



Year 8

Biology

Homework

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Name:	Due Date
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Scientific vocabulary	Definition
Organ	Group of different tissues working together to carry out a function
Organ system	A group of organs working together to perform a function
Red blood cell	An animal cell that transports oxygen around the body
Circulatory system	Organ system that transports substances around the body
Ventricles	Pump the blood out of the heart to the lungs or around the body
Atria	Blood is collected here when it enters the heart
Valves	To prevent blood from flowing backwards in the heart

Q1: Which organ system is the heart part of? (1 mark)

Tick **one** box.

Breathing system

Circulatory system

Digestive system

Excretory system

Q2. The heart is part of the circulatory system.

Name **one** substance transported by the blood in the circulatory system.

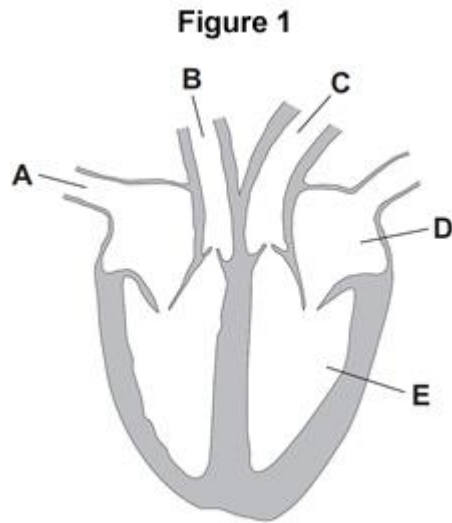
(1)

Q3. What is the main type of tissue in the heart wall?

(1)



Q4. **Figure 1** shows the human heart.



- (i) Which blood vessel, **A**, **B** or **C**, takes blood to the lungs?

(1)

- (ii) Name parts **D** and **E** shown in **Figure 1**.

D _____

E _____

(2)



Name:	Due Date
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Anagram	Definition	Scientific vocabulary word
Ogrna	Group of different _____ working together to carry out a _____.	
Ongra Steyms	A group of _____ working together to perform a function	
Rde Bdool Clel	An _____ cell that transports _____ around the body	
Cularyitroc Styems	Organ system that transports _____ around the body	
Vescltirne	Pump the _____ out of the heart to the _____ or around the body	
Ariat	Blood is collected here when it enters the _____	
Velavs	To prevent the blood from flowing _____ in the heart	

New Words

Scientific vocabulary	Definition
Arteries	A blood vessel that carries blood away from the heart
Veins	A blood vessel that transports blood towards the heart
Capillaries	A tiny blood vessel with thin walls to allow for the transfer of substances between the blood and tissues

Q1. Draw a ring around **one** word to answer each of the following questions.

(i) Which type of blood vessel carries blood out of the heart?

artery capillary vein

(1)

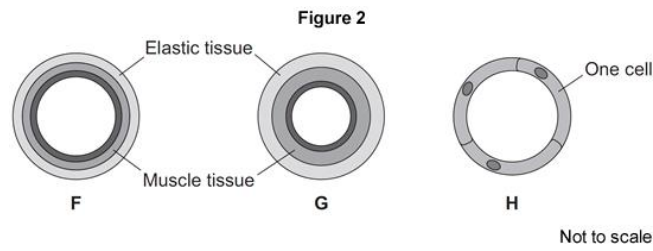
(ii) Which type of blood vessel allows substances to enter and leave the blood?

artery capillary vein

(1)



Q2. Figure 2 shows three types of blood vessel, **F**, **G** and **H**.



(i) What type of blood vessel is **F**?

Tick (✓) **one** box.

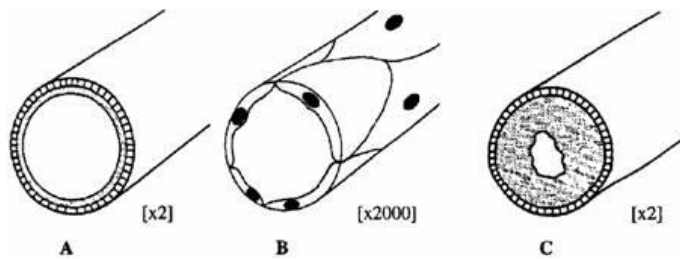
an artery

a capillary

a vein

(1)

Q3. The drawings show the structure of three types of blood vessel, **A**, **B** and **C**. They are drawn to the scales indicated.



(a) Name the **three** types of blood vessel.

A _____

B _____

C _____

(3)

(b) Describe the job of blood vessel **B**.

(2)



Name:	Due Date
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Anagram	Definition	Scientific vocabulary word
Vines	A blood vessel that transports blood _____ the heart	
Aertiers	A blood vessel that carries blood _____ from the heart	
Cillpaires	A tiny blood vessel with _____ walls to allow for the transfer of substance between the _____ and tissues	

New Words

Scientific vocabulary	Definition
Nutrients	Essential substance that your body needs to survive, provided by food.
Food test	Chemical test to detect the presence of nutrients in a food.
Carbohydrate	Nutrient that supplies the body's main source of energy. There are two types: simple (sugars) and complex (starch).
Protein	Nutrient your body uses to build new tissue for growth and repair. Sources are meat, fish, eggs, dairy products, beans, nuts, and seeds.
Vitamin	Essential nutrients needed in small amounts to keep you healthy.
Lipid	Nutrient that provides a store of energy and insulate the body. Found in butter, milk, eggs, nuts.

q1. Table 1 gives information about 100 g of five different foods.

food	energy per 100 g of food (kJ)	nutrients per 100 g of each food			
		protein (g)	fat (g)	carbohydrate (g)	calcium (mg)
banana	403	1.2	0.3	23.2	6
wholemeal bread	914	9.2	2.5	41.6	54
butter	3031	0.5	81.7	0	15
cheese	1708	22.5	34.4	0.1	720
milk	275	3.2	3.9	4.8	115



(a) Look at **table 1**.



- (i) Which of the four **nutrients**, protein, fat, carbohydrate or calcium, provides most of the energy in the cheese?

.....
..

- (ii) Which of the four **nutrients** provides most of the energy in the wholemeal bread?

.....
..

- (iii) Which of the four **nutrients** is needed for growth and repair?

.....
..

3 marks

Q2. The following are important parts of a balanced diet.

carbohydrates

proteins

fats

vitamins

water

A pupil has a sweet, juicy orange to eat.

(a) Complete the following sentences using words from the list above.

- (i) An orange is a good source of

..... and

2 marks

- (ii) An orange is a poor source of

..... and

2 marks



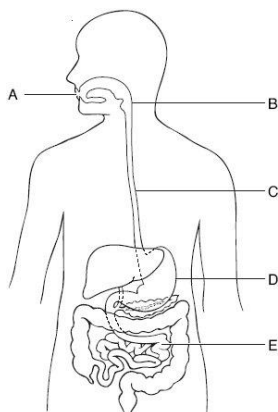
Name:	Due Date:
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Anagram	Definition	Scientific vocabulary word
Nientsurt	Essential substance that your body needs to _____, provided by food	
Fodo tset	Chemical test to _____ the presence of particular nutrients in a food.	
Coyhdareatb	Nutrient that supplies the body's main source of _____. There are ___ types: simple (sugars) and complex (starch).	
Pinetro	Nutrient your body uses to build new _____ for growth and _____. Sources are meat, fish, eggs, dairy products, beans, nuts, and seeds.	
Vimatin	Essential nutrients needed _____ amounts to keep you healthy.	
Lidpi	Nutrient that provides a _____ of energy and _____ the body. Found in butter, milk, eggs, nuts.	

New Words

Scientific vocabulary	Definition
Digestion	Process in which large molecules are broken down into smaller molecules.
Digestive system	Group of organs that work together to break down food.
Small intestine	Upper part of the intestine where digestion is completed and nutrients are absorbed by the blood.
Large intestine	Lower part of the intestine from which water is absorbed and where faeces (solid waste of undigested food) are formed.
Malnourishment	Eating the wrong amount or wrong types of food
Balanced diet	Eating food containing the right nutrients in the correct amounts

Q1. The diagram below shows the digestive system.



(i) Give the letter which labels the stomach.

.....

1 mark

(ii) Give the letter which labels the small intestine.

.....

1 mark

8x2

Q2. The table below shows what four people ate for lunch.

name	lunch
Jon	chicken and salad
Nadia	cheeseburger and chips
Clare	lemonade and a jam doughnut
Zak	mushroom soup and an orange

(i) Whose lunch had the most sugar in it?

.....

1 mark

(ii) Whose lunch had the most fat in it?

.....

1 mark

(iii) Eating too much fat is bad for you.
Give **one** reason for this.

.....

1
mark

Q3. Which organ in the list below can be harmed if we eat too much fat?
Tick the correct box.

brain

heart

lung

ribs

1 mark



Name:	Due Date
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Anagram	Definition	Scientific vocabulary word
Desgition	Process in which large molecules are _____ down into smaller molecules.	
Desgtive setysm	Group of _____ that work together to break down food.	
Salml itneinste	Upper part of the intestine where digestion is completed and nutrients are _____ by the blood.	
Legar itneinset	Lower part of the intestine from which _____ is absorbed and where faeces (solid waste of undigested food) are _____.	
Molnurishnetm	Eating the wrong _____ or wrong _____ of food	
Belanacd deti	Eating food containing the _____ nutrients in the correct amounts	

New Words

Scientific vocabulary	Definition
Addiction	A need to keep taking a drug in order to feel normal.
Alcoholic	A person who is addicted to alcohol.
Drug	Chemical substance that affects the way your body works.
Passive smoking	Breathing in other people’s smoke.
Enzyme	Substances that speed up the chemical reactions of digestion resulting in large molecules being broken into small molecules.

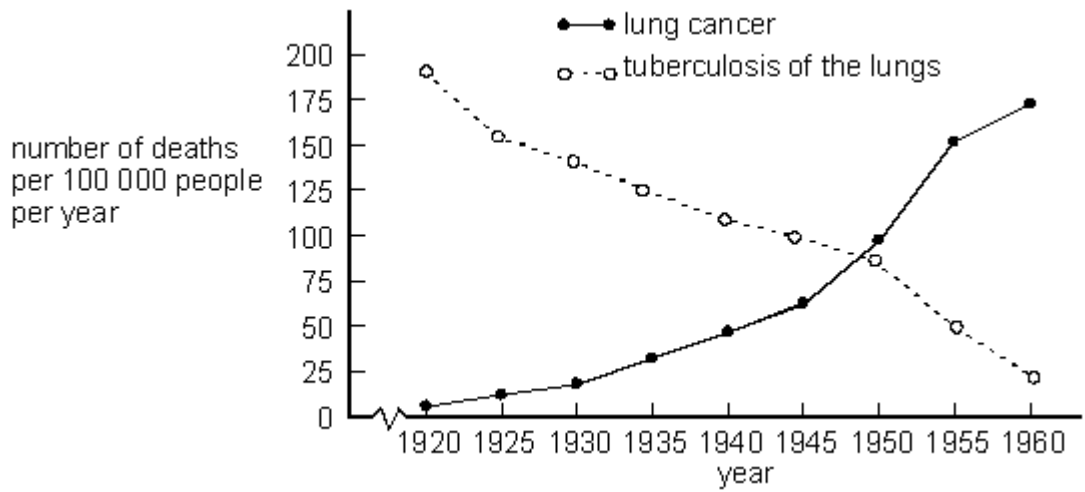
Q1. Enzymes are involved in the process of photosynthesis. If the temperature is too high, the enzymes stop working and photosynthesis stops.

Why do the enzymes stop working at high temperatures?

.....

1 mark

Q2. The graphs show the number of deaths from lung cancer and from tuberculosis of the lungs, in England and Wales, between 1920 and 1960.



(Data obtained from Key Science Biology, Applin; published by Stanley Thornes 1994)

(i) Between which two dates on the graph did the number of deaths from lung cancer rise fastest?

..... and

1 mark

(ii) Lung cancer may be caused by cigarette smoking.

What substance in cigarette smoke causes lung cancer?

.....

1 mark

Q3. Athletes should **not** drink alcohol before taking part in sport.

Give **two** effects of alcohol which would affect an athlete's performance.

1.

.....

1 mark

2.

.....

1 mark



Name:	Due Date
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Anagram	Definition	Scientific vocabulary word
Aticddion	A need to keep taking a ____ in order to feel normal.	
Achocliol	A person who is _____ to alcohol.	
Durg	_____ substance that affects the way your body works	
Pavisse simkong	Breathing in other people's _____.	
Ezymnen	Eating the wrong _____ or wrong _____ of food	
Belanacd deti	Substances that _____ up the chemical reactions of digestion resulting in _____ molecules being broken into small molecules.	

New Words

Scientific vocabulary	Definition
Food chain	Part of a food web, starting with a producer and ending with a top predator. This diagram shows the transfer of energy between organisms.
Food web	A diagram that shows how food chains in an ecosystem are linked.
Ecosystem	The living things in a given area and their non-living environment.
Habitat	The area in which an organism lives.
Population	Group of the same species living in an area.

Q1. The food chain below shows the feeding relationships between some organisms living in the Arctic.

plants → deer → wolves

(a) Which organism in the food chain is a predator?

.....

1 mark

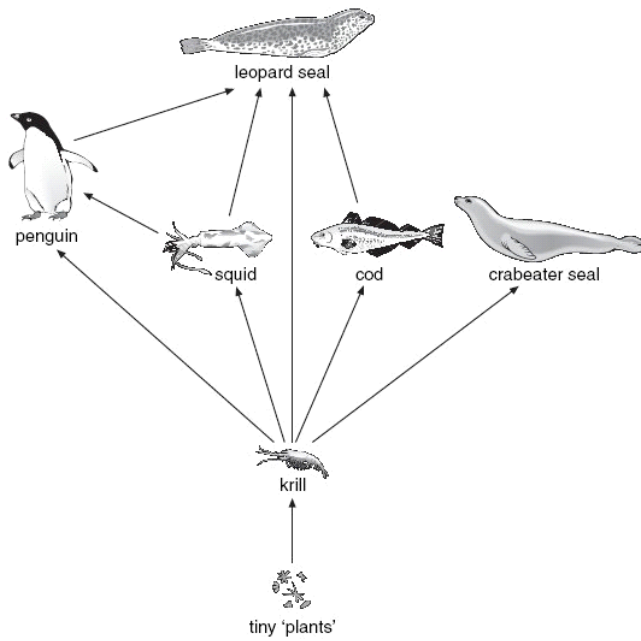
Q2. Clearing forests causes some species to become *extinct*.

(i) What is meant by *extinct*?

.....

1 mark

Q3. The drawing below shows part of a food web in the sea around Antarctica.



not to scale

(a) From the food web, give the names of **two** animals that **only** eat krill.

1.

1 mark

2.

1 mark

(b) (i) Which word describes the plants in a food web?
Tick the correct box.

producers	<input type="checkbox"/>	predators	<input type="checkbox"/>
herbivores	<input type="checkbox"/>	carnivores	<input type="checkbox"/>

1 mark

(ii) Krill are small animals that eat tiny plants.

Which word describes krill in the food web?
Tick the correct box.

producers	<input type="checkbox"/>	predators	<input type="checkbox"/>
herbivores	<input type="checkbox"/>	carnivores	<input type="checkbox"/>

1 mark



Name:	Due Date
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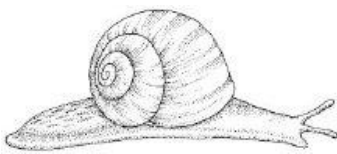
Anagram	Definition	Scientific vocabulary word
Fodo cihan	Part of a food web, starting with a _____ and ending with a top predator. This diagram shows the transfer of _____ between organisms.	
Fodo wbe	A diagram that shows how food chains in an _____ are linked.	
Etoscyme	The living things in a given _____ and their non-living environment.	
Hitabat	The area in which an _____ lives.	
Papluotion	Group of the _____ species living in an area.	

New Words

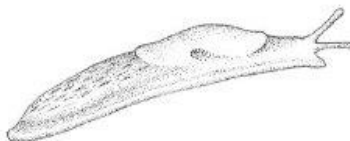
Scientific vocabulary	Definition
Competition	Competing with other organisms for resources
Biodiversity	A measure of the variety of different species living in a habitat
Sampling techniques	Using a variety of techniques to find out how many different species or a certain species live in a specific area.
Quadrats	A moveable grid which allows an area to be marked off so that plants can be identified and counted.

Q1. The drawings below show a snail and a slug.

snail



slug



(a) Look at the drawings above.

(i) Give one way the snail and slug are **different** from each other.

.....

1 mark

(ii) Give one way the snail and slug are the **same**.

.....

1 mark

Q2. Barn owls build nests in farm buildings. Mice eat wheat seeds.

- (i) Many old farm buildings have been knocked down so that houses can be built on the farmland.

Give **one** reason why this has caused the number of barn owls to decrease.

.....
.....

- (ii) Suggest **one** reason why farmers like to have barn owls on their farms.

.....

3 marks

Q3. A cod eats other animals which live in the sea.

What is the name for an animal which catches and eats other animals?

Tick the correct box.

herbivore	<input type="checkbox"/>
predator	<input type="checkbox"/>
prey	<input type="checkbox"/>
producer	<input type="checkbox"/>

1 mark

Q4. Ospreys can live in places where the weather is sometimes cold.



- (a) Explain how an osprey's feathers insulate it in cold weather.

.....
.....

1 mark



Name:	Due Date
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Anagram	Definition	Scientific vocabulary word
Ceitptomn	Competing with other _____ for resources	
Boidievritys	A measure of the _____ of different species living in a habitat	
Sipmalng nitechquies	Using a variety of techniques to find out how ____ different _____ or a certain species live in a specific area.	
Qaurdats	A moveable ____ which allows an area to be marked off so that plants can be identified and _____.	

New Words

Scientific vocabulary	Definition
DNA	A molecule found in the nucleus of cells that contains genetic information.
Chromosome	Thread-like structure containing tightly coiled DNA. It contains many genes.
Allele	Different forms of a gene.
Gene	A section of DNA that determines an inherited characteristic.
Mutation	Change to DNA that can cause disease.

Q1. In the mid-20th century, other scientists identified the chemical substance that makes up genetic material.

What is the name of the chemical substance that makes up genetic material?

Tick **one** box.

Carbohydrate

DNA

Lipid

Protein

(1)

Q2. DNA is the genetic material of human cells.

Figure 1 shows the structure of part of a DNA molecule.

Figure 1



Describe where DNA is found in a human cell.

(2)

Q3. What are **alleles**?

(1)

Q4. A complete DNA molecule is made of two strands twisted around each other.

What scientific term describes this structure?

(1)



Name:	Due Date
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Anagram	Definition	Scientific vocabulary word
NAD	A molecule found in the nucleus of cells that contains _____ information.	
Ceromomos	Thread-like structure containing tightly coiled _____. It contains many _____.	
Aeilell	Different forms of a _____.	
Gnee	A section of DNA that determines an _____ characteristic.	
Matuitor	Change to DNA that can cause _____.	

New Words

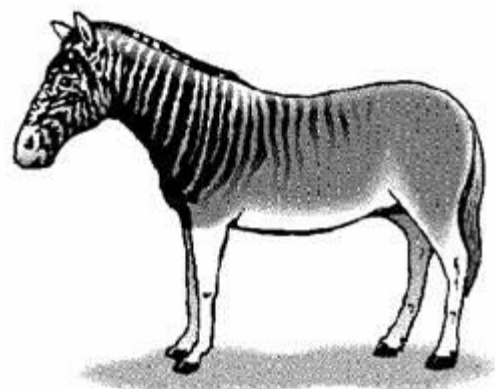
Scientific vocabulary	Definition
Dominant (allele)	A dominant allele will always be expressed if it is present.
Recessive (allele)	A recessive allele will only be expressed if two copies are present.
Selective breeding	Humans breed plants and animals for particular genetic characteristics.
Inherited characteristics	Features that are passed from parents to their offspring.
Gene bank	A store of genetic samples, used for research and to try to prevent extinction.
Evolution	Theory that the animal and plant species living today descended from species that existed in the past.

Q1. The quagga is an extinct animal that lived in Africa. Quaggas belonged to the same group as zebras.

The drawings below show a zebra and a quagga.



Zebra



Quagga

HWK 8B9: Genetics and selective breeding

- (a) Zebras and quaggas used to breed with each other. The offspring contained a combination of both zebra and quagga genes (genetic information).
How were zebra **and** quagga genes passed on from the parents to their offspring?

.....
.....

1 mark

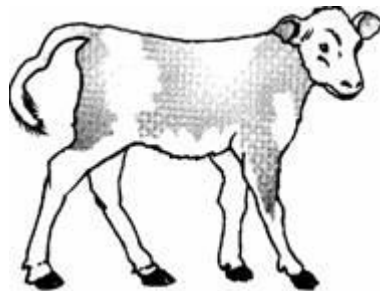
- (b) These days there are some zebras that still show some quagga features. Scientists are using zebras to try to produce quaggas by selective breeding. Describe the steps in this selective breeding process.

.....
.....
.....
.....

3 marks

Q2.

The drawing shows a calf produced by mating a Hereford bull with a Friesian cow.
Cattle bred in this way will produce both high quality meat and a high milk yield.



- (i) What term is used to describe this deliberate mating of two different breeds of animals to produce offspring with particular characteristics?

.....

1 mark

- (ii) Farmers want their cattle to produce high quality meat and a high milk yield. Suggest **one other** characteristic which farmers might want their cattle to have.

.....
.....

1 mark