

# The Circulatory System

Friday 29<sup>th</sup> January

Sherwood has been contacted by *The Royal College of General Practitioners (GPs)* to challenge us to find out about the Circulatory System, and to create explanation posters and short films to display/play in their surgery waiting rooms.

They would really appreciate our help, informing the public about how the heart functions and would also like us to make links to health.



Royal College of  
General Practitioners

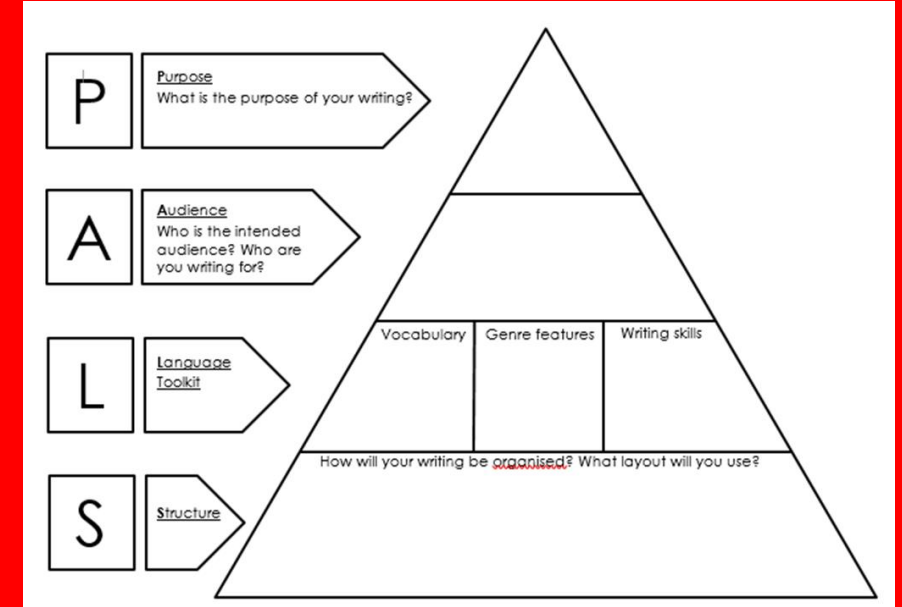
Yesterday, you used the PALS pyramid to plan your posters, and drafted your paragraphs.

Today, you are going to create your posters for the GP surgeries.

You can either use a piece of A3 paper, or two pages in your book.

Remember, your work needs to be of a Y6 standard – your paragraphs need to be well-written (by hand) using the key skills we identified on the PALS pyramid (watch yesterday's video again if you are unsure).

Be creative, make headings bold and clear and include diagrams to help the reader understand (there are some available to download on the website).



- Make sure you are formal in style, but use some informal and persuasive phrases to add interest and engage the reader.
- Don't forget to use your key vocabulary and Talk for Writing.
- You will need a general introductory paragraph (draw the reader in with an amazing fact), then these sections:
- Can you feel your heart?
- The structure of your heart
- The circulatory system
- Heart healthy

The Circulatory System Key Vocabulary		
heart	organ	ventricle
lungs	muscle(s)	atrium
vein(s)	oxygen	chamber
artery (ies)	oxygenated	circulatory
blood	carbon dioxide	cardiovascular
blood vessels	breathe	

Look at the examples on the next few pages.

# WHAT MAKES A HEART BEAT?

Have you heard the story of Frankenstein's monster – a creature stitched together from spare body parts, brought to life with a massive electric shock? It might surprise you to know that you have something in common with the monster. Without electricity, your heart (and therefore YOU) wouldn't be alive.

## ILLUSTRATION OF THE FACT

Your heart triggers each beat with a tiny electrical charge.

## Shocking

Your heart is controlled by what is sometimes called 'nature's pacemaker'. Its proper name is the sinoatrial node – or SA node for short. The SA node is part of your heart's wall, and it sends an electric signal that triggers each heartbeat. The signal starts a complicated process of muscle contractions that control a one-way mechanism of valves opening and closing.



## See for yourself

You can check how fast your heart is beating by taking your pulse. To do this, press your first and middle finger against the inside of your other wrist, at the base of your thumb. Count how many times you feel a throb in 20 seconds. Multiply this by 3 to get heartbeats per minute. This is your 'heart rate'.

## A one-way system

The valves between the upper and lower chambers of your heart work only one way. They open to allow blood to move down into the lower chambers, the ventricles. Then the valves close, making it impossible for blood to move back to where it came from.

As well as the valves within your heart, there are valves at the exits to the arteries that carry blood away. Together, these valves (and others like them in your blood vessels) make sure that your circulatory system is one-way only.

## LOOK CLOSER

### HEARTBEATS



1 When the heart is relaxed, blood enters the heart's upper chambers (atrial and lower chambers) unobstructed.



2 The atria contract, forcing the remaining blood through the valves into the ventricles.



3 The ventricles contract, forcing blood into the circulatory system.

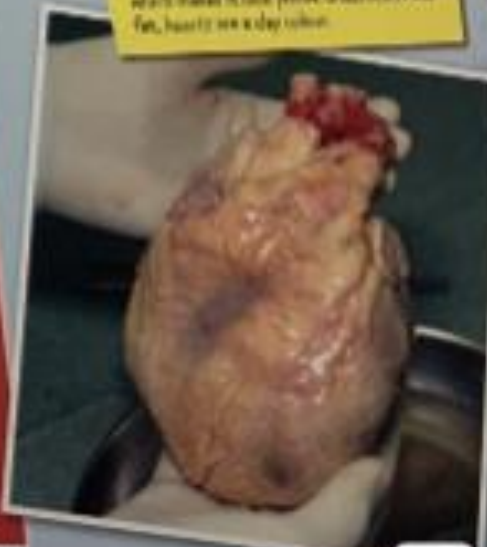
## STRANGE BUT TRUE!

Heart pulses are slower as you grow up. During childhood, you grow quickly, your heart pumps a lot of oxygen and nutrients, and weighs. Once you are fully grown, it beats more slowly.

### Typical pulse rates

Newborn:	130
1 year:	120
6 years:	100
12 years:	85
Adult:	60-75

The human heart is covered by a layer of fat, which makes it look yellow underneath the fat, heart is a deep red color.





# Brain Health

Age-proof your brain against  
Alzheimer's disease and dementia

## BODY

Physical activity helps the part of your brain that makes memories. As we age, that part of the brain shrinks and makes us more forgetful. Exercise can slow or reverse that process. So get out and move your body!



### EXERCISE

30 minutes of physical activity every day



### QUIT SMOKING

Quit smoking or chewing tobacco



### MAINTAIN A HEALTHY WEIGHT



### PROTECT YOUR HEAD

Use your seat belt when driving and wear a helmet when

- skiing
- skateboarding & snowboarding
- riding a motorcycle
- playing contact sports



### GET A GOOD NIGHT'S SLEEP

Get 7-8 hours of restful sleep at night

## SOCIAL CONNECTIONS



### FIND A PURPOSE

Discovering a purpose in your life can help you stay sharp. Try volunteering, developing a new hobby, or joining a social club.



### MEET OFTEN WITH OTHERS

### Dark chocolate

Eating small amounts of dark chocolate with at least 70% cocoa

### Nuts & seeds

Snack on nuts and seeds like walnuts, almonds, and sunflower seeds

### Eat fish

Eat fish at least twice a week, especially fatty fish like salmon, mackerel, and herring

### Limit fats

Use extra virgin olive oil, canola oil, and peanut oil instead of butter, margarine, or shortening

### Replace salt

Replace the salt shaker with more spices and herbs, especially turmeric, curry powder, black pepper, cinnamon, oregano, basil, rosemary, parsley, and ginger

### Tea & coffee

Try on coffee, black tea, and green tea without lots of added sugar

If you drink alcohol, red wine may be the best choice for your brain. Limit your intake to 1 drink a day for women and 2 drinks a day for men

### Vegetables & berries

Include lots of vegetables in your diet, especially leafy greens

Go vegetarian a few times a week by replacing red meat with a cooked beef, turkey, or tofu

Add avocados and berries to your diet, especially blackberries and blueberries

The nutrients in food work together to keep your brain healthy

best  
foods for  
brain health

## CHALLENGE YOUR BRAIN



### LEARN NEW THINGS

Learning new things and challenging your brain creates new brain cells

Help age-proof your brain!

