

Transporting Nutrients

Aim

- To understand the purposes of nutrients.

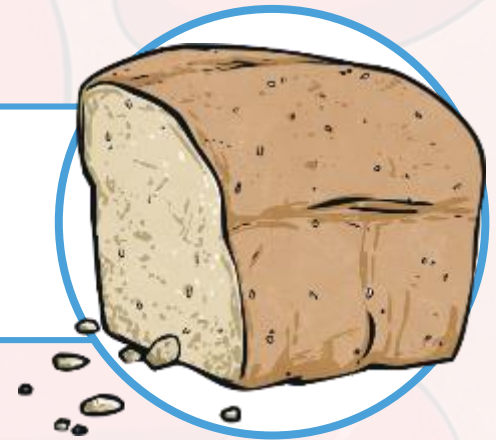
What do you know?

- Which healthy and unhealthy foods and drink do you know about?
- Can you name any different food types?
- Do you know the names of any nutrients?
- What are the purposes of the different nutrients?

Nutrients

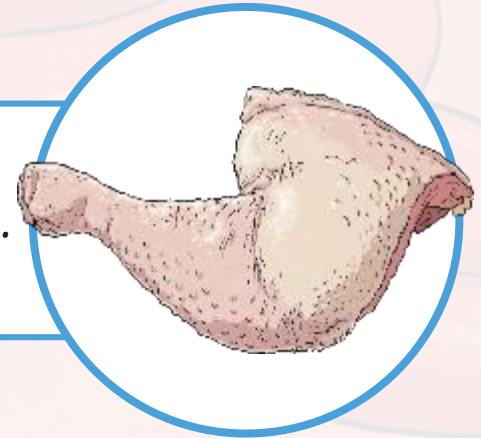
Carbohydrates

- Found in cereals, bread, pasta, rice, potatoes.
- Provide energy.



Proteins

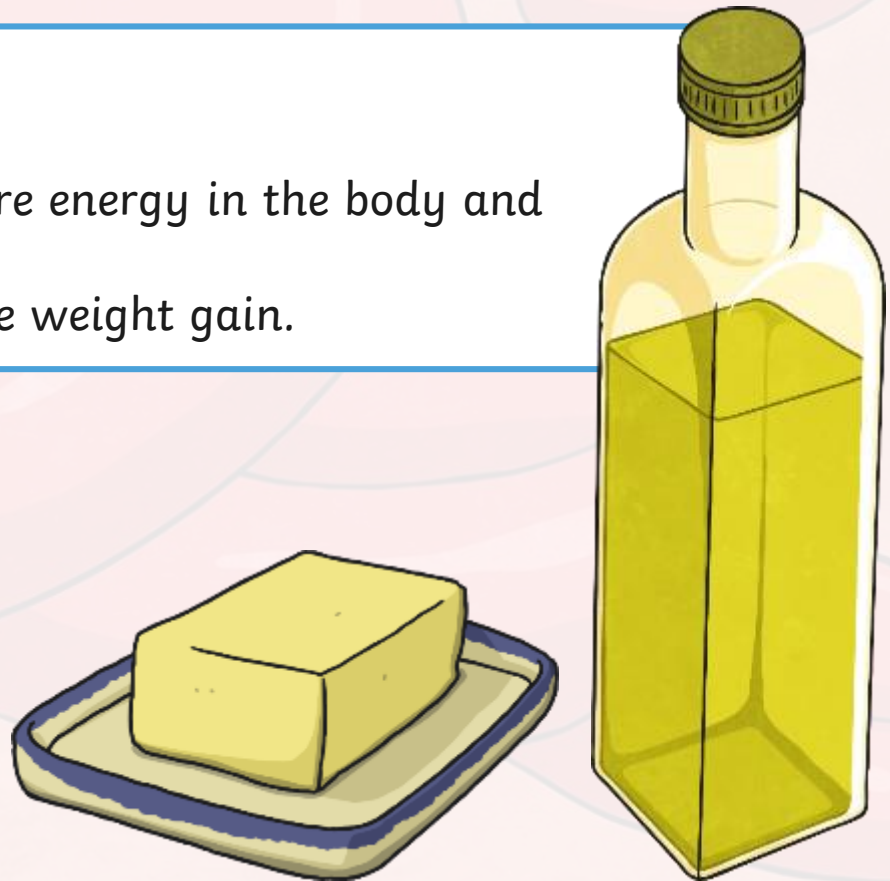
- Found in fish, meat, eggs, beans, pulses and dairy.
- For growth and repair.



Nutrients

Fats

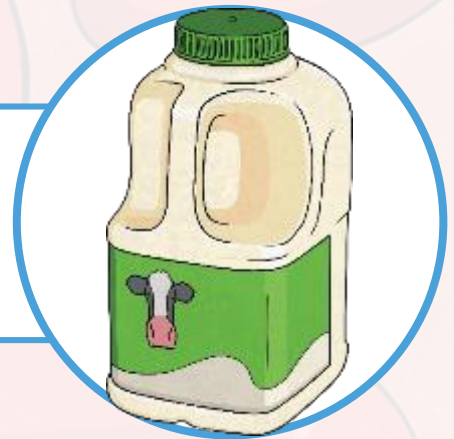
- Found in butter, oil, nuts.
- To provide energy. Also to store energy in the body and insulate it against the cold.
- Excessive amounts of fat cause weight gain.



Nutrients

Minerals

- Found in salt, milk, liver, vegetables.
- Small amounts to stay healthy.



Vitamins

- Found in dairy, fruit, vegetables.
- Small amounts to stay healthy.



Nutrients

Fibre

- Found in cereals, bread, beans, lentils, fruit, vegetables and bran.
- to provide roughage to help to keep the food moving through the gut.



Water

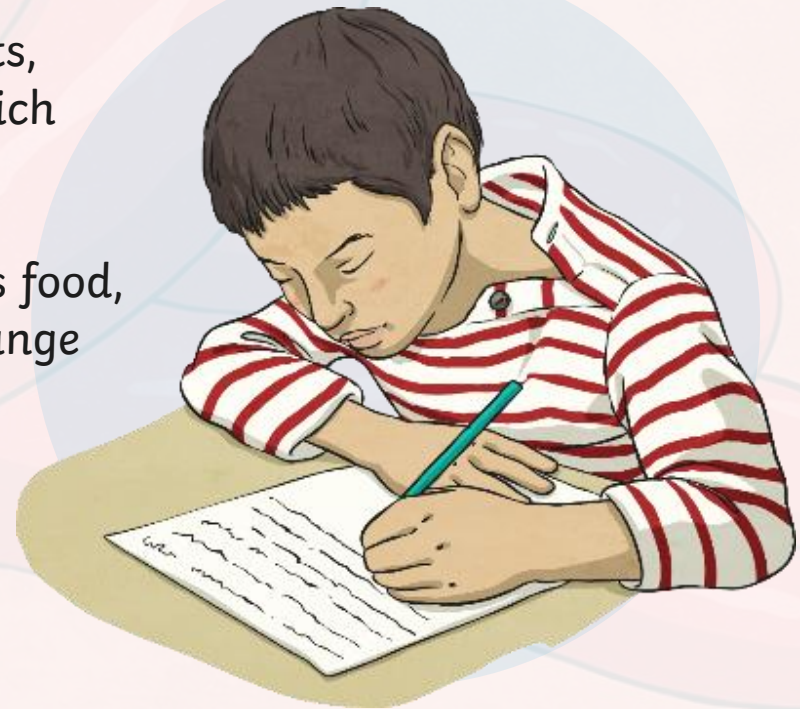
- Found in fruit juice, milk, water.
- Needed for cells and body fluids.



Nourishing Activities

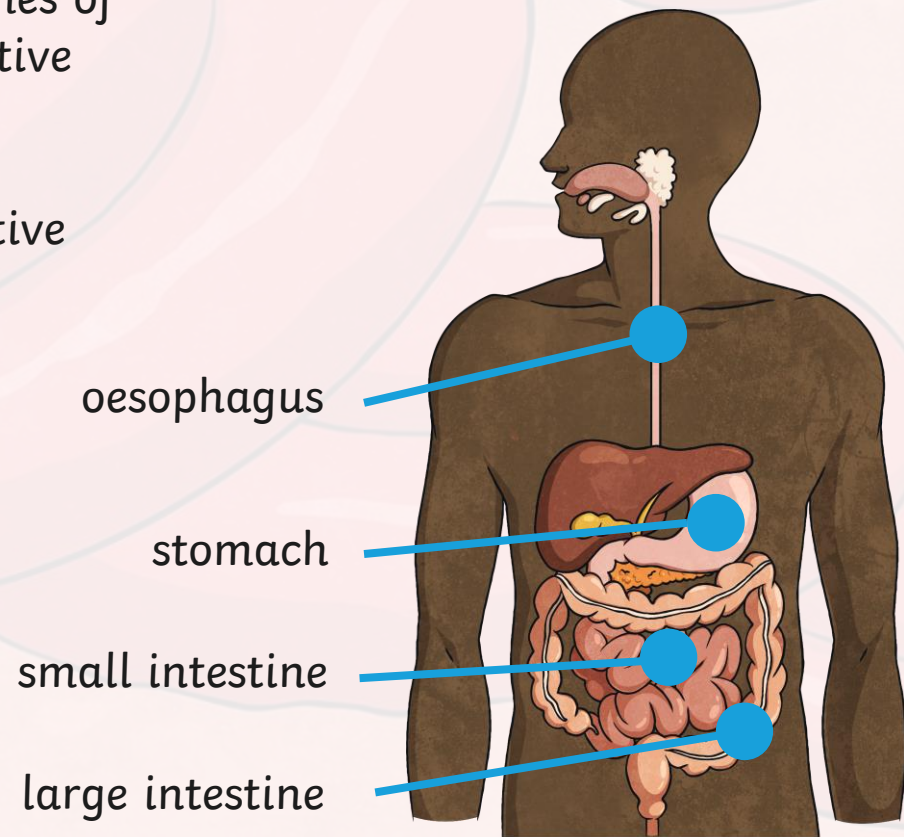
Use the information provided and your own research to understand the purpose of nutrients.

- Make a table showing the nutrients, their purpose and the foods in which they are found.
- Design a healthy menu for a day's food, showing how the food gives the range of nutrients required.
- Make a book or a computer-based presentation about the nutrients and their purposes.



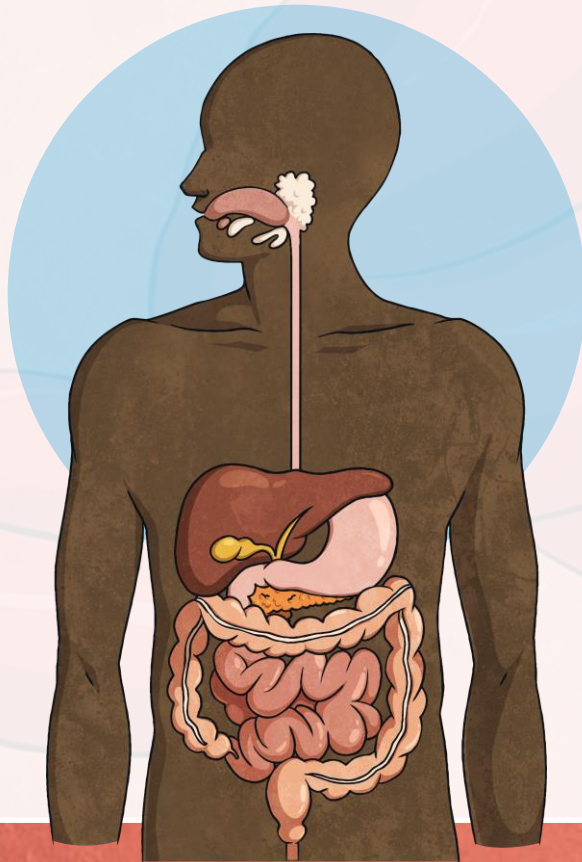
The Digestive System

- Can you remember the names of the main parts of the digestive system?
- Can you describe the digestive system to a partner?
- Click on the circles for the answers.



The Digestive System

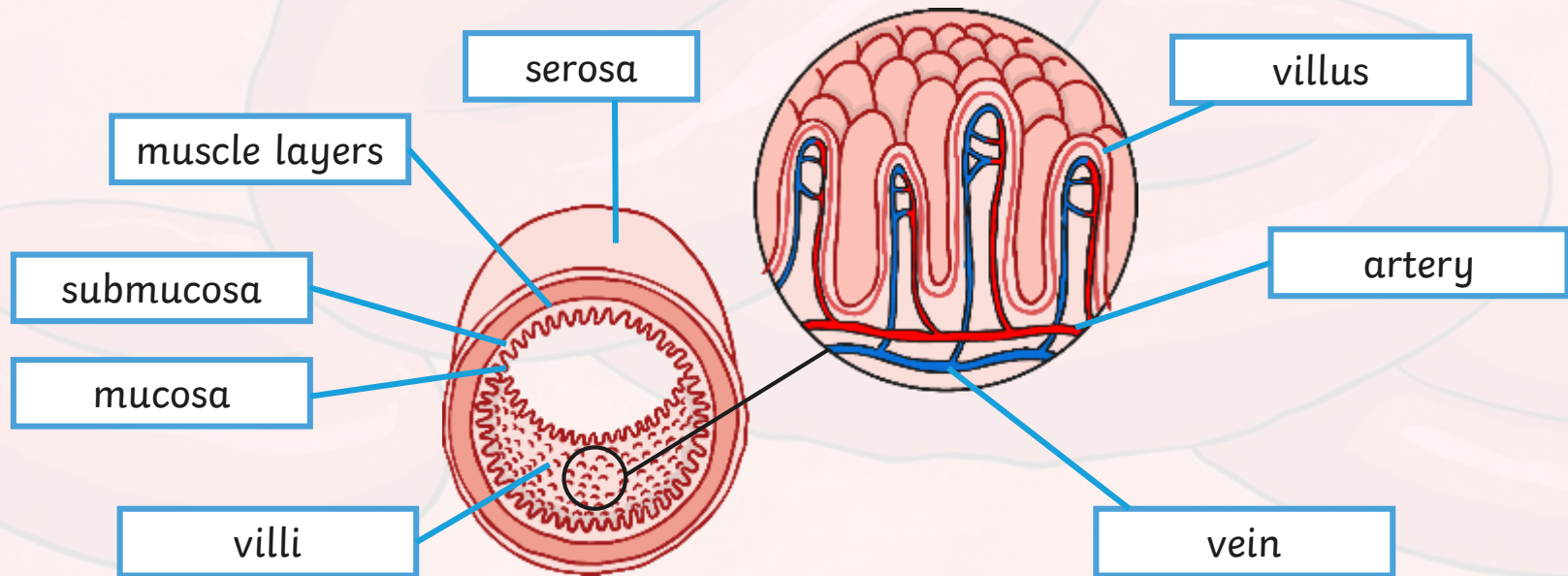
LO: To understand how nutrients are absorbed into the body.



Any leftover waste (parts of the food that your body cannot use) goes into the **large intestine** and then finally leaves our body via the colon in the form of a stool.

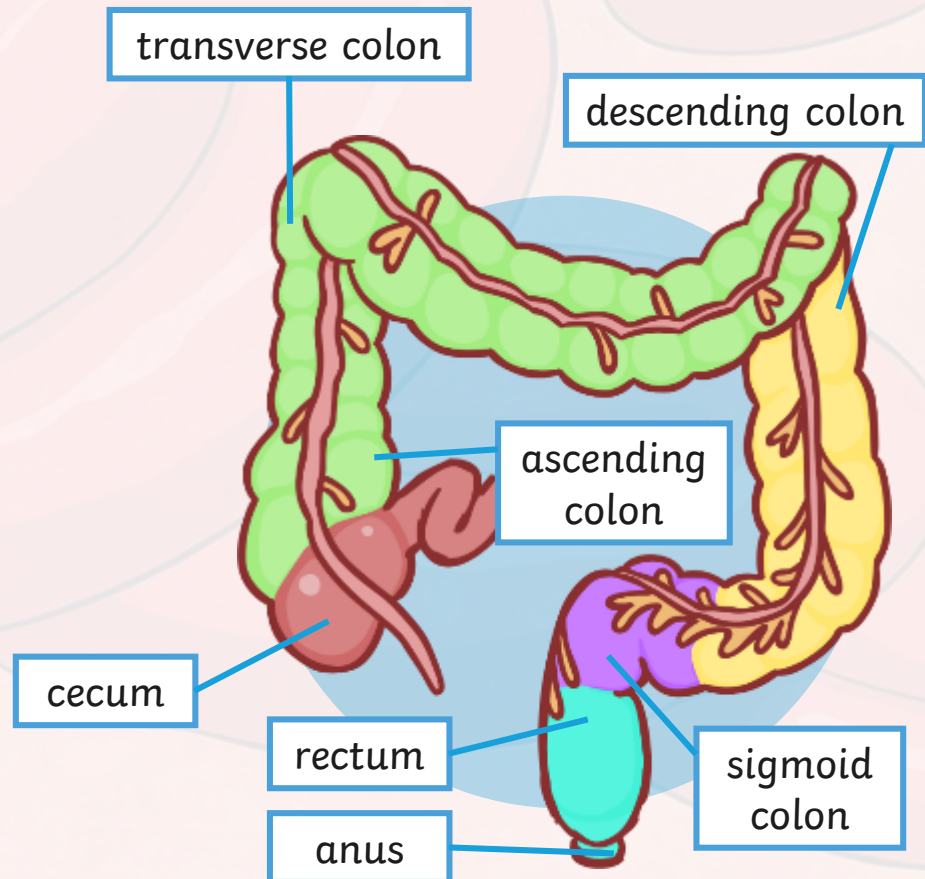
The Process of Absorption

- Nutrients are absorbed into the blood in the small intestine.
- There are tiny hair-like villi that help this process happen.
- The nutrients are carried in the blood to the different parts of the body that need them.



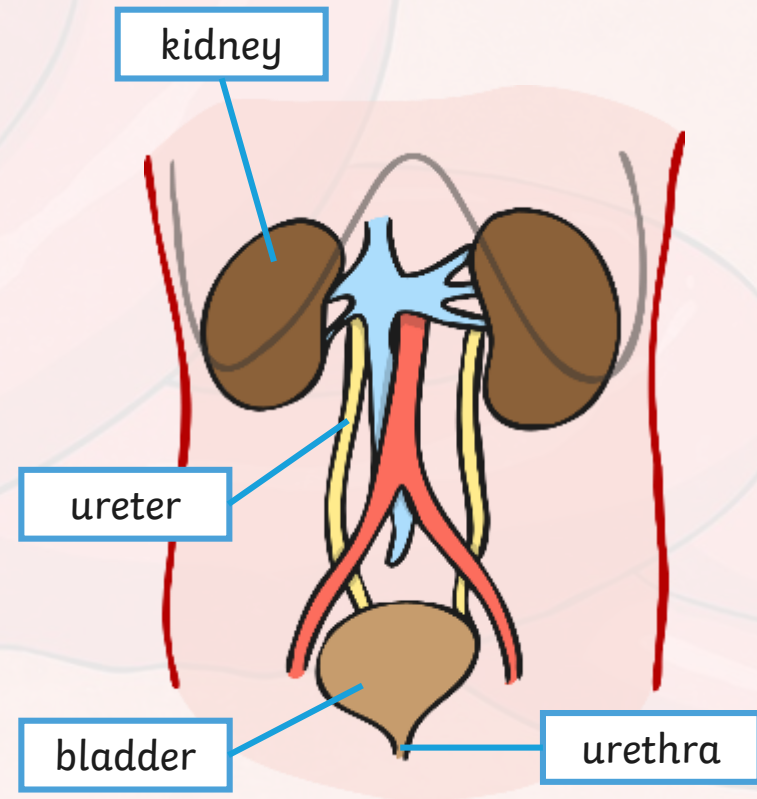
The Process of Elimination

- Waste from the small intestine is passed through the cecum into the large intestine.
- Water is squeezed out of the colon back into the body.
- The dry waste is stored in the rectum.
- It is then pushed out of the body as faeces through the anus.



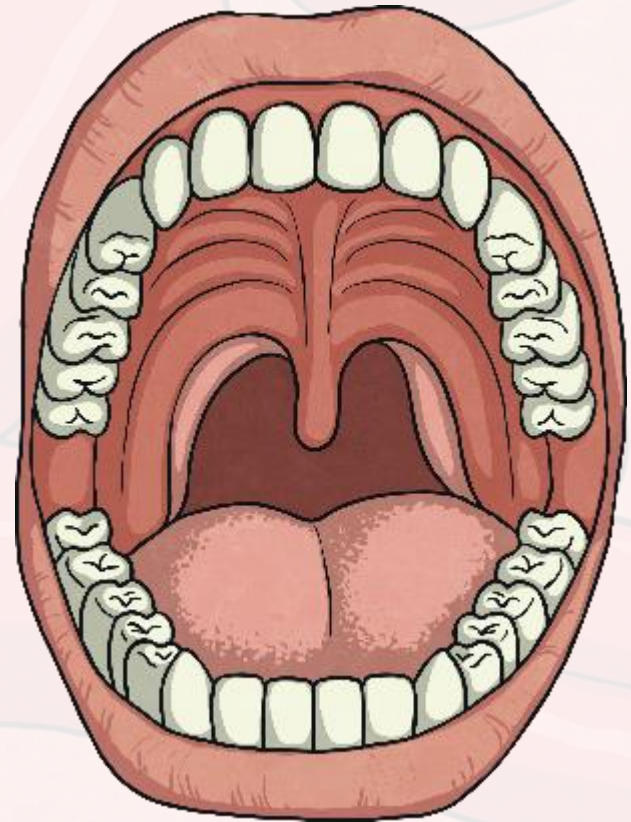
The Process of Elimination

- The kidneys filter out waste from the blood.
- The kidneys allow the nutrients in the blood to flow to the rest of the body where they are needed.
- The waste is turned into urine and flows to the bladder.
- When the bladder feels full the brain says “Go to the toilet!”.

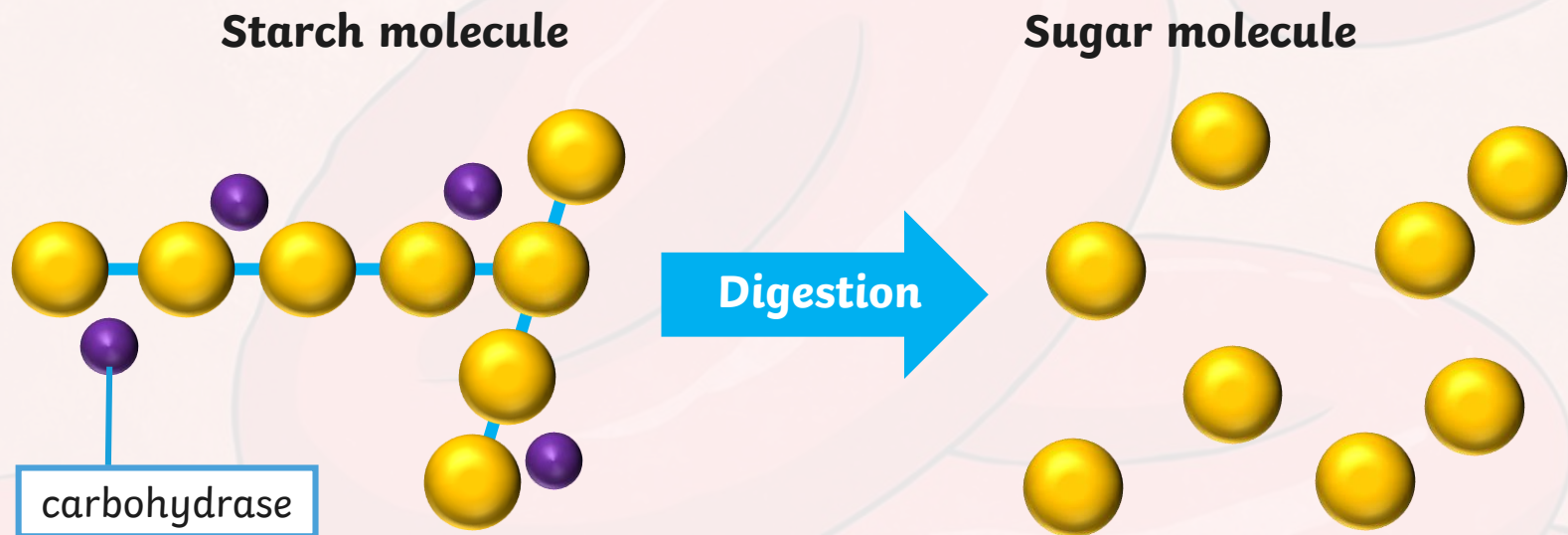


Did You Know?

- We chew our food for 5-30 seconds.
- It takes 10 seconds for food to be swallowed.
- Food sloshes around in the stomach for 3-4 hours.
- Food then spends about 3 hours in the small intestine.
- Adult intestines are about 6-8m long.
- Food waste spends 18 hours to 2 days drying out in the large intestine.



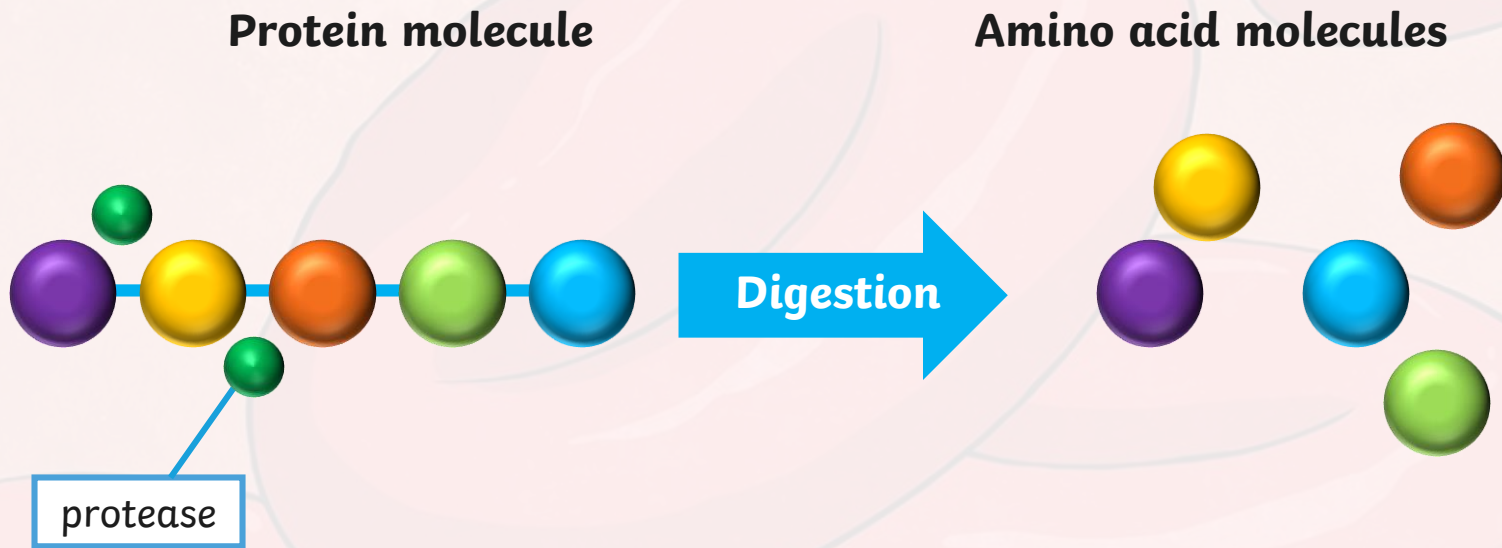
Nutrients



Carbohydrates

- Digested in the mouth, stomach and small intestine.
- Carbohydrase enzymes break down starch into sugars.

Nutrients

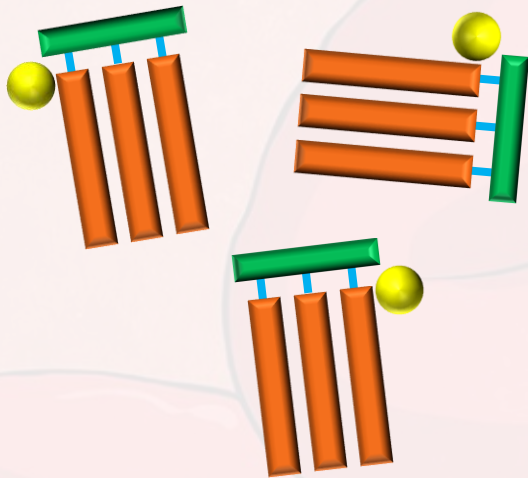


Proteins

- Digested in the stomach and the small intestine.
- Protease enzymes break down proteins into amino acids.

Nutrients

Fat molecules



Digestion

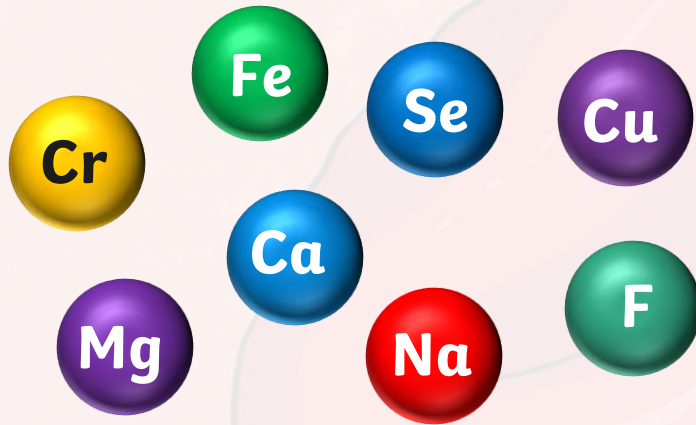
Fatty acid molecules and Glycerol molecules



Fats

- Lipase enzymes break down fat into fatty acids and glycerol.
- In the small intestine, bile from the liver, helps break down fat to make it easier for the lipase.

Nutrients

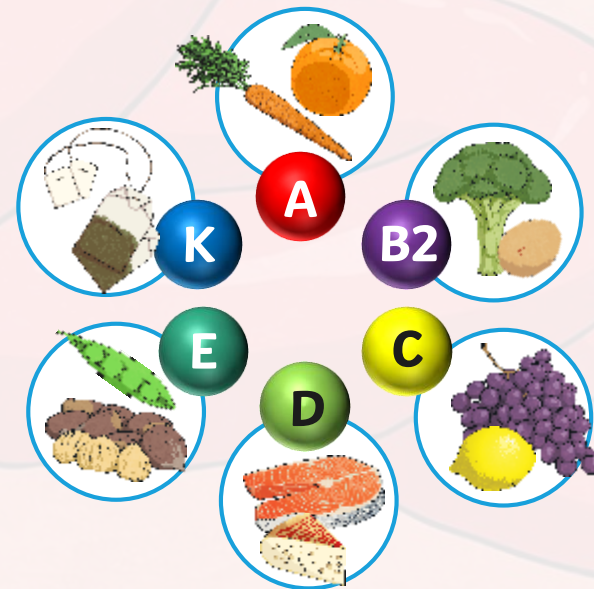


Minerals

- Already small enough to be absorbed without being digested.

Vitamins

- Already small enough to be absorbed without being digested.



Nutrients



Water

- Already small enough to be absorbed without being digested.

Fibre

- Fibre cannot be broken down, so it is not absorbed by the body.



Tasks

LO: To show the purpose and function of nutrients.

Choose all or part of the Digestive System, including the purposes of nutrients, and produce a poster or leaflet, which promotes the importance of a healthy diet.

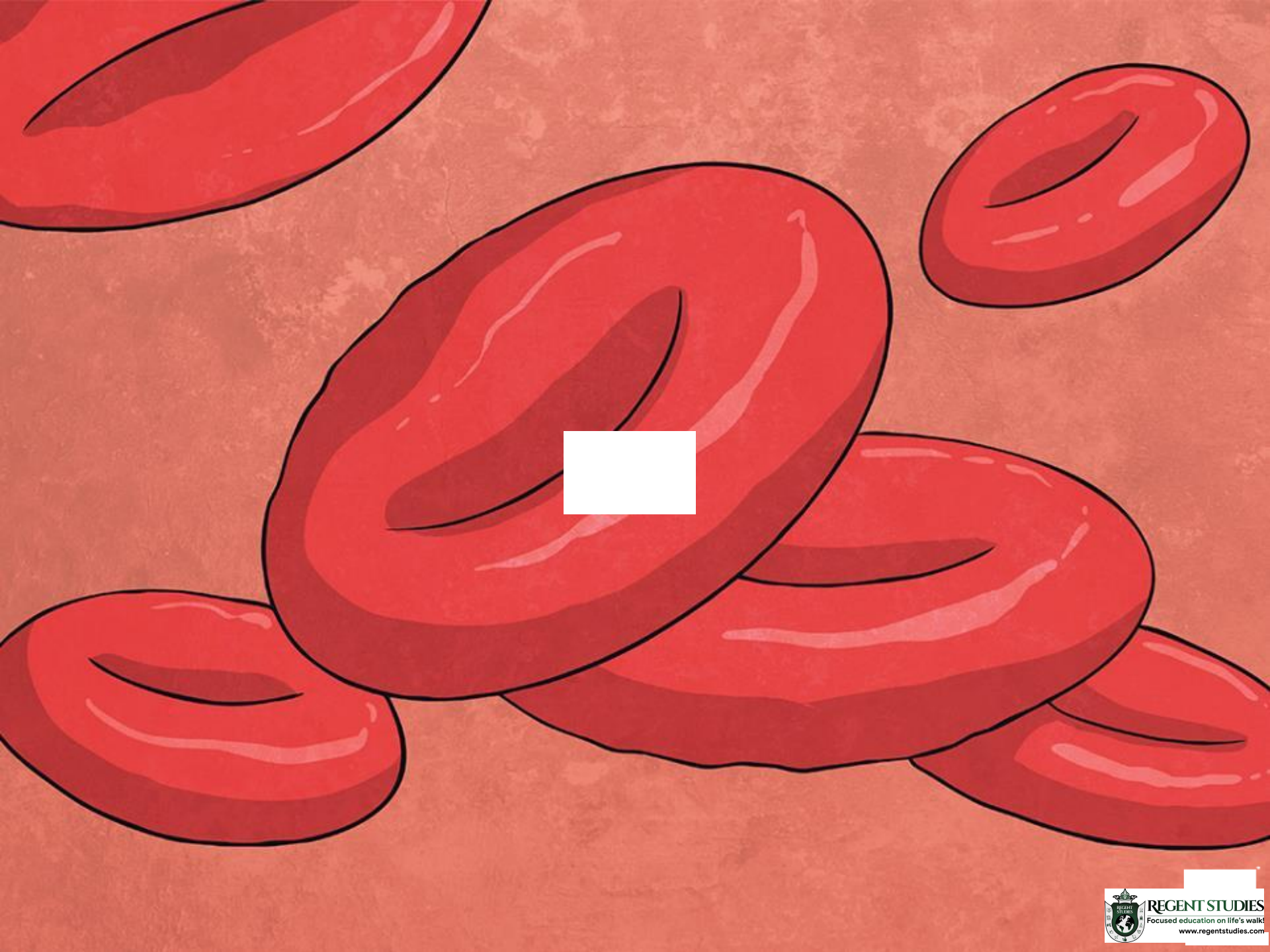
Choose one of the nutrients and research in more detail the foods in which it is found, what happens to it in the body, and its importance for staying healthy. If you choose minerals or vitamins, you might just choose one mineral (e.g. calcium) or one vitamin (e.g. Vitamin C). How can you present your learning?

Tasks

LO: To find information.

This table shows how a finding information template might be used.

What I know	What I want to found out	What I found out
Vitamin C is found in fruit. Vitamin C doesn't last long in the body. Vitamin C helps you not get colds.	What's the best food to eat to get Vitamin C? Do Vitamin C pills help? How does Vitamin C help our bodies?	Also called ascorbic acid Good sources: oranges, peppers, broccoli, potatoes. Help wounds heal well.



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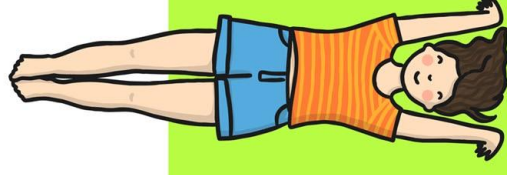


CARBOHYDRATES provide energy.



Carbohydrates are found in cereals, bread, pasta, rice and potatoes.

We need them to be active.



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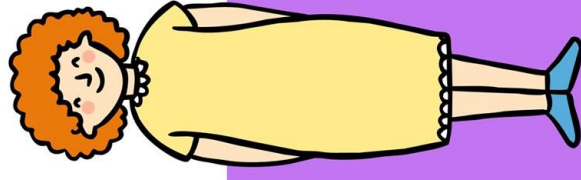
PROTEINS

help build muscle.



Proteins are found in fish,
meat, eggs, beans,
pulses and dairy.

Proteins are important for
growth and help the
body repair itself.



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FATS provide energy.



Fats are found in butter, oils and nuts.

Fats provide energy. They also store energy in the body and insulate it against the cold.

Excessive amounts of fat cause weight gain.



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MINERALS for health.



Found in salt, milk, liver
and vegetables.

Small amounts of minerals are
required to stay healthy.

Calcium gives us strong
bones and teeth.

Iron helps our blood
send oxygen around
the body.



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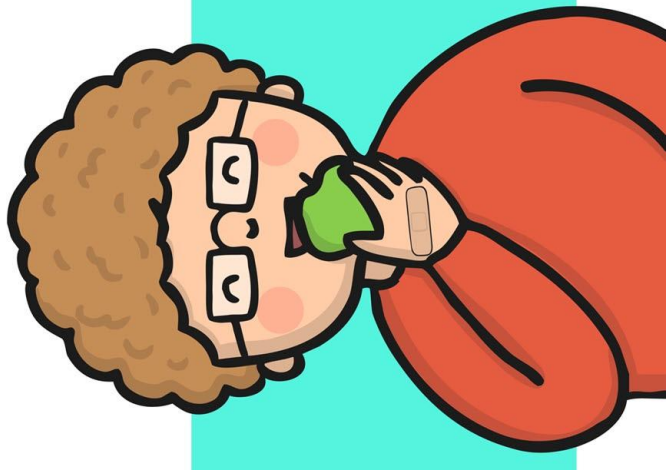
VITAMINS for our health.



Vitamins are found in dairy,
fruit and vegetables

Small amounts of vitamins are
needed to stay healthy.

Vitamin C helps wounds heal well.



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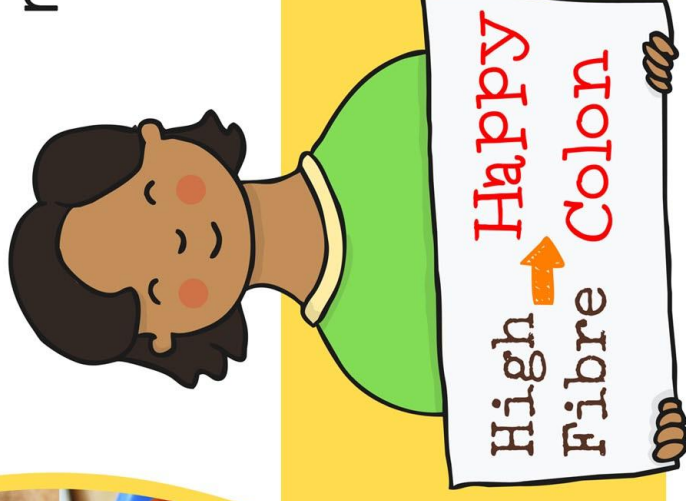


FIBRE for a healthy gut.



Fibre is found in cereals, bread, beans, lentils, fruit, vegetables and bran.

Fibre provides roughage which helps keep food moving through the gut.



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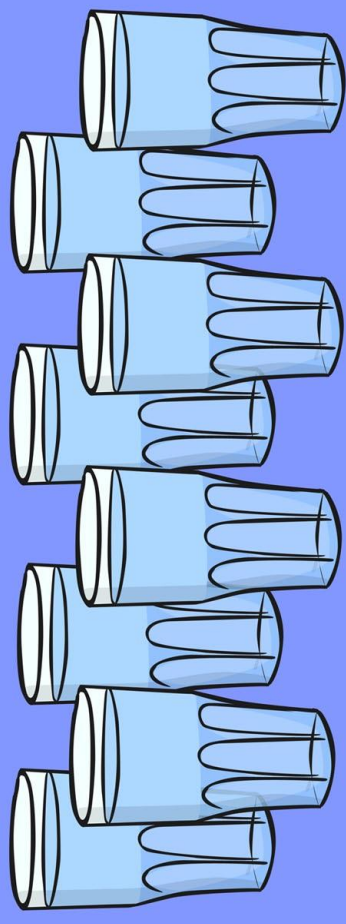
WATER of Life



Water is found in fruit juice, milk and water. It is also found in many foods.

Water is needed for cells and body fluids.

We need to drink 6-8 glasses of water each day.



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Carbohydrates are found in cereals, bread, pasta, rice and potatoes. We need them to be active.



Proteins are found in fish, meat, eggs, beans, pulses and dairy. Proteins are important for growth and help the body repair itself.



Fats are found in butter, oils and nuts. Fats provide energy. They also store energy in the body and insulate it against the cold. Excessive amounts of fat cause weight gain.



Found in salt, milk, liver and vegetables. Small amounts of minerals are required to stay healthy.

NUTRIENTS

What are they good for?



Vitamins are found in dairy, fruit and vegetables. Small amounts of vitamins are needed to stay healthy.



Fibre is found in cereals, bread, beans, lentils, fruit, vegetables and bran. Fibre provides roughage which helps keep food moving through the gut.



Water is found in fruit juice, milk and water. It is also found in many foods. Water is needed for cells and body fluids. We need to drink 6-8 glasses of water each day.

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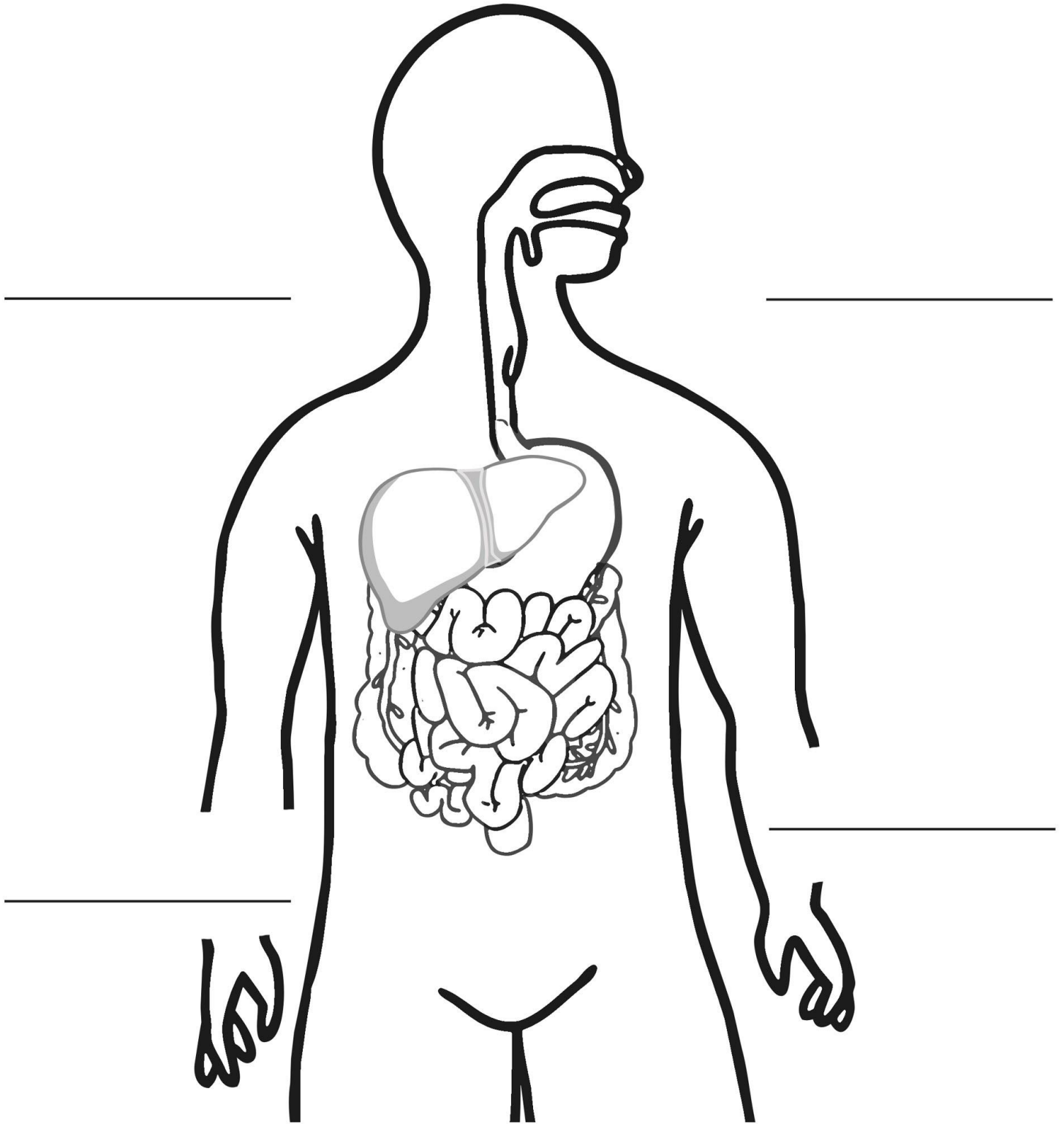


Date _____

Name _____

The Human Digestive System

Label the parts of the digestive system.



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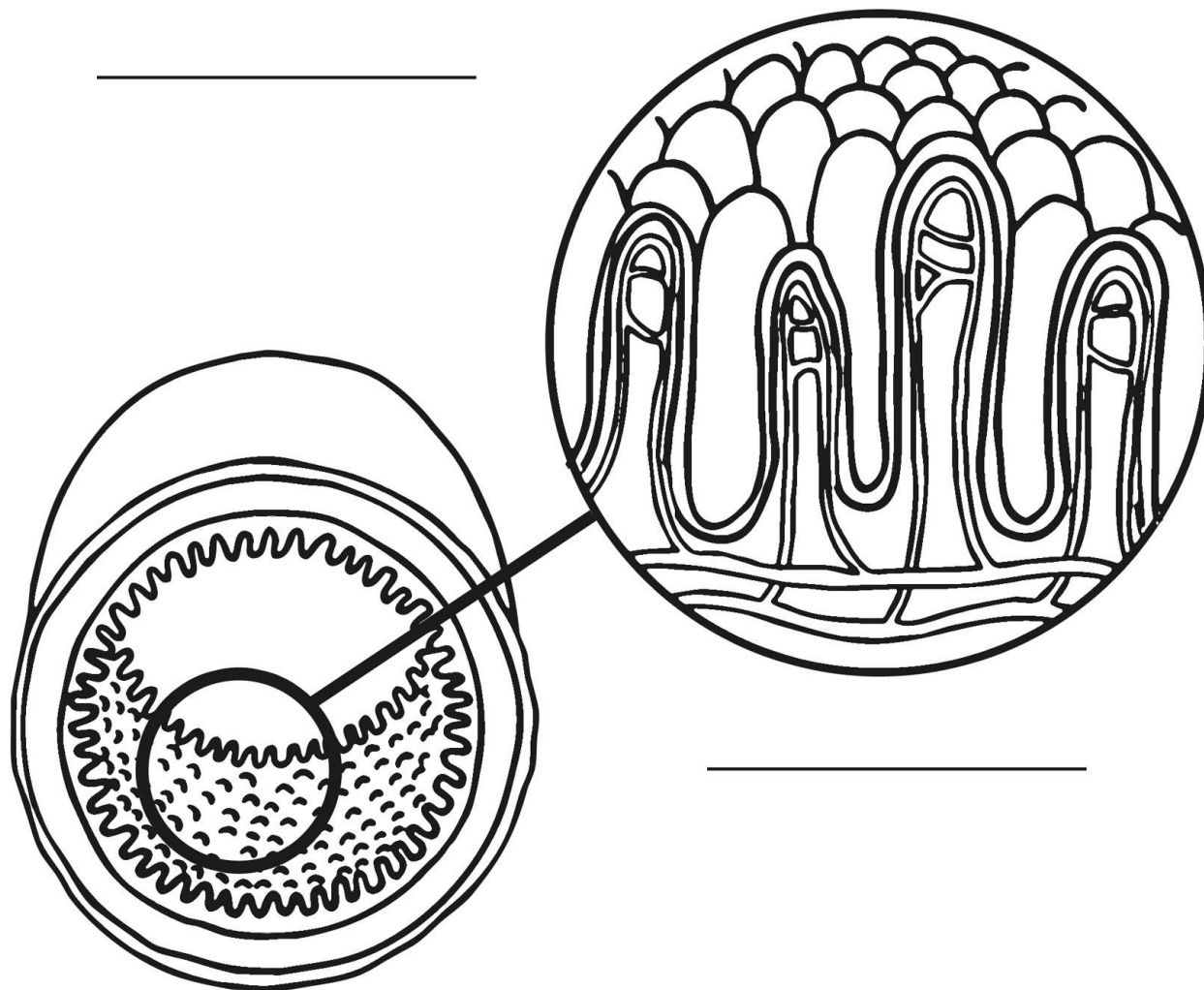
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The Small Intestine



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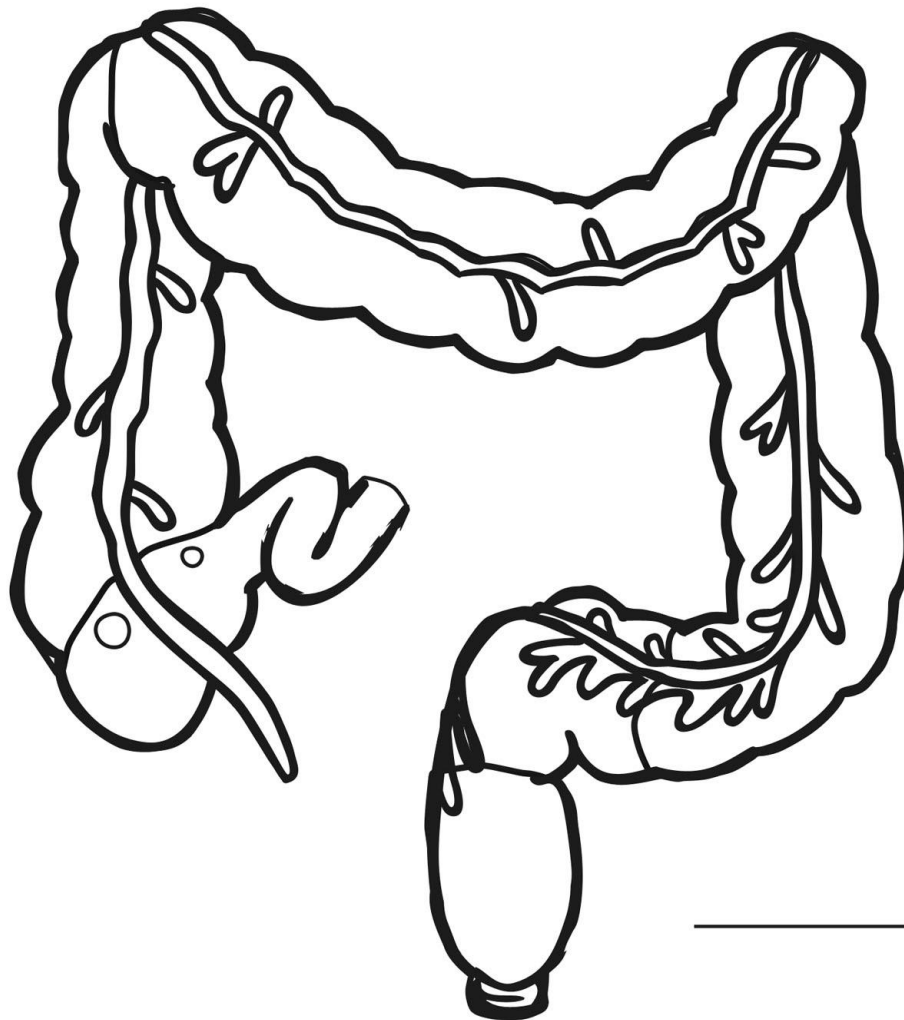


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The Large Intestine

Label the parts of the large intestine.



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Date _____

Name _____

The Urinary System

Label the parts of the urinary system.

