



# Science

## Scientists and Inventors

# Marie Maynard Daly

Scientists and Inventors



# Aim

- To explain how diet affects the way the body functions.

# Success Criteria

- I can identify the positive and negative effects that different foods have on my body.
- I can identify where my food comes from.
- I can explain how cholesterol affects the body.
- I can explain why the attitudes of people at different times may have presented obstacles to some scientists and inventors.



# Keeping Healthy



◆ Why do we stay healthy?



◆ Make sure you  
Eat healthily



◆ Exercise



◆ Avoid too much 'junk' food.

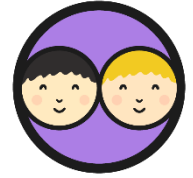


◆ Sleep enough

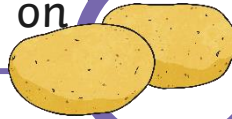


◆ Drink plenty

# Food Sources



Chicken

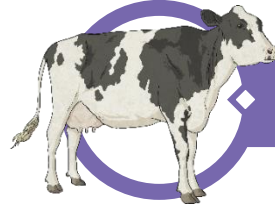


Potato

First, we're going to think about where our food comes from.

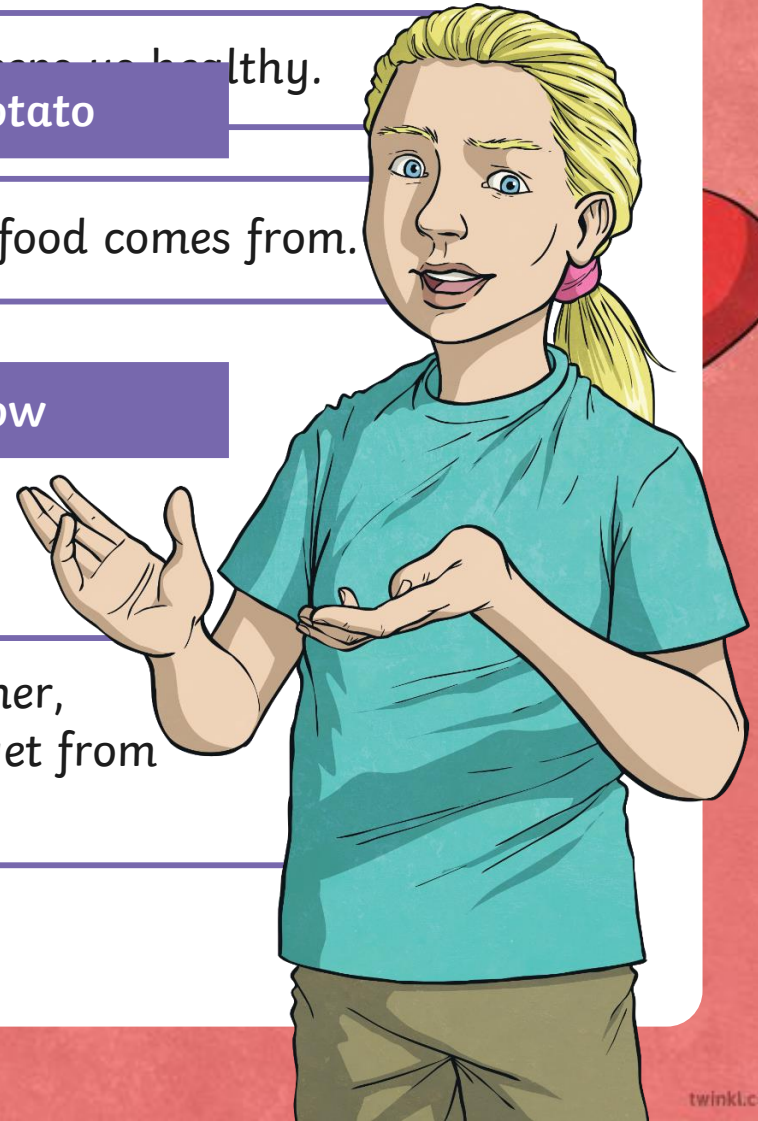


Wheat



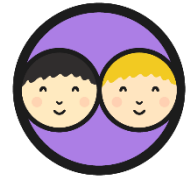
Cow

Look at these food sources and, with a partner, write down all the foods that humans can get from each one.

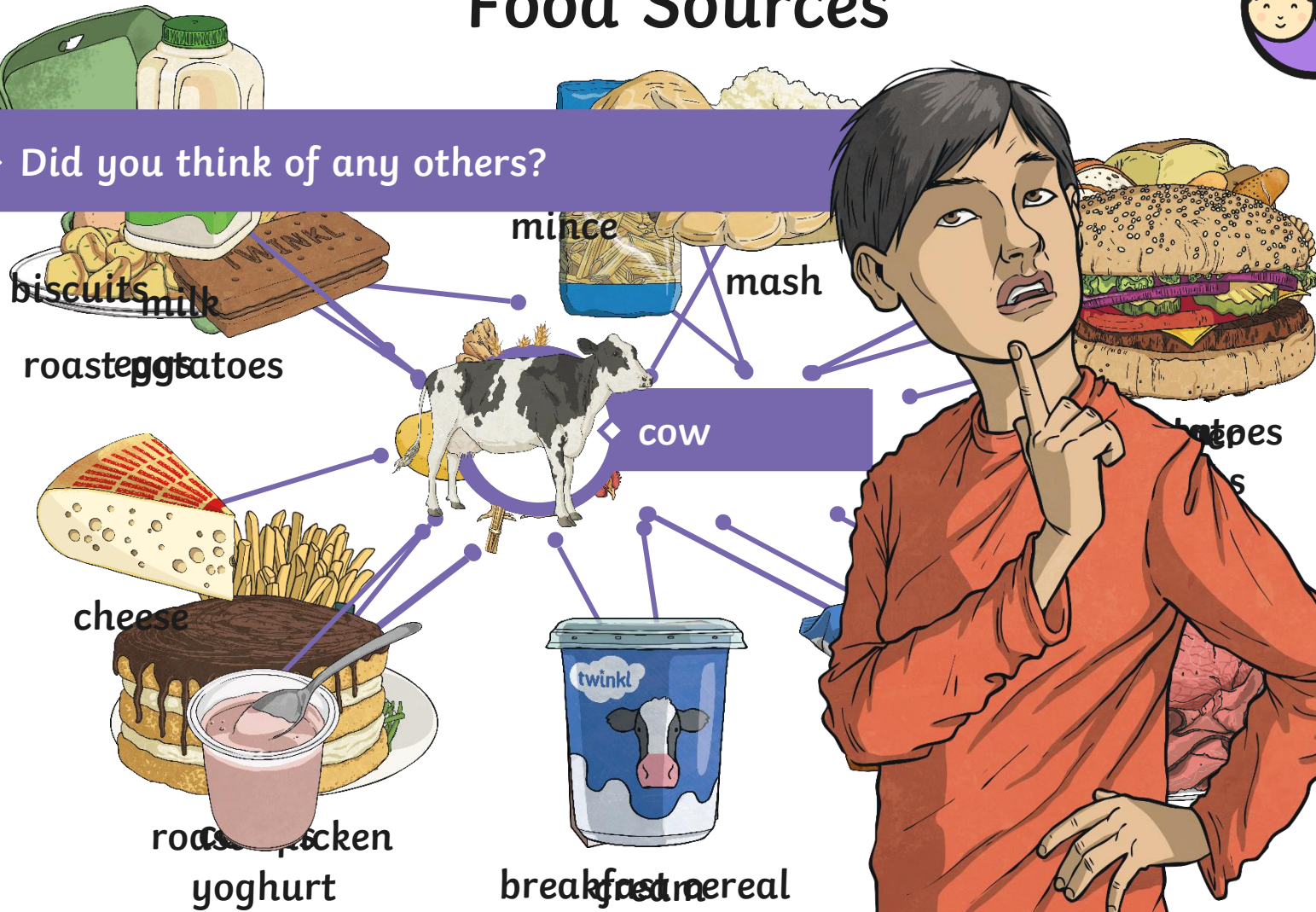




# Food Sources



◆ Did you think of any others?



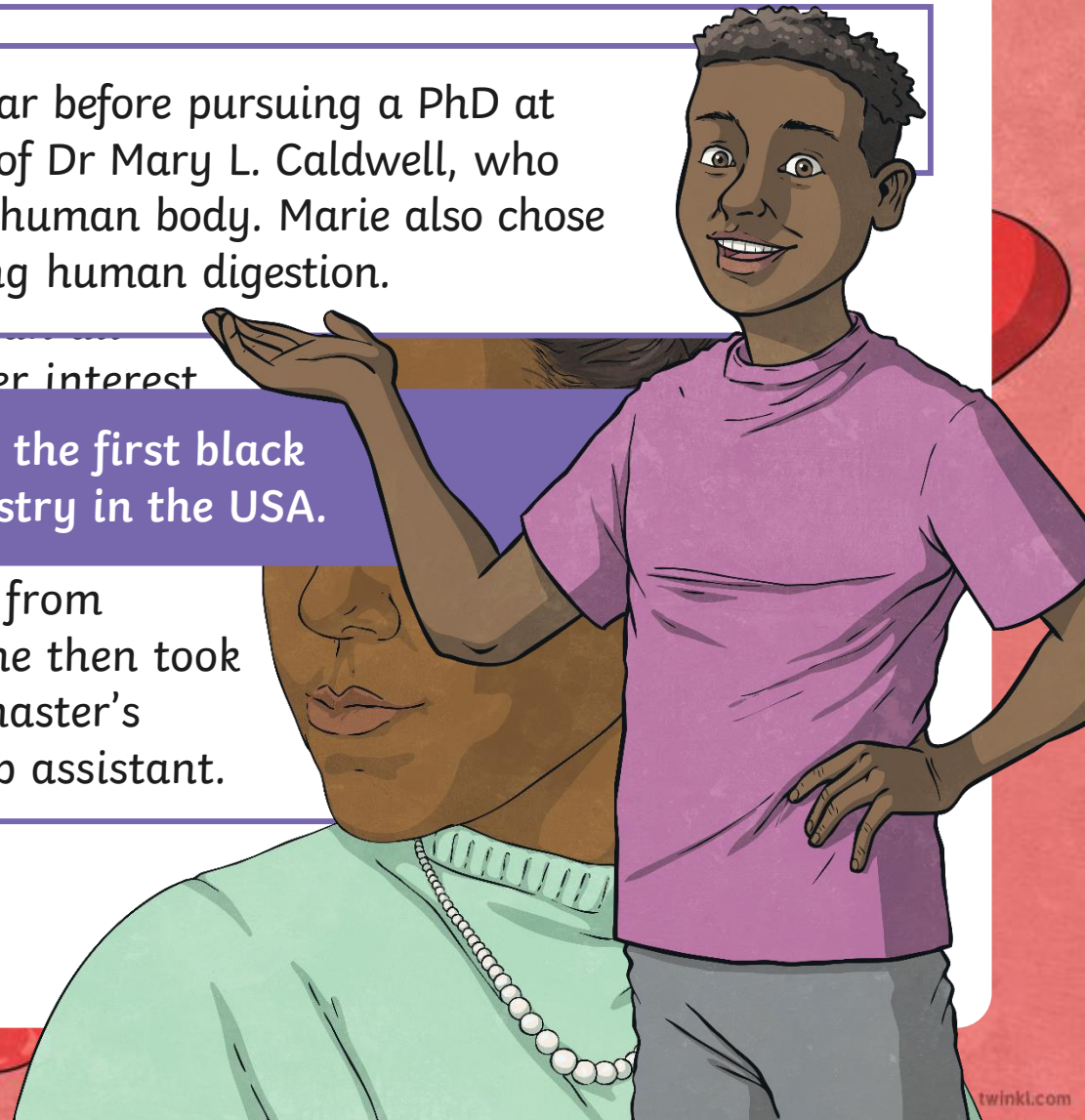
# Marie Maynard Daly

Daly tutored students for a year before pursuing a PhD at Columbia under the direction of Dr Mary L. Caldwell, who was studying digestion in the human body. Marie also chose to study the chemicals affecting human digestion.

girls school that supported her interest

Marie Maynard Daly became the first black woman with a PhD in chemistry in the USA.

She graduated with a degree from Queens University in 1942. She then took just one more year to get a master's degree while working as a lab assistant.



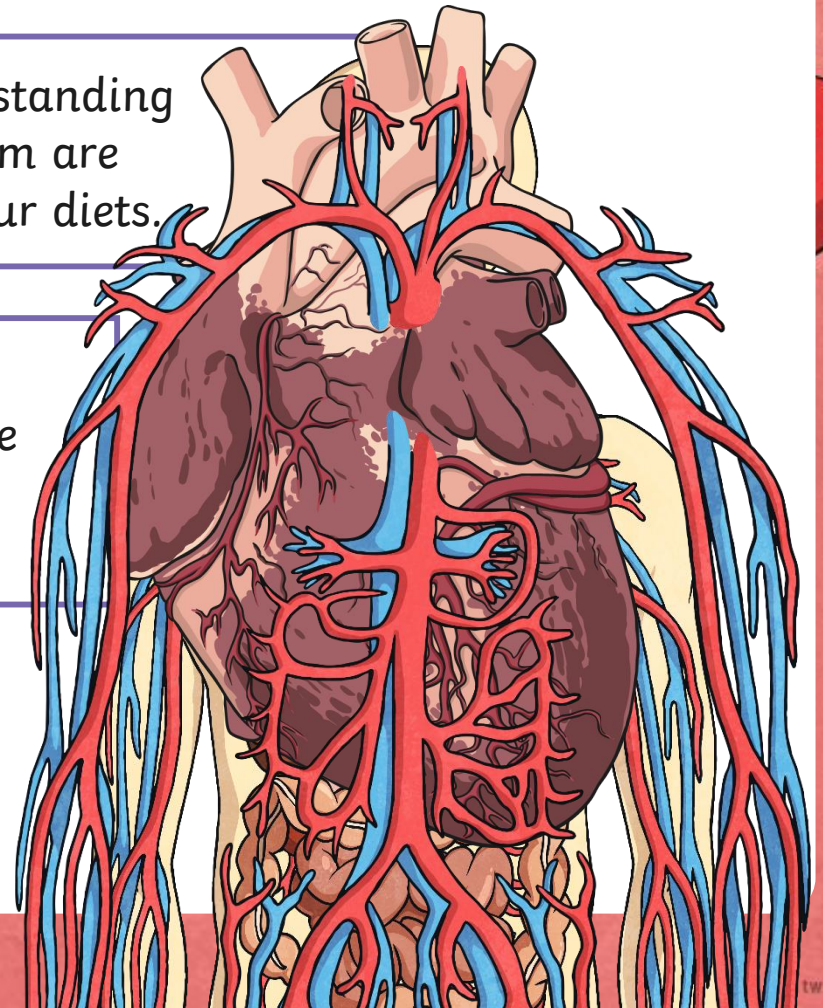


# Marie Maynard Daly

◆ Now a doctor, Marie continued to study the chemistry of the human body.

◆ She made huge advances in our understanding of how the heart and circulatory system are affected by sugar and **cholesterol** in our diets.

◆ Her work has demonstrated that too many fatty and sugary foods can make the arteries narrower and can cause heart disease.





# Cholesterol

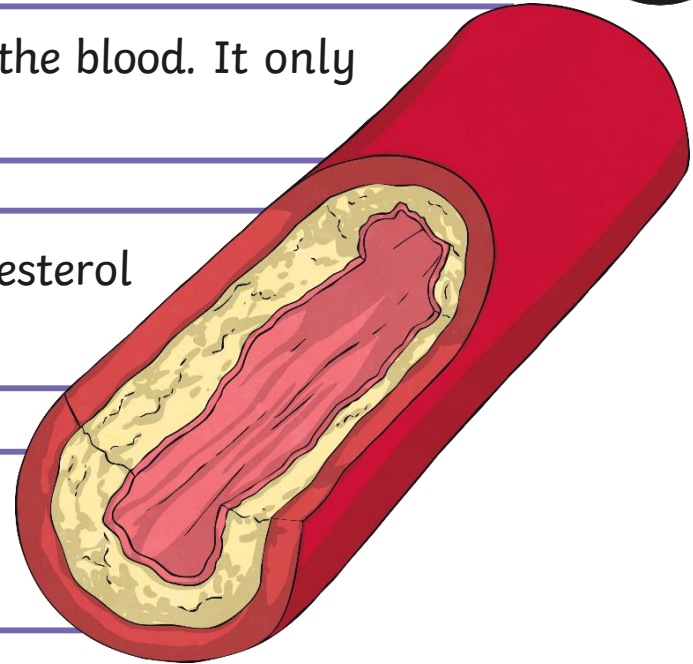


Cholesterol is a type of fat that travels in the blood. It only comes from **animal** products.

Our own livers actually make some cholesterol as some parts of our bodies need it.

We now know that there are two types of cholesterol.

- ◆ One is good for keeping our blood vessels clean.
- ◆ The other does the opposite - it can build up and block blood vessels which can be very dangerous. This was the type Marie Maynard Daly was interested in.

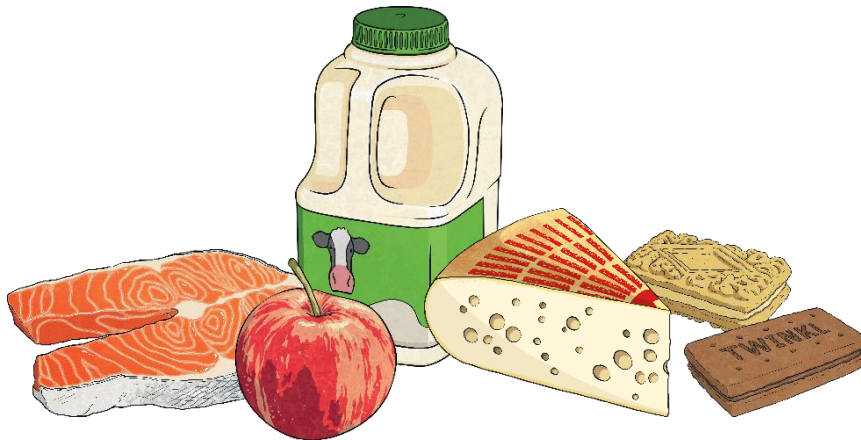


# Cholesterol



In your groups, cut up the foods on your **High or Low?** sheets.

Discuss which foods you think have the highest amounts of cholesterol, then try to order them from highest to lowest.



## High or Low?

To explain how diet affects the way the body functions.

Cut out the food types at the bottom of this sheet and try to order them from lowest to highest amounts of cholesterol below.

Lowest

Which foods do your group think are the highest in cholesterol?

Why?



Highest



Science | Year 6 | Science and Nutrition | Marie Perle Day | Lesson 2

semi-skimmed milk	salmon	vegetable oil	baked potato	apples
eggs	chicken breast	celery	cheddar cheese	

# Cholesterol

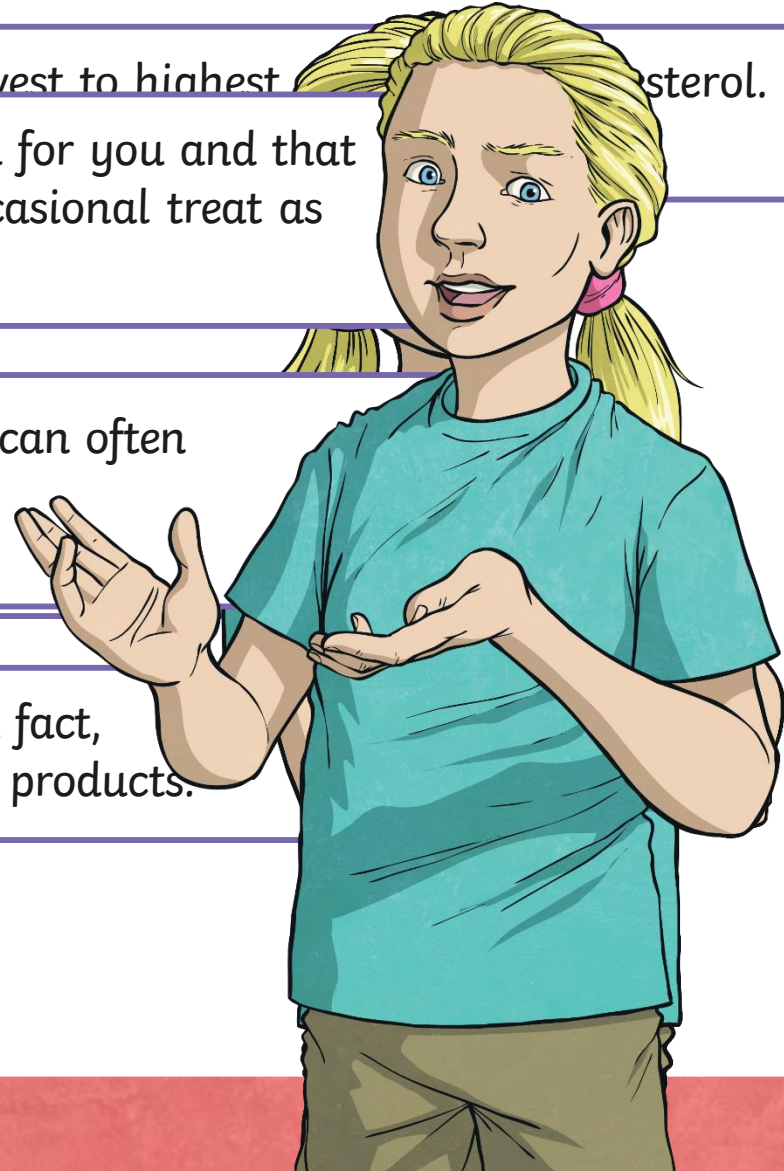
Here are the foods in order from lowest to highest cholesterol.

**Remember**, some cholesterol is good for you and that fatty foods can be enjoyed as an occasional treat as part of a healthy diet.

Did any surprise you?

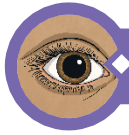
Food with high levels of cholesterol can often be good in other ways, including as a source of protein.

They come from animal sources - in fact, cholesterol **only** comes from animal products.





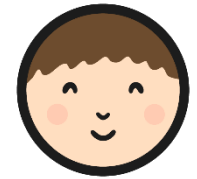
# Cholesterol



table

Food	Amount of cholesterol
apples	0mg
vegetable oil	0mg
baked potatoes	0mg
celery	0mg
semi-skimmed milk	8mg
salmon	55mg
chicken breast	85mg
cheddar cheese	105mg
eggs	373mg

# Diet and the Heart



## Diet and the Heart

To explain how diet affects the way the body functions.

Use the words below to complete the paragraph about diet and the effect of cholesterol on the heart and circulation.

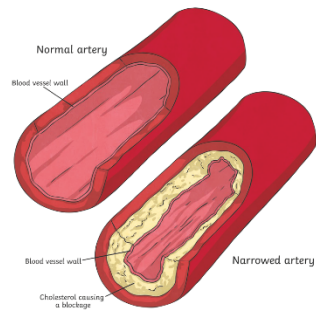
narrow	sugar	animal	cholesterol
fat	block	circulatory	clean

Marie Maynard Daly studied how \_\_\_\_\_ and \_\_\_\_\_ affect the human body, particularly the heart and \_\_\_\_\_ system. She discovered that the arteries in the body can \_\_\_\_\_ from eating too many sugary or fatty foods.

Cholesterol is a type of \_\_\_\_\_ that can travel in the blood. Not all cholesterol is bad; in fact, some parts of our bodies need it to work. The good type is good for keeping blood vessels \_\_\_\_\_, but the bad type builds up in our blood vessels and can \_\_\_\_\_ them.

Cholesterol is only found in food which comes from \_\_\_\_\_ sources.

Make a poster to show someone how they could improve health by eating less cholesterol.



## Diet and the Heart

To explain how diet affects the way the body functions.

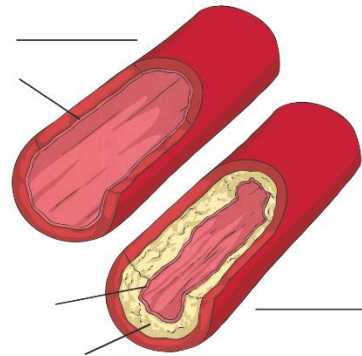
Complete the paragraph about diet and the effect of cholesterol on the heart and circulation using what you have learnt so far.

Marie Maynard Daly studied how \_\_\_\_\_ and \_\_\_\_\_ affect the human body, particularly the heart and \_\_\_\_\_ system. She discovered that the arteries in the body can \_\_\_\_\_ from eating too many sugary or fatty foods.

Cholesterol is a type of \_\_\_\_\_ that can travel in the blood. Not all cholesterol is bad; in fact, some parts of our bodies need it to work. The good type is good for keeping blood vessels \_\_\_\_\_, but the bad type builds up in our blood vessels and can \_\_\_\_\_ them.

Cholesterol is only found in food which comes from \_\_\_\_\_ sources.

Use what you have learned about cholesterol to label this diagram.



# Overcoming Obstacles



## Marie's achievements:

- ◆ 1942 – Marie completes her first degree.
- ◆ 1943 – Marie completes her master's degree.
- ◆ 1947 – Marie completes her PhD.



## Significant events in the USA:

- ◆ 1955 – Rosa Parks refuses to give up her seat on the bus -
- ◆ 1956 – The Montgomery bus boycott begins (the Montgomery Improvement Association is formed to coordinate the boycott and train together).
- ◆ 1957 – 60 black leaders and **pastors**, including Martin Luther King, meet to coordinate protests against discrimination and segregation.



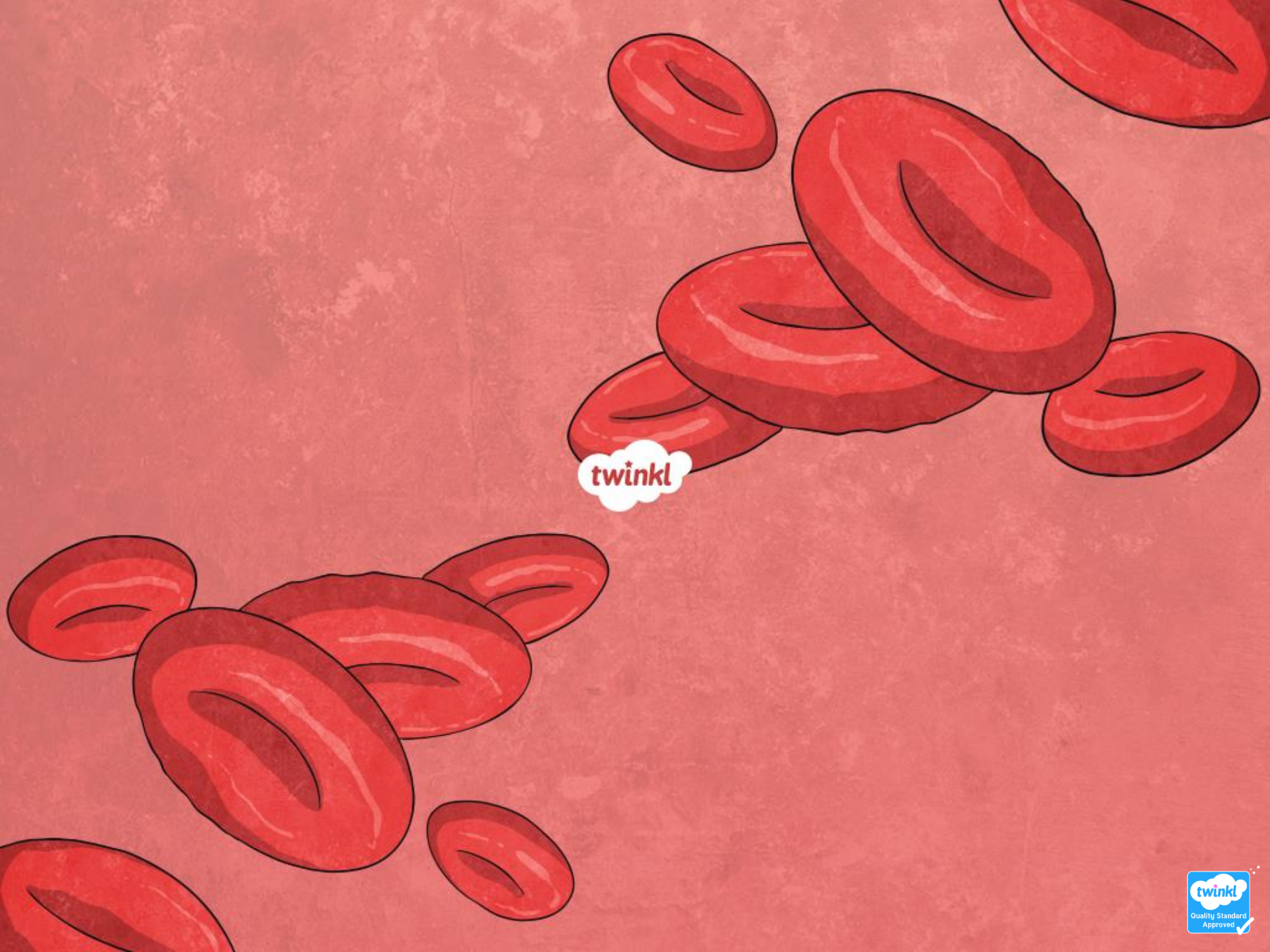
# Aim



- To explain how diet affects the way the body functions.

# Success Criteria

- I can identify the positive and negative effects that different foods have on my body.
- I can identify where my food comes from.
- I can explain how cholesterol affects the body.
- I can explain why the attitudes of people at different times may have presented obstacles to some scientists and inventors.



twinkl