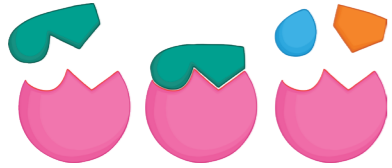


Complete the table below.

Enzyme	Site of Production	Substrate	Products
amylase			glucose
pepsin		protein	
lipase	pancreas		

The diagram below shows the 'lock & key' model of enzyme function. Label the diagram using the following words:

enzyme, active site, substrate, products, enzyme-substrate complex



Describe how to carry out the test for reducing sugars.

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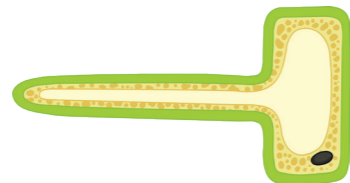


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Describe how this root hair cell is adapted for the efficient uptake of water and mineral ions.




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Place the following structures in order from smallest to largest:

cell, organ, nucleus, tissue, organism

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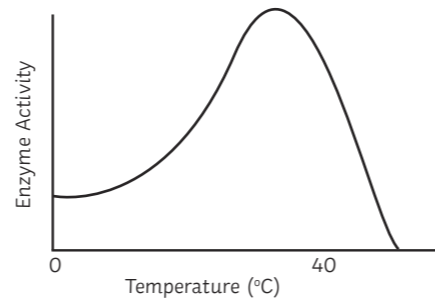


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Use the graph below to describe how temperature affects enzyme function.




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Enzymes are described as being 'specific' to a substrate. What does this mean? Use a labelled diagram to help your explanation.

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Describe how to test for protein

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Bile is made in the liver and stored in the gall bladder. Explain how bile helps digestion.

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Transpiration is:

The movement of water molecules from a high water concentration to a lower water concentration across a partially permeable membrane.

The evaporation and diffusion of water from the leaves of a plant.

The movement of glucose molecules around the plant.

Name 3 factors that affect the rate of transpiration.

- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_

From which part of the human digestive system is nutrients absorbed into the bloodstream?

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Where in the plant is meristem tissue located?

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List 5 important keywords from this unit.

- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_

The xylem tissue is composed of hollow tubes strengthened by lignin. What is the function of xylem tissue?

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Why are enzymes referred to as 'biological catalysts'?

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Describe how to test for starch.

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What is the function of phloem tissue?

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My main areas for improvement in this unit are:

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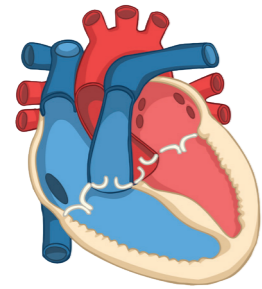


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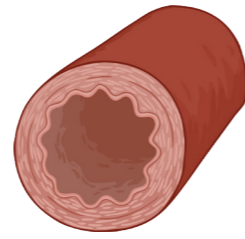


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**a** Label the following blood vessels on the diagram of the heart: aorta, vena cava, pulmonary artery, pulmonary vein.



**d** Describe how the structure of an artery is related to its function.



**h** Why does the left ventricle have a thicker, more muscular wall than the right ventricle?

**i** Name the four main components of the blood and describe their function.

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_
4. \_\_\_\_\_

**n** Describe 3 ways that the lungs are adapted for gaseous exchange.

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_

**b** Label the following parts on the diagram below: trachea, bronchi, bronchiole, alveolus.



**e** In coronary heart disease, layers of fatty material build up inside the coronary arteries. Explain how this can lead to a 'heart attack'.

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**j** What is a 'carcinogen'? Give an example.

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**o** A problem with heart transplants is rejection of the donor heart. What is 'rejection'?

\_\_\_\_\_

\_\_\_\_\_

**f** Stents can be used to treat coronary heart disease. Give one advantage and one disadvantage of using stents.

Advantage

\_\_\_\_\_

\_\_\_\_\_

Disadvantage

\_\_\_\_\_

\_\_\_\_\_

**k** List 5 important keywords from this unit.

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_
4. \_\_\_\_\_
5. \_\_\_\_\_

**p** Name the group of cells that controls the resting heart rate.

\_\_\_\_\_

**c** Describe how smoking tobacco affects:

Adults

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Unborn babies

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**g** Describe 3 lifestyle factors that can impact a person's physical and mental wellbeing.

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_

**l** Explain how an infection with a microorganism could lead to the development of other, non-communicable diseases.

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**r** What is the difference between a benign and a malignant tumour?

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**m** Describe how a faulty heart valve will affect a person's health.

\_\_\_\_\_

**s** My main areas for improvement in this unit are:

\_\_\_\_\_

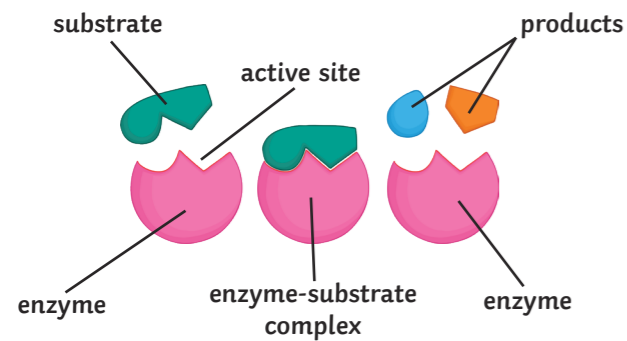
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\_\_\_\_\_

Complete the table below.

Enzyme	Site of Production	Substrate	Products
amylase	salivary glands/ pancreas	starch	maltose/ glucose
pepsin	stomach	protein	amino acids
lipase	pancreas	fats	fatty acids & glycerol

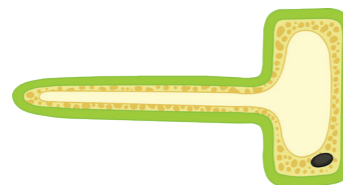
The diagram below shows the 'lock & key' model of enzyme function. Label the diagram using the following words:



Describe how to carry out the test for reducing sugars.

- Place the test sample into a test tube (about 2ml).
- Add an equal amount of Benedicts reagent.
- Heat in a water bath for 5 minutes.
- The colour will change from blue to either green/yellow/red depending on the amount of reducing sugar present.

Describe how this root hair cell is adapted for the efficient uptake of water and mineral ions.



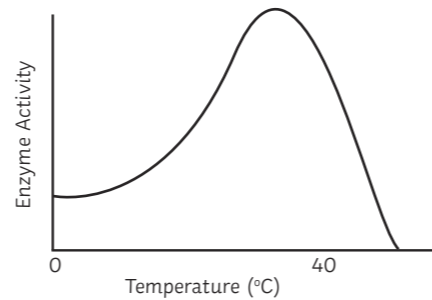
They have a large surface area for the rapid absorption of water and mineral ions from the soil.

Place the following structures in order from smallest to largest:

cell, organ, nucleus, tissue, organism

nucleus, cell, tissue, organ, organism

Use the graph below to describe how temperature affects enzyme function.



Initially, as temperature increases, the rate of enzyme activity also increases, up to 40°C, which is the optimum temperature. After 40°C, as the temperature increases the rate of enzyme activity decreases.

Enzymes are described as being 'specific' to a substrate.

What does this mean? Use a labelled diagram to help your explanation.

A diagram showing active site of enzyme has a complimentary shape to the substrate molecule. The active site of the enzyme has a unique shape, only a substrate with a complimentary shape can fit and bind to form an enzyme-substrate complex.

Describe how to test for protein

- Place the test sample into a test tube (about 2ml)
- Add an equal amount of Biuret reagent and mix.
- The colour will change from blue to purple if protein is present.

Bile is made in the liver and stored in the gall bladder. Explain how bile helps digestion.

Bile neutralises stomach acid to raise the pH so protease enzymes can work.

It also emulsifies fats to give them a larger surface area for lipase to work, which speeds up digestion.

Transpiration is:

The movement of water molecules from a high water concentration to a lower water concentration across a partially permeable membrane.

The evaporation and diffusion of water from the leaves of a plant.

The movement of glucose molecules around the plant.

Name 3 factors that affect the rate of transpiration.

Any 3 from;

Temperature, Light intensity, Air flow or Humidity.

From which part of the human digestive system is nutrients absorbed into the bloodstream?

Small intestine.

Where in the plant is meristem tissue located?

Growing tips of roots and shoots.

List 5 important keywords from this unit.

- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_

Why are enzymes referred to as 'biological catalysts'?

They speed up useful chemical reactions in the body.

The xylem tissue is composed of hollow tubes strengthened by lignin. What is the function of xylem tissue?

To transport water and dissolved minerals from the roots to the stem and the leaves. This is called the transpiration stream.

Describe how to test for starch.

Place the test sample into a test tube. Add a few drops of iodine solution and mix. The colour will change from orange to blue/black if starch is present.

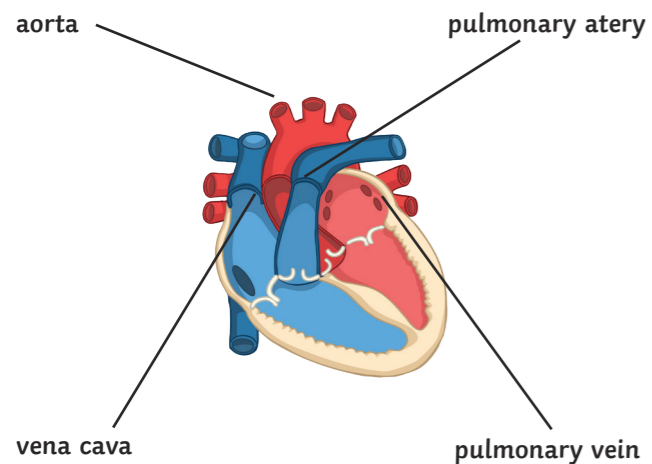
What is the function of phloem tissue?

To transport food substances (dissolved sugars) around the plant. This process is called translocation.

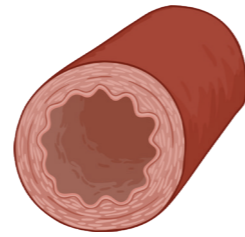
My main areas for improvement in this unit are:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Label the following blood vessels on the diagram of the heart:



Describe how the structure of an artery is related to its function.



Thick layers of muscle for strength and elastic fibres so that they can spring back to help withstand high blood pressure.

Why does the left ventricle have a thicker, more muscular wall than the right ventricle?

The left ventricle has to pump blood at high pressure so that it can reach all body cells. Whereas, the right ventricle only has to pump blood to the lungs.

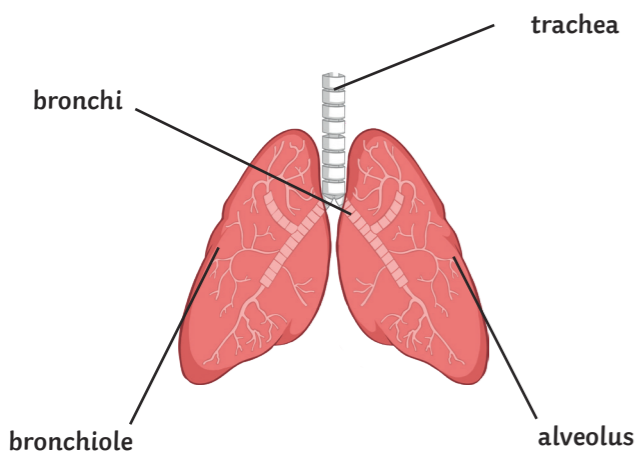
Name the four main components of the blood and describe their function.

1. Red blood cells – transport oxygen.
2. White blood cells – defend against pathogens.
3. Platelets – help to clot the blood.
4. Plasma – liquid part of the blood, carries many substances e.g. glucose, hormones.

Describe 3 ways that the lungs are adapted for gaseous exchange.

Any 3 from: Large surface area, Moist lining, Thin walls or good blood supply.

Label the following parts on the diagram below:



In coronary heart disease, layers of fatty material build up inside the coronary arteries. Explain how this can lead to a 'heart attack'.

The layers of fatty material block the coronary arteries and restrict blood flow to heart muscle cells. This results in a lack of oxygen and the heart muscle cells stop respiring which can lead to a heart attack.

What is a 'carcinogen'? Give an example.

Substance/chemical that causes cancer e.g. the chemicals in cigarette smoke.

A problem with heart transplants is rejection of the donor heart. What is 'rejection'?

When the body's immune system (white blood cells) attacks and destroys the donor heart muscle cells.

Stents can be used to treat coronary heart disease. Give one advantage and one disadvantage of using stents.

Advantage

Patients recover quickly and they are effective for a long time.

Disadvantage

There is a risk of the patient developing a blood clot near the stent, which can lead to a heart attack.

List 5 important keywords from this unit.

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_
4. \_\_\_\_\_
5. \_\_\_\_\_

Name the group of cells that controls the resting heart rate.

Pacemaker

Describe how smoking tobacco affects:

Adults

Can cause lung disease, including cancer, and cardiovascular disease.

Unborn babies

Can result in low birth weight and premature birth.

Describe 3 lifestyle factors that can impact a person's physical and mental wellbeing.

Any 3 from: Diet, exercise, stress, smoking, drinking alcohol.

Explain how an infection with a microorganism could lead to the development of other, non-communicable diseases.

Infection with some viruses can lead to the development of cancer (e.g. HPV infection and cervical cancer). Also, infection with pathogens can sometimes trigger allergic reactions and worsen asthma.

What is the difference between a benign and a malignant tumour?

A benign tumour remains in one place and doesn't invade other tissues in the body – not usually dangerous. A malignant tumour spreads to other parts of the body when cells break off and travel in the bloodstream to form secondary tumours.

Describe how a faulty heart valve will affect a person's health.

Breathlessness, fatigue, tiredness.

My main areas for improvement in this unit are:

\_\_\_\_\_  
\_\_\_\_\_