ACTIVITIES

UNIT 1. CELLS & LIVING THINGS

CHECK YOUR LEARNING

Answer the following questions. Use full sentences and be careful with your handwriting.

KINDS OF CELLS

1. What is the main difference between eukaryotic and procaryotic cells? Which one is bigger? _____

_____

2. Some procaryotic cells have a flagellum, what do they use it for?

_____

3. What do procaryotic and eucaryotic cells have in common?

1. _____
2. _____
3. _____

THE EUCARYOTIC CELL

4. Answer these questions.

1. **What is a cell?**

   _____

2. **What life processes do cells perform?**
   1. _____
   2. _____
   3. _____
3. **How do cells reproduce?**

   _____

   _____

5. Match the life processes with their descriptions. Write the number in the line.

1. Interaction	__ Living things create new member of the same species
2. Nutrition	__ Living things react to things that happen in their environment
3. Reproduction	__ Living things take nutrients that give them energy and help them to grow and develop

6. Write the part of the cell each definition corresponds to:

_____ is a jelly-like material that contains organelles.

_____ is a protective covering that surrounds the cell.

_____ is the structure that controls a cell.

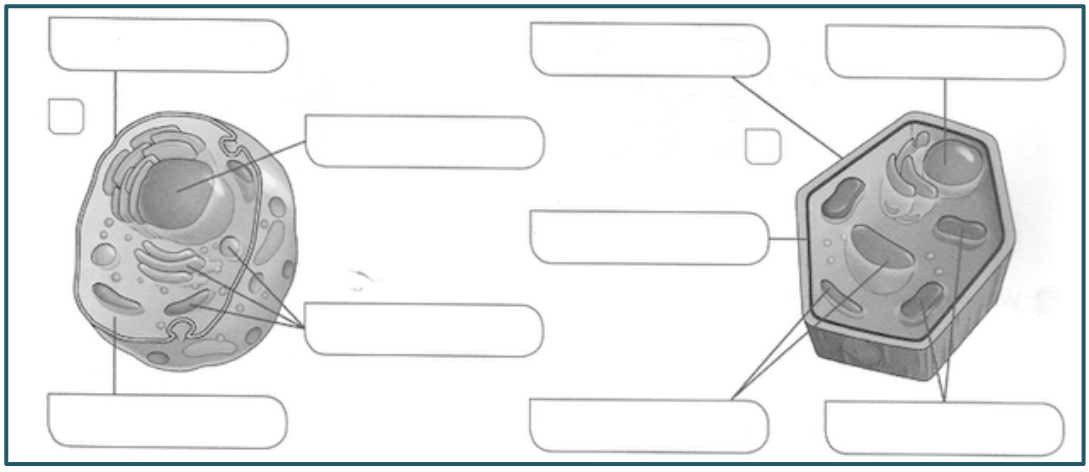
_____ carry out different functions an are located in the cytoplasm.

7. Complete the text.

cell wall	vacuole	chloroplasts	nucleus

Plant cells contain a _____, a strong _____, which gives the cell its shape, a cell membrane, and cytoplasm. They contain _____, which give plants their green colour and are used in photosynthesis. Finally, plant cells have a large _____. This contains water and minerals.

8. Label the cells A for animal cell and P for plant cell. Then, label their parts



9. **What are cell walls made of? Why do plant cells need cell walls?**

_____

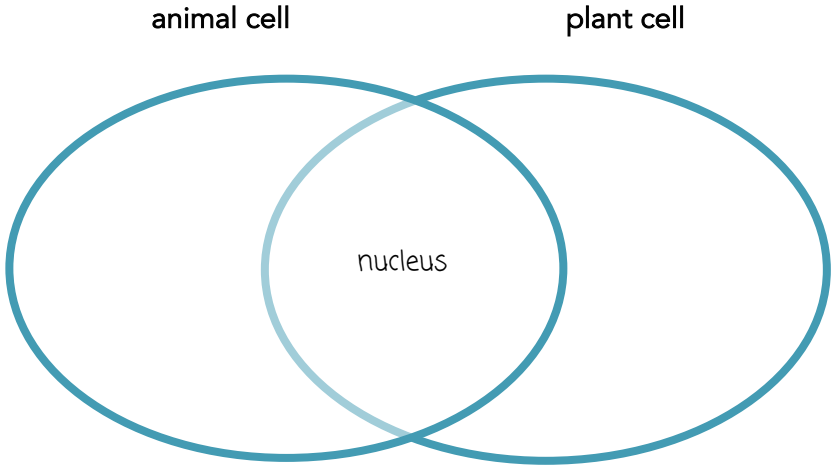
_____

10. **Match**

a. The nucleus	___ controls what enters and leaves the cell.
b. The chloroplasts	___ produce proteins.
c. The cell wall	___ make the plant green and help make food during photosynthesis
d. The vacuole	___ provide energy to the cell.
e. The cell membrane	___ contains water and minerals.
f. Ribosomes	___ controls the functions of the cell.
g. Mitochondria	___ protects the cell and gives it its shape.

11. **Complete the Venn diagram.**

~~nucleus~~ cytoplasm chloroplasts cell membrane cell wall vacuoles lysosomes



12. **Complete the sentences using words from the previous activity.**

Animal cells are made up of a _____ , a _____ , _____ and _____. Unlike plant cells, they don't have a _____ or _____. However, they have _____, which plant cells do not.

13. Write three differences between plant and animal cells.

1. _____
2. _____
3. _____

THE ORGANIZATION OF MULTICELLULAR ORGANISMS

14. Answer these questions.

1. **What does *multicellular* mean?**

   _____

2. **Name two multicellular living things.**

   1. _____
   2. _____

3. **What are unicellular living things? can you see them wth the naked eye?**

   _____

   _____

15. Order and copy the words from the simplest structure to the most complex.

tissue organism cell organ system

16. Complete the sentences

a. Cells join together to form ……..…

b. Tissue groups together to form ……

c. Organs work together to form ……..……

d. Systems work together to forma complete ……..…

17. Read the sentences and circle the correct words.

a. Multicellular living things are made up of the ***same types / different types*** of cells.

b. A group of cells that are similar and have a common function is called ***an epidermis / a tissue.***

c. Bone tissue in animals is made up of ***bone cell / a group of bone cells.***

d. Tissues that form organs perform the ***same function / different functions***.

18. Identify the mistakes and make the necessary changes to make the correct.

a. Some living things are made out of cells.

b. Cells are living units because they carry out the two basic life processes: nutrition and reproduction.

c. Cells in living things are organized to form systems.

d. Plant cells are usually circular.

THINK

19. Answer the following questions. Use **full sentences** and be careful with your handwriting.

a. What's the difference between a unicellular and multicellular organism?

_____

_____

b. Are unicellular organisms living things? Why? Why not?

_____

_____

c. Are human beings multicellular or unicellular organisms? Why?

_____

_____

d. What structure comes after organs? Can you think of an example of one?

_____

e. Explain why animal cells do not have chloroplasts.

_____

_____

_____

f. Why do you think unicellular organisms are often called "microorganisms"?

_____

_____

DID YOU KNOW?

Vacuoles

Read the following text about vacuoles. Then, answer this question: Where can we find vacuoles? What function do they perform in flower cells?

_____

_____

Vacuoles are fluid-filled sacs that are found in the cytoplasm. In plant cells, vacuoles contain water and pigments, which give flower petals their colour, for example, red or yellow. This pigment determines the colour of the petals.
Some flowers contain pigment tones, which only insects can see. These pigment tones attract insects to the flower's nectar.
When a plant doesn't have enough water, the vacuole empties, the plant loses its rigid structure and begins to wilt. A few minutes after giving the plant some water, the vacuole fills with water and the plant becomes rigid again.

Do animal cells have vacuoles?

_____

_____

The size of living things

Read the following text. Then, answer this question: Are the cells of a whale bigger that the cells of an ant?

_____

_____

Larger living things have many more cells than smaller living things. However, the cells are the same size: an elephant's blood cells are the same size as the blood cells of a mouse.

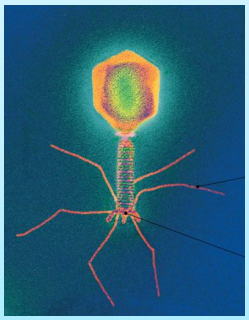
Viruses

Read the following text about viruses. Then, answer this question: Why are viruses not living things?

_____

_____

Viruses are much smaller than cells. Some scientists believe viruses to be microorganisms, although they are not considered to be living things. This is because they can only fulfill one of the life processes: reproduction. A virus doesn't make or use food. It doesn't change or interact with the environment.



The unusual thing about viruses is that in order to reproduce, they must be inside of a living thing. The virus first attaches itself to a living cell. The living cell then makes copies of the virus. Once the cell is full of copies of the virus, the cell bursts. The new viruses then infect other cells.

Viruses cause diseases in both animals and plants. Flu, chickenpox and hepatitis are caused by viruses.

Investigate. Find the name of another virus that can cause a disease to human beings.

_____

_____

LET'S WORK TOGETHER

✓ **In groups, find out the names of some different body systems and their functions**.

What is the system called?

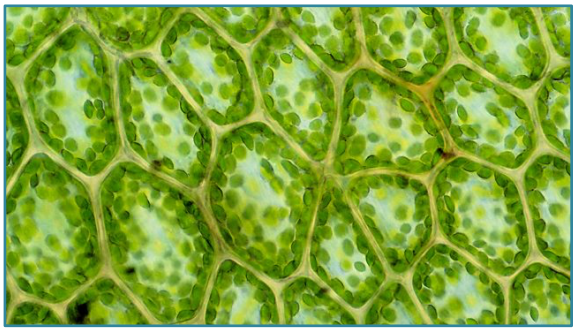
What is its function?

What type of cells does it contain?

* Which system includes the brain?

* Can you name three organs of the musculoskeletal system?

✓ **Work with a partner. Observe the photographs and answer the questions.**



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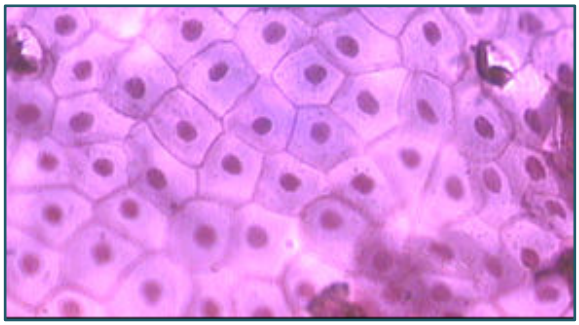

_____

a. What do you see?

b. Does each of the samples belong to a plant or an animal?

c. Draw a single cell from each photograph and label the parts you can identify.

SHOW YOUR SKILLS

Choose ONE of the following projects

✓ **The invention of the microscope**

Search the Internet for information about one of the following topics and prepare a presentation. Use information and photographs.

Who invented the first microscope?
Where was the inventor from? What was his profession?
What was it used for?

✓ **The discovery of the cell**

Search the Internet for information about this topic and prepare a presentation. Use information and photographs.

✓ **Make a model of an animal and a plant cell using plasticine.**

Label the parts of each cell.

✓ **Cells specialize**:

Search the Internet for information about one of the following topics and prepare a presentation. Use information and photographs.

- osteocyte
- platelet
- lymphocyte
- astrocyte

Where can we find them in the body?
What shape and colour are they?
What is their function?

*Presentations can be done in a POSTER or a POWER POINT.