heart rate by measuring your pulse – this is easiest on your wrist. Put two fingers on the edge of your wrist below your thumb and count the number of beats you feel in a minute. Practise this a few times as you will need to do this as part of your investigation. You will need a timer or a watch.



**Before you start your scientific investigation, start setting up your report in your book.** You can fill it out as the investigation progresses.

Start a new page in your book.

1. Write the **Learning Objective** and then follow the Miracle Gro example by writing a **title** for your report. For example, 'Report on an investigation into the effect of exercise on the circulatory system'  
Write a subheading – '**The Question**'. This will be the same as the Learning Objective.  
Under the subheading '**Prediction**', write what you think will happen.  
Explain here what you think what you think will happen to your heart rate as a result of doing different types of exercise, and why you think this is. Which types of exercise will you choose (walking, running, jumping etc.)? What is different about each type of exercise? How do you think this will affect your heart rate? Will it beat faster? What do you know about the job of the heart that will help you with your prediction? Think about the heart's role in providing oxygen to the body. Keep going back to the Miracle Gro report to help you.

2. What equipment will you need? List this under the heading '**Equipment and Materials**'. You will need to think about how you are going to time and record your experiment. Will you need a helper or some specific exercise equipment?  
For a scientific test to be fair, only one thing must change. In the Miracle Gro example, only the type of plant food changed. This is called a variable. Everything else must stay the same. These are called constants. What will you change in your experiment? Which different types of exercise will you use? What will the constants be? (The same person? Where you do it? How long you exercise for?)  
Once you have decided, write your thinking under the subheading '**Variables**'.

3. The time has finally come to carry out your investigation.

Doing your investigation

- a) Choose several different types of exercise (4 or 5) and prepare any equipment you need.
- b) Decide how long you will be exercising for each time.
- c) Measure your heart rate (pulse) before you start the first exercise. This is your 'resting heart rate'.
- d) Now complete the first exercise and as soon as you finish, measure your pulse again.
- e) Wait for 5 minutes, then do your next exercise. As soon as you finish, measure your pulse again.
- f) Repeat step (e) until you have done all your different types of exercise.
- g) Record these results in a table as you go along.

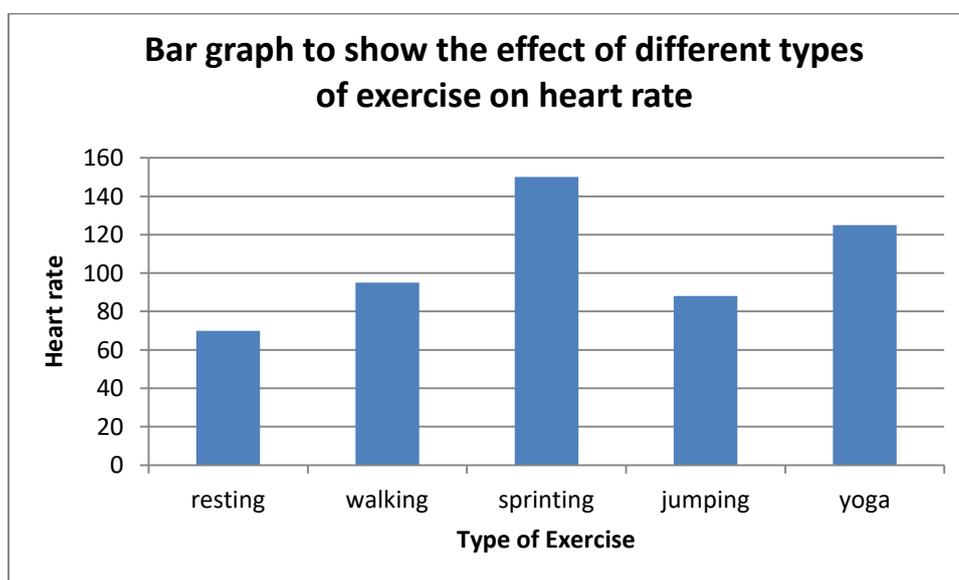
Under the heading '**Method**', write an account of how you carried out your investigation. Use the Miracle Gro example to help you.

4. Now you can show your results. One way of laying them out would be in a table like this:

### **Results**

Exercise	Heart Rate after doing this exercise (beats per minute)
Resting (no exercise)	70
Walking	95
Sprinting	150
Jumping	88
Yoga	125

Now show your results on a bar graph. It might look something like this:



If it helps, cut a piece of squared paper from your maths book to stick into your report. Remember to use a ruler!

5. Finally, you can write your **conclusion**. What did you find out? How do different types of exercise affect your heart rate? Which type of exercise affected it the most? Which affected it the least? Why do you think this is? Is it what you expected? Which exercise do you think would improve heart health the most? Do you think it's enough to exercise just once, or should you exercise regularly? Which type of exercise do you think might be best for older people in our community to help them to keep their circulatory system healthy?
- Scientists always reflect on the work they have done and think about how they could make it better if they were to do it again. If you did your experiment again, is there anything you would change to improve it? Finish your conclusion by evaluating your investigation, explaining what went well, what you would do differently next time, and why.**

## Success Criteria

A good scientific report will be written in sections with headings and subheadings. It will be written in a formal style, using scientific vocabulary. It will probably include diagrams, tables, charts or graphs.

### **This is easy!**

- Use headings and subheadings
- Write in full sentences using a variety of sentence starters and clause structures
- Look in the pack for a page of ideas for using subordinating clauses
- Use a range of punctuation correctly
- Use formal language
  - No contractions (for example, write **will not** instead of **won't**)
  - Use scientific vocabulary (look at the vocabulary you have written in your black books – aerobic, flexibility exercise, circulatory system, oxygen, carbon dioxide, pulse)
  - Have a go at using the passive voice
- Write neatly with joined handwriting
- Include a table and a chart (look at the example in the instructions)

Once you have finished your investigation, take a few minutes to reflect on your **written report** and how well it meets the success criteria. Write a couple of sentences in your journal to explain what you think you have done well and what you might change or improve next time.

### The Passive Voice

In your grammar lesson this week, you practised using the active and passive voice. Now you can experiment with using it in your writing.

Scientists often use the passive voice in their writing to give it a more formal style and because it often doesn't matter **who** did something.

Here are some examples from the Miracle Gro report:

- *Each plant was given 50ml of tap water* (instead of *a scientist gave each plant 50ml of tap water*)
- *Half of the plants will be fed with Miracle Gro* (instead of *somebody will feed half of the plants with Miracle Gro*)

Here are some examples of how you could try this out in your report:

- *Five different types of exercise will be carried out* (instead of *I will carry out five different types of exercise*)
- *My heart rate was measured as soon as each exercise was completed* (instead of *I measured my heart rate as soon as I completed each exercise*)