

Unit 4: Beginning to be a Biologist

Homework

Homework No.	Date	Parents/Guardian Signature
1		
2		
3		
4		
5		
6		
7		
8		
9		
Investigation		

Comment from parents/guardian

Becoming a biologist

S1 Homework



Homework no 1 (lesson 1 & 2) USE YOUR SUMMARY NOTES

Fill in the blanks

• A _____ is the basic unit of life

1

• Scientists use a _____ to look at cells

1

Draw an animal cell and label all the structures in the box below



1

Draw a plant cell and label all the structures in the box below



1

Q. What is the function of the nucleus?

1

ANSWER:

Q. What is the function of the cell membrane?

1

ANSWER:

Q. What is the function of the cytoplasm?

1

ANSWER:

Q. What is the function of the cell wall?

1

ANSWER:

Q. What is the function of the vacuole?

1

ANSWER:

Q. What is the function of the chloroplasts?

1

ANSWER:

Circle the letters which have the correct statement

Which structural feature is common to both plant and animal cells?

- A Cell wall
- B Chloroplast
- C Nucleus
- D Large central vacuole

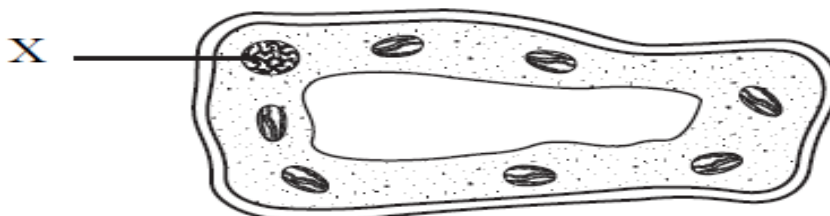
1

Which line in the table below correctly matches the plant cell structure to its function?

	<i>Plant cell structure</i>	<i>Function</i>
A	Cytoplasm	Controls all the chemical activities
B	Cell wall	Keeps the cells turgid
C	Vacuole	Prevents the cell from bursting in a hypotonic solution
D	Cell membrane	Controls which molecules enter or leave the cell

1

The diagram below shows a cell.



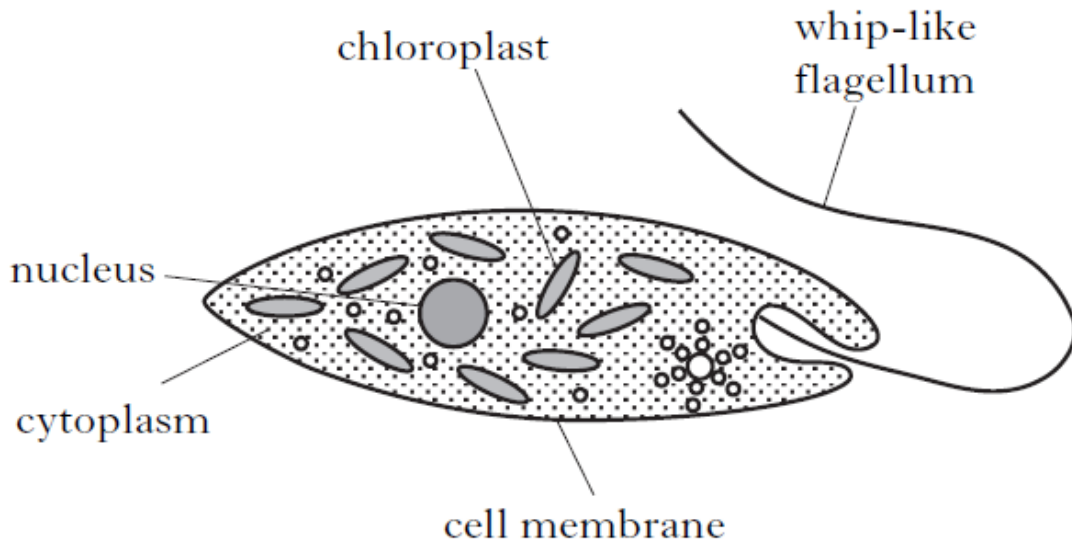
The function of structure X is to

- A control cell activities
- B keep the cell turgid
- C control entry and exit of material
- D release energy from glucose.

1

Euglena is a single celled organism.

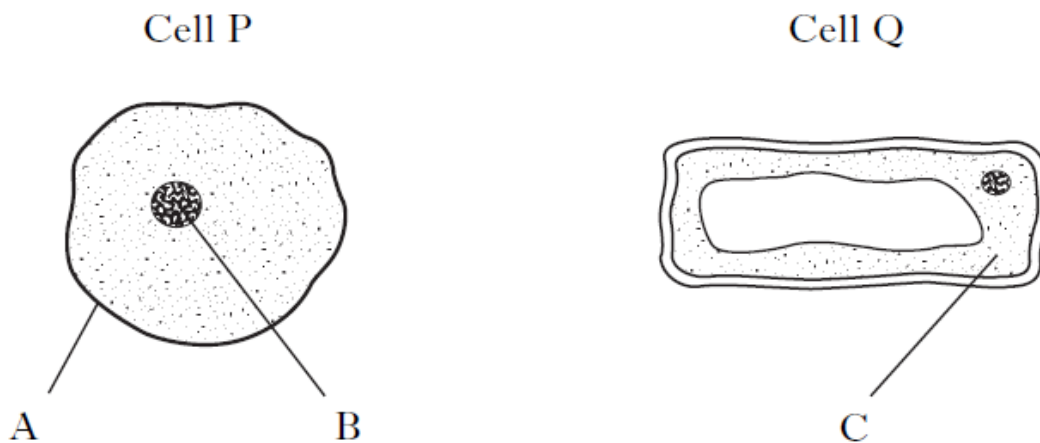
The diagram below shows some of the structures within *Euglena*.



Name the structure that identifies *Euglena* as a plant cell.

1

The diagram below shows two cells P and Q.



Which cell is a plant cell? Give a reason for your choice.

Cell _____

Reason _____

1

END OF HOMEWORK NO 1

Homework no 2 (lesson 4) USE YOUR SUMMARY NOTES

Fill in the blanks

- A cells structure is related to its _____ 1
- _____ blood cells do not contain a _____. This gives them more room to carry _____ round the body 1
- _____ cells have long extensions to transmit signals 1
- Sperm cells have a _____ which allows them to swim towards the egg 1
- Egg cells contain a _____ in their cytoplasm for growth of the embryo 1
- Phagocytes are _____ blood cells that fight infection. They have vesicles containing _____ enzymes which breakdown and destroy _____

1

END OF HOMEWORK NO 2

Homework no 3 (Lesson 5) USE YOUR SUMMARY NOTES

5

Fill in the blanks in the table below

Process required for life	Role
Respiration	
Nutrition	getting food to stay alive
	increase in dry mass
Movement	contraction of muscles
Sensitivity	protect the body from harm
Reproduction	

Research task (either typed or written on A4 paper)

- Give details of medical advances that have allowed us to lead a relatively normal life without being able to carry out one of the processes required for life
- You can choose from the following list
 - Growth hormones
 - Fertility problems
- Success criteria: in your own words
 - State the problem the person has that prevents them from carrying out the process required for life
 - Give details of the medical treatment
 - Explain how the medical treatment has changed the persons' life

END OF HOMEWORK NO 3

Homework no 4 (lesson 6, 7 & 8)

Research task

Use any method of research to answer the following questions

Q. What type of cell is the heart made of? 1

ANSWER:

Q. What is the function of the heart? 1

ANSWER:

Q. What is the texture of the lungs? 1

ANSWER:

Q. What is the function of the lungs? 1

ANSWER:

Q. What does the stomach contain that helps to break food down? 1

ANSWER:

Q. What is the role of the stomach?

1

ANSWER:

Q. Describe the structure of the small intestine and state its function

ANSWER:

1

Q. State what the brain is and what it does.

1

ANSWER:

Q. What is the largest organ in the body?

1

ANSWER:

Q. What is the skin made of and what does it contain?

1

ANSWER:

Q. What do the reproductive organs produce?

1

ANSWER:

Q. What is the male sex cell in mammals?

1

ANSWER:

Q. What is the female sex cell in mammals?

1

ANSWER:

YOU WILL FIND THE ANSWERS TO THE FOLLOWING QUESTIONS IN YOUR SUMMARY NOTES

Q. What is an organ system?

1

ANSWER:

Q. Give all 5 examples of organ systems

1

ANSWER:

END OF HOMEWORK NO 4

Homework no 5 (Lesson 9) USE YOUR SUMMARY NOTES

Fill in the table below with 4 physiological measurements and the instruments used to measure it

2

Physiological measurement	Instrument

END OF HOMEWORK NO 5

Homework no 6 (Lesson 12) USE YOUR SUMMARY NOTES

Research a technological advance that has changed peoples lives (not pacemakers, prosthetics or stereotactic radiation)

Success criteria

- Make sure you have:
 - A heading
 - An introduction into the technological advance e.g. what it is and whose life it has improved
 - Explain how their lives were before and after the technological advance
 - Describe at least 2 pros and 2 cons for the technological advance

COMPLETE THIS TASK ON LINED A4 PAPER OR PRINTED FROM YOUR COMPUTER - CAN USE RELEVANT DIAGRAMS

END OF HOMEWORK NO 6

Homework no 7 (lesson 13) USE YOUR SUMMARY NOTES

Q. What 2 things can yeast be used to produce?

1

ANSWER:

Q. What harmful infections can yeast cause?

1

ANSWER:

Q. What do we treat fungal infections with?

1

ANSWER:

ANSWER THE FOLLOWING QUESTIONS - SOME ANSWERS ARE TO BE WRITTEN IN THE SPACE PROVIDED, OTHER ANSWERS ARE TO BE UNDERLINED READ THE QUESTION!

Yeast is important in making bread and beer through the process of fermentation.

State why yeast is required in each case.

Bread _____

Beer _____

2

Name the gas released by the yeast which made the dough rise.

1

Name **one** product, other than bread, which is made using yeast.

1

Complete the following sentence by underlining the correct word in each bracket.

Yeast is a $\left\{ \begin{array}{l} \text{single-} \\ \text{multi-} \end{array} \right\}$ celled $\left\{ \begin{array}{l} \text{bacterium} \\ \text{fungus} \end{array} \right\}$.

1

Underline **one** option in each set of brackets to make the following sentences correct.

Yeast cells are $\left\{ \begin{array}{l} \text{bacteria} \\ \text{fungi} \end{array} \right\}$ that produce $\left\{ \begin{array}{l} \text{carbon dioxide} \\ \text{oxygen} \end{array} \right\}$ which makes bread rise.

1

END OF HOMEWORK NO 7

Homework no 8 (lesson 16) USE YOUR SUMMARY NOTES

Q. What 2 things can you use bacteria to produce?

1

ANSWER:

Q. Give 2 harmful infections that bacteria can cause

1

ANSWER:

Q. What 3 things do bacteria need to reproduce?

1

ANSWER:

Q. Name 5 ways bacterial growth can be prevented

1

ANSWER:

ANSWER THE FOLLOWING QUESTIONS - SOME ANSWERS ARE TO BE WRITTEN IN THE SPACE PROVIDED, OTHER ANSWERS (MULTIPLE CHOICE) ARE TO BE CIRCLED

READ THE QUESTION!

Name the type of micro-organism used in the manufacture of yoghurt from milk.

1

Give an example of a food which is made using bacteria.

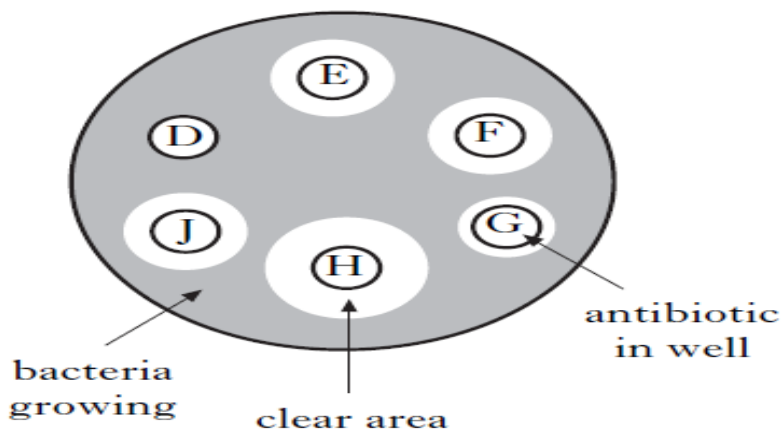
1

One type of cell is used in the production of yoghurt.

(A) Name the type of cell used in the production of yoghurt.

1

The diagram below shows the results of an investigation into the effect of different antibiotics on a type of bacterium.



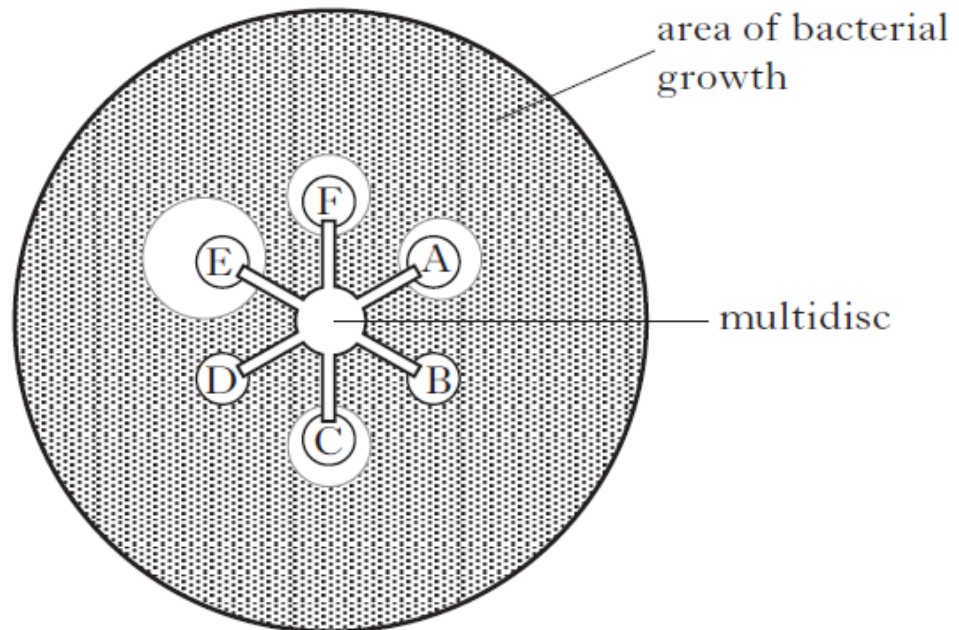
Which of the following conclusions can be drawn from these results?

- A These bacteria are resistant to antibiotic H.
- B Antibiotic D is the most effective antibiotic against this type of bacterium.
- C These bacteria are resistant to antibiotic D.
- D This type of bacterium is resistant to all of the antibiotics.

1

A nutrient agar plate was covered evenly with a suspension of bacteria. A multidisc was placed on the surface of the agar. Each of the six ends of the multidisc contained a different antibiotic.

The diagram shows the agar plate after incubation.



Which antibiotic was most effective at preventing bacterial growth?

1

To which antibiotics were the bacteria resistant?

1

Fill in the blanks

- Viruses are used in the production of _____ and in

1

- Viruses can be harmful and cause infections such as

_____ and _____

1

- Viruses can be prevented by the use of _____

1

END OF HOMEWORK NO 8

Homework no 9 (Lesson 20) USE YOUR SUMMARY NOTES

Q. What 4 things does the immune system consist of? 1

ANSWER:

Q. What is the very first line of defence in the immune system?

ANSWER: 1

Q. What does mucous do? 1

ANSWER:

Q. What is the purpose of tears? 1

ANSWER:

Q. What 2 types of cells make up cellular defence? 1

ANSWER:

Q. What are vaccines produced using? 1

ANSWER:

Q. What does the body produce in response to vaccine?

1

ANSWER:

Q. Why do we use vaccines?

1

ANSWER:

HOMEWORK 9 CONTINUES ON NEXT PAGE!!!

ANSWER THE FOLLOWING QUESTIONS - SOME ANSWERS ARE TO BE WRITTEN IN THE SPACE PROVIDED, SOME ANSWERS (MULTIPLE CHOICE) ARE TO BE CIRCLED, OTHER ANSWERS ARE TO BE UNDERLINED

READ THE QUESTION!

Name the type of white blood cell that can produce antibodies.

1

Underline one option

Antibodies are produced by $\left\{ \begin{array}{l} \text{macrophages} \\ \text{lymphocytes} \end{array} \right\}$

1

Which line in the table below identifies correctly how lymphocytes destroy bacteria?

	<i>Phagocytosis</i>	<i>Antibody production</i>
A	yes	yes
B	yes	no
C	no	yes
D	no	no

1

Which of the following produce antibodies?

- A Blood plasma
- B Lymphocytes
- C Macrophages
- D Red blood cells

1