



Level  
3

Sample!

# Biology

*Student  
Worksheets*

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## A. KINGDOMS

Kingdoms represent a very large group of lifeforms that are all similar in some ways but can be very different from one another in other ways. The five kingdoms that biologists have developed are the Monera Kingdom, the Protist Kingdom, the Fungi Kingdom, the Plant Kingdom, and the Animal Kingdom.

1. Complete the sentences:

sunlight, water, nervous, mushrooms, Bacteria

### MONERA

Monera are single-celled organisms that don't have a nucleus. \_\_\_\_\_ make up the entire kingdom.

### PROTISTS

Protists are mostly single-celled organisms that have a nucleus. They usually live in \_\_\_\_\_. Examples of protists include some algae and amoeba.

### FUNGI

Fungi are usually motionless organisms that absorb nutrients for survival. They include \_\_\_\_\_, moulds, and yeasts.

### PLANTS

Plants contain chlorophyll, a green pigment necessary for photosynthesis, a process in which plants convert energy from \_\_\_\_\_ into food. They include garden flowers, agricultural crops, grasses, shrubs, ferns, mosses, and conifers.

### ANIMALS

Animals are the most complex organisms on Earth. Animals eat food for survival and have \_\_\_\_\_ systems. They are divided into vertebrates and invertebrates and include mammals, amphibians, reptiles, birds and fish.





# THE TREE OF LIFE

1. Read and discuss:

The tree of life is a metaphor which expresses the idea that all life is related by common descent.



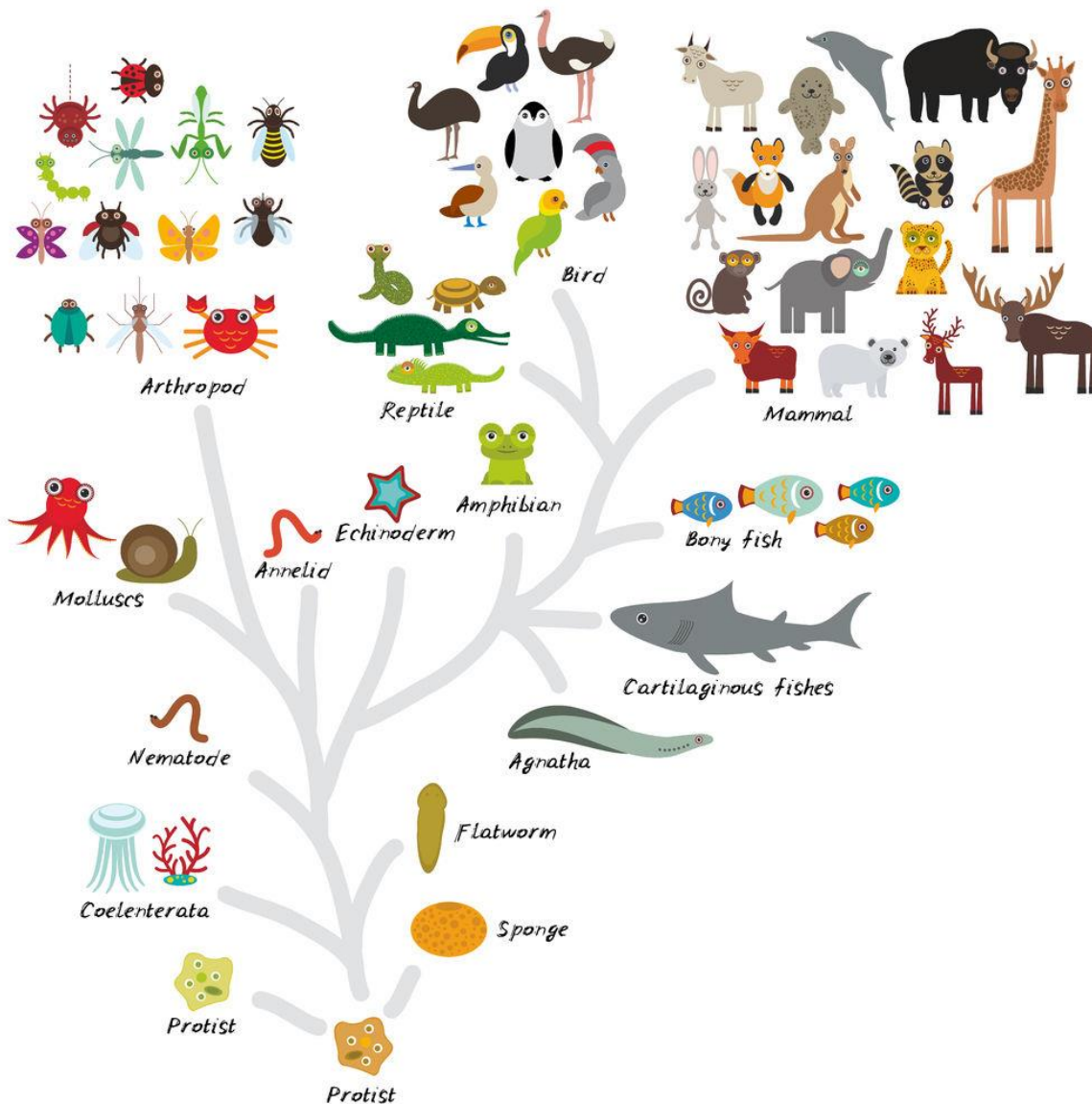
Charles Darwin was the first to use this metaphor in modern biology. The evolutionary tree shows the relationships among various biological groups. The reason why we classify animals in a branching structure is because, according to Charles Darwin, all life shares common ancestry.

The main division we tend to use in categorising animals is whether or not they have a backbone.

The environment plays a major role in natural selection.

At times whole populations or species have died out.

2. As a group, discuss the example below:





## COMMON CHARACTERISTICS OF A RANGE OF LIVING ORGANISMS

1. Complete the sentences about the characteristics of living things:

**move, light, living, growth, proteins, organisms, waste**

*There are seven activities which make organisms different from non-living things. These are the seven characteristics of living organisms.*

### Nutrition

Living things take in materials from their surroundings that they use for growth or to provide energy. Nutrition is the process by which organisms get energy and raw materials from nutrients such as \_\_\_\_\_, carbohydrates and fats.

### Respiration

Respiration is the release of energy from food substances in all \_\_\_\_\_ cells. Living things break down food within their cells to release energy for carrying out the following processes.

### Movement

All living things \_\_\_\_\_. It is very obvious that a leopard moves but what about the thorn tree it sits in? Plants too move in various different ways. The movement may be so slow that it is very difficult to see.

### Excretion

All living things excrete. As a result of the many chemical reactions occurring in cells, they have to get rid of \_\_\_\_\_ products which might poison the cells. Excretion is defined as the removal of toxic materials, the waste products of metabolism and substances in excess from the body of an organism.

### Growth

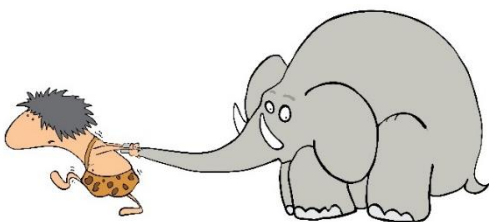
Growth is seen in all living things. It involves using food to produce new cells. The permanent increase in cell number and size is called \_\_\_\_\_.

### Reproduction

All living \_\_\_\_\_ have the ability to produce offspring.

### Sensitivity

All living things are able to sense and respond to stimuli around them such as \_\_\_\_\_, temperature, water, gravity and chemical substances.



Whilst many other things carry out one or more of the above processes, only living organisms possess all of these characteristics.



## A. THE CELL

I. Read the information:

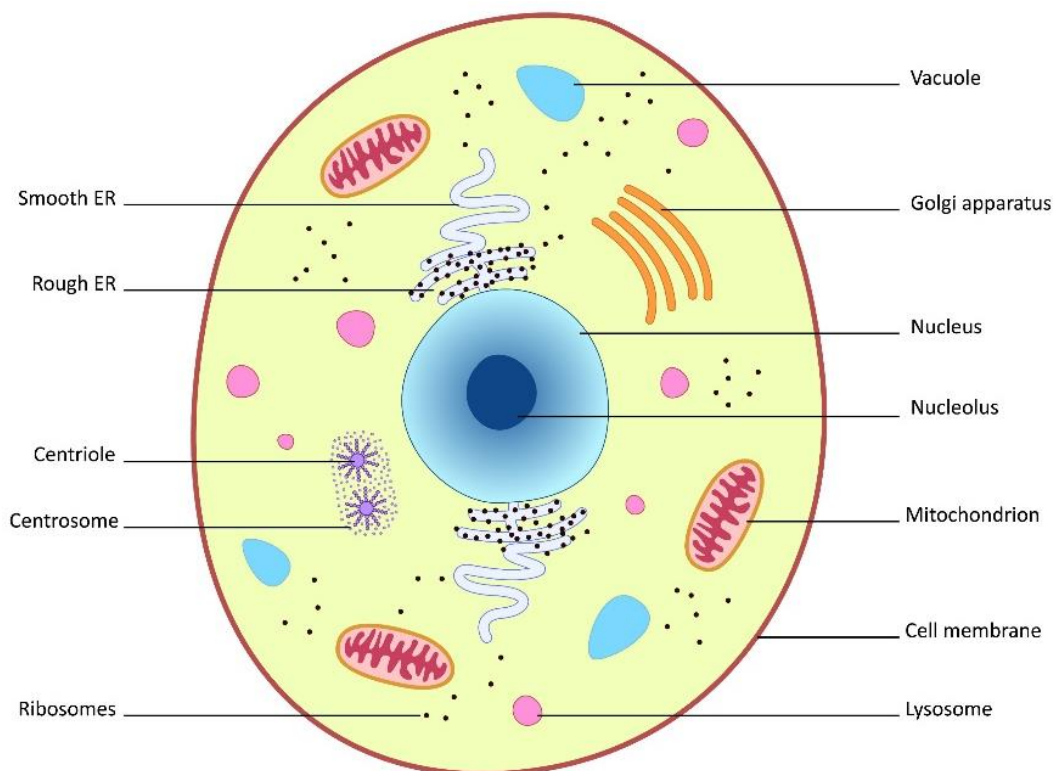
All living organisms on Earth are divided into cells. In biology, the cell is the **basic structure** of organisms. Cells are small compartments that hold the biological equipment necessary to keep an organism alive and successful. Living things may be single-celled or they may be very complex such as a human being.

There are smaller pieces that make up cells, for example, macromolecules and organelles. A protein is an example of a macromolecule while a mitochondrion is an example of an organelle. Cells can also connect to form larger structures. Cells are the basic unit for biology and organisms.

In larger organisms, the main purpose of a cell is to organise. Cells hold a variety of pieces and each cell type has a different purpose. By dividing responsibilities among different groups of cells, it is easier for an organism to survive and grow.

If you were only made of one cell, you would not be able to do too much! You couldn't have a nervous system, no muscles for movement, and using the internet would be out of the question. The trillions of cells in your body make your way of life possible.

The environment outside the cell is separated from the inside of the cell by the **cell membrane**. Inside some cells, parts of the cell stay separate from other parts. These separate parts are called **organelles** (like small organs). They each do different things in the cell. Examples are the nucleus (where DNA is), and mitochondria (where usable energy is created).

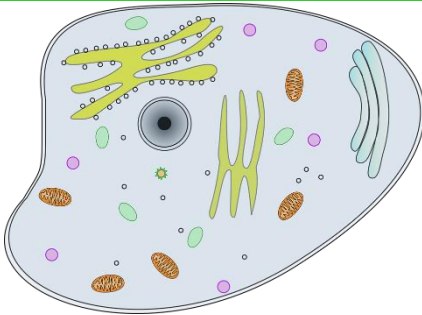




## B. MULTICELLULAR ORGANISMS

1. Complete the paragraph:

**complex, seen, function, cell, organisms**



These organisms have more than one  
..... Very basic multicellular  
..... may have cells of only one type.  
In more ..... multicellular organisms,  
cells are differentiated in order to perform specific

tasks within the organism. Groups of similar cells performing a .....  
are known as a tissue.

All life that can be ..... with the naked eye is multicellular.

2. Write true (T) or false (F):

- a) Multicellular organisms have more than one cell present in them. ....
- b) The larger number of cells means that these organisms are much smaller in size and are very simple, compared to unicellular organisms. ....
- c) Human beings are an example of multicellular organisms. ....
- d) Prokaryotes are multicellular. ....
- e) All the cells work with each other to keep the life form alive, and this leads to a variety of complex functions occurring at the same time. ....
- f) An example of a multicellular organism is an amoeba. ....
- g) Cells are the primary life forces and no organism can be alive without the presence of cells in them. ....



**Research**

Look at multicellular organisms online. Also look for videos on YouTube.



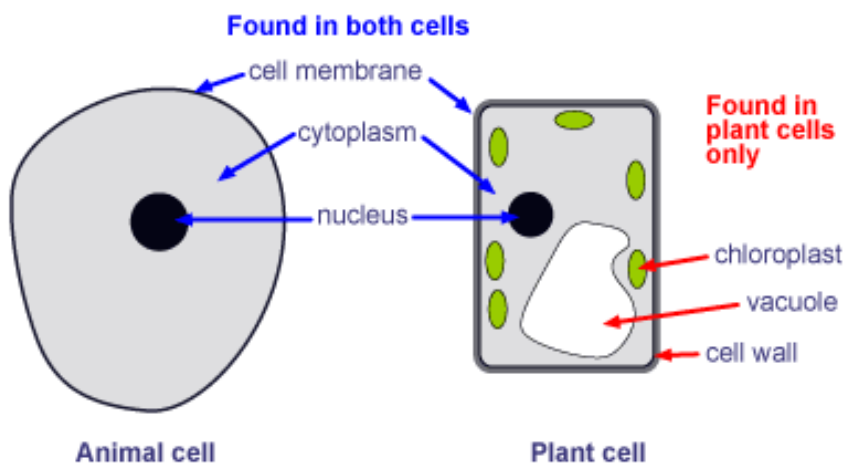
## C. DIFFERENCE BETWEEN PLANT CELLS AND ANIMAL CELLS

1. Read the information:

- Animal cells do not have a cell wall or chloroplasts but plant cells do.
- Animal cells are round and irregular in shape but plants cells are rectangular and have a fixed shape.
- Animal cells contain lysosomes which are absent in plant cells.
- Animal cells have one or more small vacuoles but plant cells have only one big vacuole.

2. Research! Complete the table. Find information online.

	ANIMAL CELL	PLANT CELL
Cell wall		Present (formed of cellulose)
Shape	Round (irregular shape)	
Vacuole		One, large central vacuole taking up to 90% of cell volume.
Chloroplast	Absent	
Cytoplasm	Present	Present
Ribosomes		Present
Mitochondria	Present	
Plastids		Present
Golgi Apparatus	Present	Present
Plasma Membrane		Cell wall and a cell membrane
Nucleus	Present	







## BACTERIA

1. Read the information and answer the questions.



We've probably all experienced a situation where some of our food has gone bad.

Why does food go bad?

It's because of bacteria and fungi. A mushroom is a type of fungi, a type that's actually good to eat. Other types of fungi can be poisonous and very bad for your health.

Bacteria are tiny and you need a powerful microscope to see them. Some bacteria can make you sick so it's often a good idea to avoid dangerous bacteria when you can. Although a lot of bacteria can be harmful, other types are used to help us make foods like cheese and yoghurt.

Perhaps the most important thing fungi and bacteria do are to make things rot, returning all the nutrients back to the earth. Without the help of bacteria and fungi, most of our rubbish would be extremely difficult to get rid of, piling up constantly and leaving a bad smell too.

a) What food have you seen that went bad?

-----

b) How did you know the food was bad?

-----

c) What makes food go bad?

-----

d) In which way can some bacteria be harmful?

-----

e) How do fungi and bacteria help when making things rot?

-----

f) Can you always see when food has gone bad? Explain.

-----

\*There are examples of bacteria under the microscope in Appendix 11.



## BREAD MOULD EXPERIMENT



### Caution!

If you are allergic to mould, then avoid performing this experiment. All students should use a mask and gloves for safety.

I. Carry out this experiment in pairs or your group:

**Purpose:** To study the growth of mould on bread samples

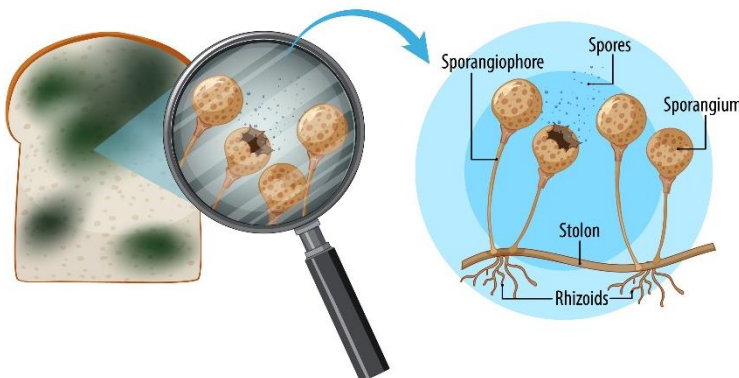
**Materials:** 5 slices of bread, 5 transparent sealable bags, gloves, a mask, sticky labels, a marker, magnifying glass, 5 - 7 cotton swabs, a tablespoon, lemon juice/water/apple juice/salt/sugar (at least two of these items are required)

### Procedure:

Work on 5 samples of breads rather than just one.

- Take the cotton swabs and run them over areas which have dust, like under a table, on surfaces, etc.
- Then rub the dust from the cotton swab over the first bread slice.
- Repeat steps 2 for the other four bread slices.
- Seal three bread slices inside three transparent sealable bags.
- Put stickers on the three bags and write down using a marker on them.
- On the first sticker write "Sample #1 - Dark Closet"; on second write "Sample #2 - Fridge", and on the third write "Sample #3 - Under Light".
- So, keep the first sample in a dark closet, second in a corner of the fridge where it doesn't get disturbed, and the third one in an area which is most of the time brightly lit.
- Now, take the remaining two samples. Before you seal them in the bags and mark them with stickers add one of the above mentioned five items to them. For example, on the fourth bread sample you can add some salt, while on the fifth you can add 2 tablespoons of water. Keep these two sample in a place where they don't get disturbed.
- Observe the five bread samples every alternate day if possible at a fixed time of the day, say 2 pm.

### Structure and Physiology of Bread Mould



J. Note down your observations in a table. You can note down their physical appearance like colour, shape, amount of growth per day, texture, etc.

K. Observe the mould under a microscope.

L. If possible, take photographs and include with your portfolio.



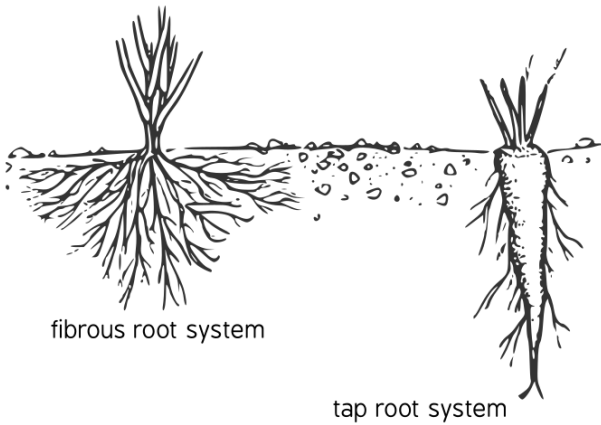
1. Complete the sentences:

water, carrots, soil, Roots, anchor, germination



**Roots**

- a) Roots are the part of a plant that are buried in the \_\_\_\_\_.
- b) They grow out of the seeds during \_\_\_\_\_.
- c) \_\_\_\_\_ perform very important tasks.
- d) Roots absorb the \_\_\_\_\_ and the necessary nutrients and send them to different parts of the plant.
- e) Roots \_\_\_\_\_ the plant in the ground.
- f) Some plants store the food in their roots, for example, \_\_\_\_\_ and potatoes.



4. What kind of root does this plant have? →

[Empty box for answer]



## S. GERMINATION EXPERIMENT



### Experiment

1. Take part in this experiment in your group:

Germination is the awakening of the dormant seed to active life and growth.

### The experiment

- To demonstrate how to germinate a seed without using compost or light, by giving them warmth and moisture.

### The purpose

- To become familiar with the different actively growing parts of a germinating bean seed.
- To demonstrate that a seed will germinate without light if it is kept warm and moist.

### What you need

- Soaked beans (soak overnight)
- Paper towels / tissue • Large plates, one for each group
- Pen and labels • Water • Sunny or south-facing windowsill • A warm dark place, e.g. an airing cupboard or a warm place in the room near a radiator - but ensure that seeds are covered to create darkness.



### What to do

1. Split the class into two groups • 1st group will germinate their seed on a warm south-facing windowsill • 2nd group will germinate their seed in a warm dark place e.g. an airing cupboard or warm room, with the plate covered with dark material.
2. Place wet tissue on each large plate, covering the whole plate.
3. Each student can be given a bean seed to place on a plate. Give a good spacing between each seed.
4. Students label the plate with the date and their name.
5. Place the plates in their appropriate places.
6. Check each day / often as possible to ensure tissue is kept moist and whether there are any changes to the seeds.
7. Keep a record at the same time every day to note any changes that are taking place.
8. Each person should compare notes after one week.

### Vocabulary

radicle, root, plumule, shoot, dicotyledon seeds e.g. beans and peas, side-shoots, root hairs



2. Fill in the observation form:

**OBSERVATION FORM**

Scientist \_\_\_\_\_ Date \_\_\_\_\_

Subject/Topic \_\_\_\_\_

Procedure - This is what I will do.

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

Prediction - This is what I think will happen.

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

Observation - This is what I saw happen.

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

Evaluation - This is why I think it happened, and this is what I learned.

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



You can also use the Experiment Template in Appendix 6.



## ASSESSMENT BRIEF 3

Course:	Biology
Course Code:	3N0609
Assessment:	Collection of Work
Title:	<b>SYSTEMS IN THE HUMAN BODY</b>
Weighting:	Collection of Work 100%,

### Guidelines:



You will be expected to:

1. Identify the main components and functions of the human digestive system
2. Outline the principles of a balanced diet as illustrated in the food pyramid to include carbohydrates, fats, proteins, vitamins, minerals and water
3. Calculate the energy values of a selection of food products that make up a typical daily diet
4. Describe the main components and functions of the human circulatory system
5. Identify the main elements and functions of the human skeletal and muscular system to include the sensory and reproductive systems.
6. Demonstrate the application of communications, team working and quality awareness.

### Assessment criteria:

- Exercises and tasks must be complete and correct.
- Use the vocabulary of biology, looking up any that you do not know.
- Describe and label the digestive system and its stages.
- Show an understanding of the importance of healthy eating.
- Describe the principles of healthy eating, to include: the healthy eating plate / food pyramid, the major food groups, some healthy eating options, etc.
- Read food labels to investigate the nutritional facts.
- Explain the components and functions of the human circulatory system, to include the composition of blood and the function of the heart.
- Describe the function of the human skeletal and muscular system, to include: composition of bones, joints, what muscles do and types of muscle.
- Describe the sensory and reproductive systems, to include taking part in sensory experiments.



- Take part in pair / group work as necessary, demonstrating good communications, team working and quality awareness.
- Discussions may be recorded.
- Photographic and/or video evidence may be required.

Submission date: \_\_\_\_\_

Declaration of Authenticity: I confirm that this is my own original work.

Signed: \_\_\_\_\_

Date: \_\_\_\_\_



# A. HUMAN DIGESTION

A. Read the information and discuss:

As humans, we need energy to survive. How do we get this energy? How is food turned into energy once it enters the body?

This process of turning food into energy is called digestion.

Digestion begins in the mouth. We chew our food into smaller pieces before swallowing. Our saliva can also begin the process of breaking down simpler elements such as glucose. Food is then transported via the oesophagus to the stomach.

Our stomach contains acid that begins breaking down the food. The stomach also churns to aid digestion.

Once food has been sufficiently broken down here, it is then transported into the small intestine.

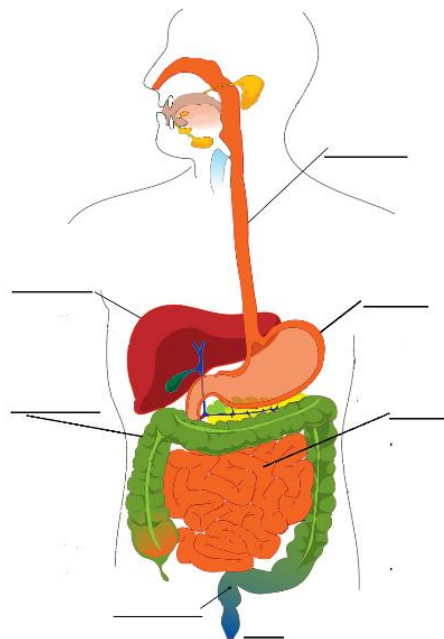
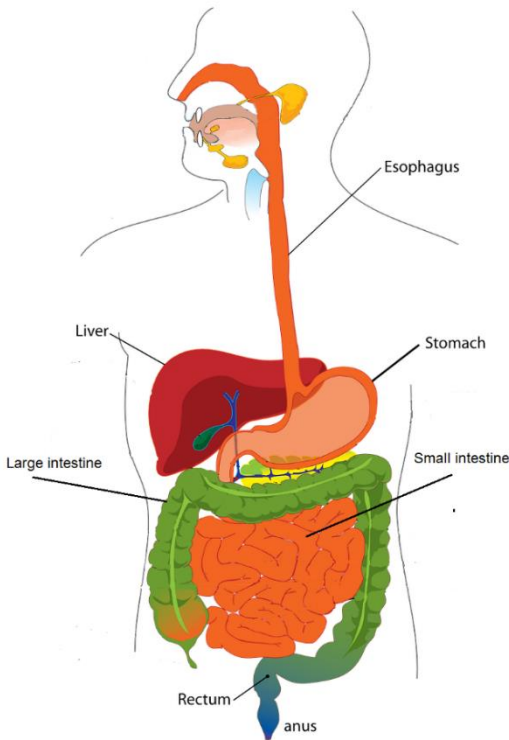
This is where energy and nutrients are absorbed though the lining of the small intestine to be distributed throughout our body. This is also where water is absorbed.

The large intestine is the last place our body has to absorb any water or nutrients.

After this it is sent to the rectum in

preparation to be excreted from the body.

B. Label the diagram:







## B. THE MAJOR FOOD GROUPS

1. Unscramble the words in each sentence.

### Grains

- a) This includes foods made from **eacrle** \_\_\_\_\_ grains including wheat, rice, rye, oats, **ronc**, and barley.
- b) Wholegrain varieties should be chosen where possible because they contain more **ribef** \_\_\_\_\_ and other nutrients than the more refined versions (e.g. white bread).
- c) Foods in the grains group give our bodies and our brains **rgeeny** \_\_\_\_\_ we need to move and think.
- d) This group provides carbohydrate and protein, as well as fibre and many **avmtniis** \_\_\_\_\_ and minerals including folate, thiamine, riboflavin, niacin and **roni** \_\_\_\_\_.

2. Identify the healthy grains:

oatmeal, brown rice, buckwheat, barley, whole-wheat bread, pasta





3. Read the information:

**Meat, fish, poultry, eggs, nuts, legumes**

This group incorporates all varieties of meat, poultry and fish, as well as eggs, nuts, seeds and legumes.

This group contains foods that provide protein, iron, niacin and vitamin B12.

Red meats are also an excellent source of iron and zinc, and so consumption of red meat is recommended at 3-4 serves a week to satisfy our requirements.

Legumes are included in the meat category even though they are vegetables, as they are a good source of protein and iron and, along with eggs and nuts, are considered a meat alternative for vegetarians.

Foods from this food group fall into 6 categories: lean meats, poultry, fish and seafood, eggs, nuts and seeds and legumes/beans.

4. Tick examples of this group below:

- fish
- pumpkin seeds
- clams
- macadamia
- potato
- beef
- pine nuts
- rice
- duck eggs
- jam
- peanut
- crab
- chickpeas
- turkey

- cherry
- butter
- nut spreads
- lamb
- veal
- banana
- lobster
- walnut
- pork
- kangaroo
- lentils
- scallops
- sesame seeds
- beans
- butternut
- oats

- cashew
- oysters
- duck
- sausages
- split peas
- sunflower seeds
- chicken
- mussels
- courgette
- prawns
- chicken eggs
- hazelnut
- almonds
- tofu
- whole wheat pasta





YOU NEED YOUR OWN FOOD LABEL FOR THIS

### C. FOOD LABELS

Food labels are required on all food packages so we know what we're eating.

What information is found on a food label?



Example: Serving Size, Nutritional Facts per Serving (measured in grams and % Daily Value for an adult), Calories, Total Fat, Sodium (salt), carbohydrates (sugars and fibre), Protein, Vitamins and minerals

The ingredients found in the food will also be listed somewhere on the package.

1. Let's practise! Use your own food label to answer the questions.

- a) What food is it? \_\_\_\_\_
- b) How large is one serving? \_\_\_\_\_
- c) How many servings are in the package? \_\_\_\_\_
- d) How many calories are in one serving? \_\_\_\_\_
- e) How much sugar is in one serving? \_\_\_\_\_
- f) How much total fat is in one serving? \_\_\_\_\_
- g) Which vitamin or mineral does it contain the most of? \_\_\_\_\_
- h) What % of the Recommended Daily Value of "total carbohydrates" is in one serving? \_\_\_\_\_

<b>Nutrition Facts</b>	
<b>8 servings per container</b>	
Serving size 2/3 cup (55g)	
Amount per 2/3 cup	
<b>Calories</b>	<b>230</b>
% DV*	
<b>12%</b> Total Fat 8g	
<b>9%</b> Saturated Fat 1g	
Trans Fat 0g	
<b>0%</b> Cholesterol 0mg	
<b>7%</b> Sodium 160mg	
<b>12%</b> Total Carbs 37g	
<b>14%</b> Dietary Fiber 4g	
Sugars 1g	
Added Sugars 0g	
<b>Protein 3g</b>	
10% Vitamin D 2mcg	
20% Calcium 260mg	
45% Iron 8mg	
5% Potassium 235mg	

\* Footnote on Daily Values (DV) and calories reference to be inserted here.

2. Compare the nutritional information with others in the group.





3. Choose the correct answers:

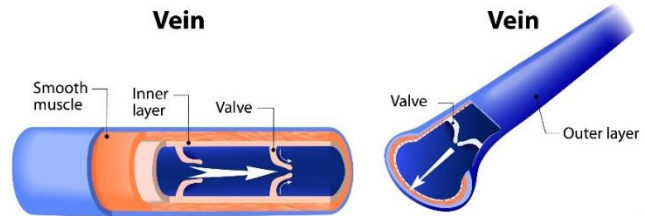
**Blood vessels**

a) If an adult's blood vessels were laid end to end, they would stretch out over

- 1,000 km
- 100,000 km

b) There are three main types of

- vessels
- hearts



c) \_\_\_\_\_ carry blood from the heart to the body's tissues.

- Arteries
- Veins

d) \_\_\_\_\_ carry blood back from the tissues to the heart.

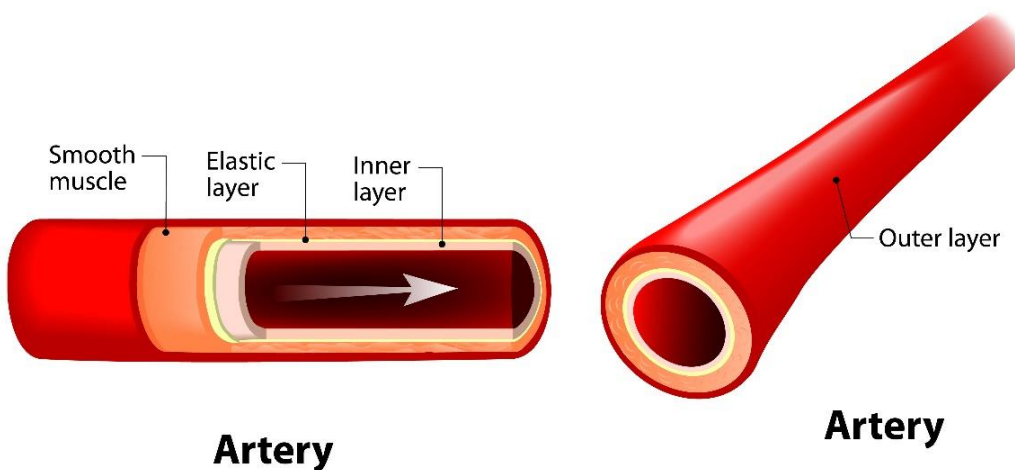
- Arteries
- Veins

e) Small arteries are called arterioles and \_\_\_\_\_ veins are referred to as venules.

- big
- small

f) The third and smallest type of vessel, \_\_\_\_\_, form a network connecting the smallest arterioles with the smallest venules.

- valves
- capillaries





### A. CHECK YOUR PULSE

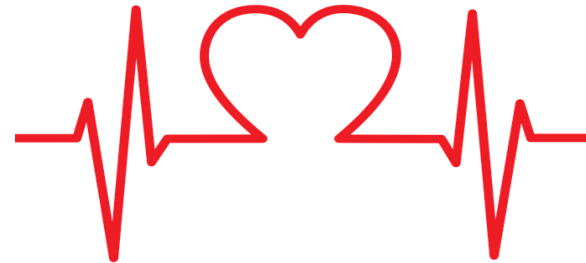


Experiment

1. Check your own pulse.



Your heart beats somewhere between 60 and 100 times a minute, but can beat even faster than that if needed.



How to take your pulse

You can find your pulse in several places. Here are two of the easiest places to find it.

#### To find your pulse in your neck

Put three fingers of your left hand onto your Adam's apple in your throat. Push gently down on one side of it, and you will find your pulse beating (you can feel it going up and down). It can be a bit tricky to find this pulse, so you may not be able to feel it.

Or

#### To find your pulse in your wrist

Hold your hand in front of you. Stick your thumb of this hand up in the air and turn the palm towards you. With the first two fingers of your other hand, stroke from the top of your thumb down along the side of your hand until your fingers reach the end of your forearm nearest to your wrist. Let your fingers slide downwards onto the inside of your forearm until you feel a tendon - which feels like a cord which is going from a muscle to a bone in your hand, and gently feel for your pulse on the thumb side of this tendon. When you have found a steady beat, count how many beats in 30 seconds (use a watch or clock with a second hand). Times your score by 2, and that will tell you your pulse rate per minute.

Or: Get a class member to check it!

2. What is your pulse? \_\_\_\_\_

\*Also check your pulse after exercise!

You can also use the Experiment Template in Appendix 6.



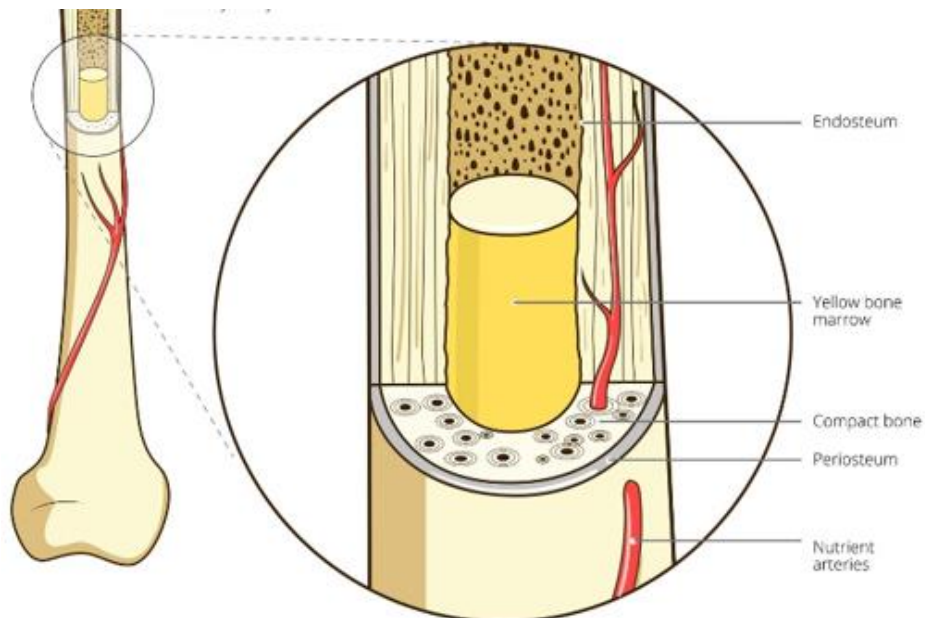


I. Complete the sentences:

What is the function of the skeleton?

**skull, spleen, store, cells, organs, spinal, marrow, strong, bones, movement**

- a) From our head to our toes, \_\_\_\_\_ provide support for our bodies and help form our shape.
- b) It provides protection to the major \_\_\_\_\_ in particular the chest and rib cage.
- c) The ribs form a cage that shelters the heart, lungs, liver, and \_\_\_\_\_, and the pelvis helps protect the bladder, intestines, and in women, the reproductive organs.
- d) Muscles attach to bones to enable \_\_\_\_\_.
- e) The \_\_\_\_\_ protects the brain and forms the shape of our face.
- f) The spinal cord, a pathway for messages between the brain and the body, is protected by the backbone, or \_\_\_\_\_ column.
- g) The soft bone \_\_\_\_\_ inside many of the bones is where most of the blood cells are made.
- h) The bone marrow contains stem cells, which produce the body's red blood cells and platelets, and some types of white blood \_\_\_\_\_.
- i) Although they're very light, bones are \_\_\_\_\_ enough to support our entire weight.
- j) Calcium is needed to make bones hard, which allows them to support body weight.
- k) Bones also \_\_\_\_\_ calcium and release some into the bloodstream when it's needed by other parts of the body.





## MAPPING OF LEARNING OUTCOMES

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- 1 Outline the classification system for living organisms to include common plants and animals **Pages 9 to 11 (Biological classification), Pages 12 to 13 (Kingdoms), Pages 14 to 16 (Tree of Life), Pages 17 to 18 (Flora and Fauna), Page 19 (Scientific names)**
- 2 Identify the common characteristics of a range of living organisms **Pages 20 to 22 (Common characteristics of living organisms), Pages 26 to 27 (Cells)**
- 3 Describe the structure and function of a range of common plants **Pages 64 to 73 (Structure and functions of plants), Page 74 (Experiment – how plants absorb water), Pages 75 and 76 (Experiment – germination)**
- 4 Identify the main components and functions of the human digestive system **Pages 86 to 88 (Digestion)**
- 5 Outline the principles of a balanced diet as illustrated in the food pyramid to include carbohydrates, fats, proteins, vitamins, minerals and water **Page 89 (Reasons to eat healthy), Pages 90 to 91 (Principles of healthy eating), Pages 92 to 102 (Major food groups), Page 103 (Food label), Pages 105 to 106 (Healthy eating quiz)**
- 6 Describe the main components and functions of the human circulatory system **Pages 108 to 116 (Human circulatory system), Page 117 (Checking your pulse), Page 118 (Animal heart dissection experiment)**
- 7 Identify the main elements and functions of the human skeletal and muscular system to include the sensory and reproductive systems **Pages 120 to 123 (Human skeleton), Pages 124 to 126 (Muscles), Page 128 (Sensory system), Pages 129 to 132 (Sensory experiments), Pages 133 to 136 (Reproductive system)**
- 8 Calculate the energy values of a selection of food products that make up a typical daily diet **Page 103 (Food label), Page 104 (Energy values form)**
- 9 Record observations of a range of animals and plants **Pages 42 to 43 (Observing microscopic water creatures), Pages 62 to 63 (Growing a plant, recording results), Pages 75 and 76 (Experiment – germination), Page 77 (Fieldwork), Pages 78 and 79 (Observation sheet), Page 80 (Tree observation), Page 81 (Observation of birds)**
- 10 Draw examples of plant and animal cells **Pages 34 to 35 (Plant cell), Pages 36 to 37 (Animal cell), Page 38 (Differences between plant and animal cell), Pages 39 to 41 (Drawing plant and animal cells)**



11 Investigate a range of micro-organisms such as bacteria and fungi **Pages 28 to 29 (Unicellular organisms), Page 30 (Multicellular organisms), Pages 31 to 33 (Viruses), Pages 44 to 49 (Bacteria), Pages 50 and 51 (Growing bacteria), Pages 52 to 55 (E.coli, salmonella, food safety), Pages 56 to 59 (Bread mould, mould experiment), Pages 60 and 61 (Black mould)**

12 Demonstrate the application of communications, team working and quality awareness **Page 9 (Discussion - biological classification), Page 11 (Pair/Group work - animal classification), Page 13 (Comparing answers), Page 14 (Discussion - Tree of Life), Page 28 (Discussion - unicellular organisms), Page 28 (Research / Videos - unicellular organisms), Page 30 (Research / Videos - multicellular organisms), Page 31 (Discussion - viruses), Page 33 (Discussion - viral infections), Page 39 (Onion and cheek cell lab - experiment), Page 42 (Experiment - microscopic creatures in water), Page 47 (Discussion - food safety graphic), Page 50 (Experiment - growing bacteria), Page 54 (Group project - creating an ad to prevent food poisoning), Page 57 (Experiment - bread mould), Page 60 (Discussion - black mould), Page 62 (Planting project), Page 74 (Experiment - plants absorb water), Page 75 (Experiment - germination), Pages 77 to 78 (Fieldwork, observation sheet), Page 81 (Observation of birds), Page 86 (Discussion - digestion), Page 89 (Discussion - why healthy eating is important), Page 92 (Research -The healthy eating plate), Page 103 (Comparing answers), Pages 104 and 105 (Pair/Group work quiz), Page 109 (Watch video - how the heart works), Page 117 (Checking your pulse), Page 118 (Animal heart dissection), Page 130 (Experiment - taste), Page 131 (Experiment - touch), Page 132 (Experiment - sound)**