



TEACHER GUIDE

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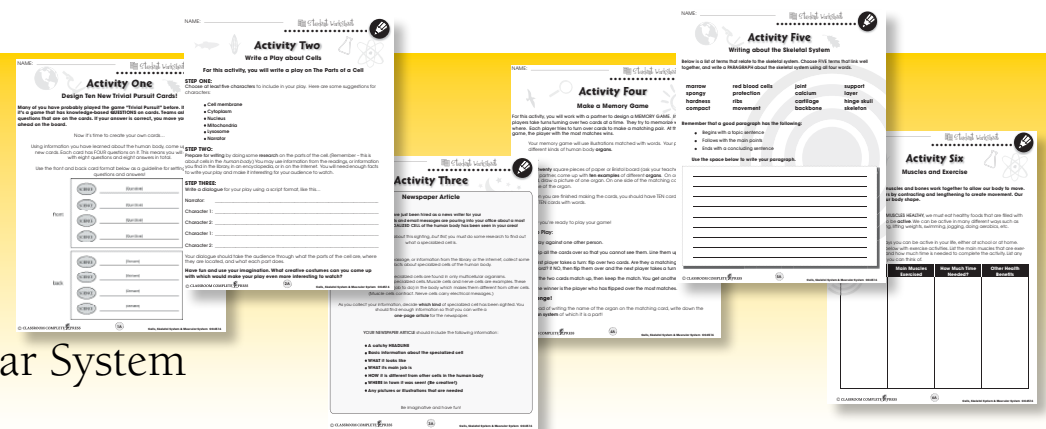
MINI POSTERS 21

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6 Bonus Activities!

3 EASY STEPS to receive your 6 Bonus Activities!

- Go to our website:
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- Click on item CC4516 – Cells, Skeletal System & Muscular System
- Enter pass code CC4516D





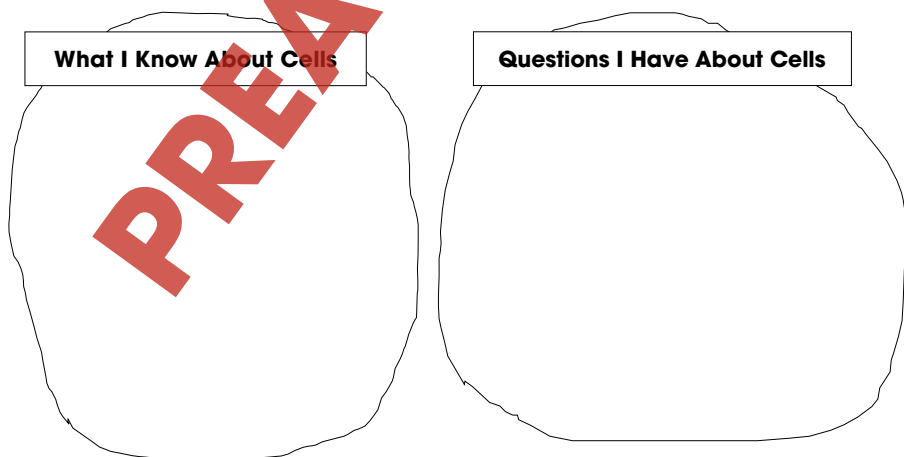
Cells - The Building Blocks of Life

1. Complete each sentence with a word from the list. Use a dictionary to help you.

- | | | |
|-----------------------------------|----------------------------------|---------------------------|
| unicellular organisms bacteria | multicellular organisms cells | specialized microscope |
|-----------------------------------|----------------------------------|---------------------------|

- Every living thing is made up of _____. That is why they are called the building blocks of life.
- Some living things are very simple. The ones that are only one cell in size are called _____.
- _____ are an example of unicellular organisms.
- Humans and frogs are an example of _____.
- Most cells are very small. We have to use a _____ to be able to see them.

2. Use the cell shapes below to list anything you already know about cells and some questions you have about cells.

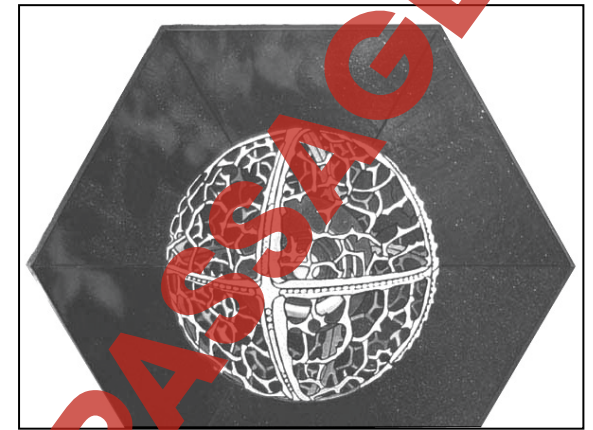


Cells - The Building Blocks of Life

Cells are called the building blocks of life because every living thing in the world is made of cells.

Unicellular Organisms

Some living things are very simple and are only one cell in size. These are called **unicellular organisms**. This one cell is able to do all the things needed to keep the organism healthy and alive. The cell can move, eat, breathe, remove waste and reproduce. There are many unicellular organisms in the world but most are far too small to see without a **microscope**. **Amoeba** and **bacteria** are examples of unicellular organisms. The largest unicellular organism is the ostrich egg!



Multicellular Organisms

Almost all of the living things we see around us are **multicellular organisms**. They are made of more than one cell. Every plant and animal, including humans, are multicellular organisms. Some multicellular organisms are only a few cells but most are **billions** of cells. Did you know that a baby is born with 26 billion cells, but by the time it is an adult it will be made of close to 100 trillion cells!

Cells that make up multicellular organisms are **specialized**. They do only certain jobs and need all the other cells to do their own specialized jobs too. Working together, all the cells keep the organism alive and healthy. For example, the cells in our eyes help us see but cannot help us breathe. We need the cells in our lungs for that.

Look around you. List FIVE things you see that are made of cells. Tell whether each thing is UNICELLULAR or MULTICELLULAR.

STOP!



Cells - The Building Blocks of Life

1. Fill in each blank with a term from the list.

- | | | | |
|------------|----------|-----------------------|-------------------------|
| alive | amoeba | specialized | multicellular organisms |
| microscope | billions | unicellular organisms | bacteria |
| humans | cell | different | |

Some living things are very simple and are only one _____ in size. These are called _____. These are very small and in most cases can only be seen with a _____. Two examples of unicellular organisms are _____ and _____. _____ make up most of the living things that we can see around us. Every plant and animal, including _____ are multicellular organisms. They get their name because they are made of more than one cell. This is one way that they are _____ from unicellular organisms. Most multicellular organisms are made of _____ of cells. These cells are also all very _____. This means they have certain jobs to help keep the organism _____.

2. a) Underline the terms and ideas that describe unicellular organisms.

- | | | | | |
|--|-------|-----------------------|---------------------------|-------------|
| simple | human | bacteria | made of billions of cells | ostrich egg |
| the cells are specialized | tree | made of only one cell | amoeba | |
| so small you need a microscope to see it | | | | |

b) Circle the terms and ideas that describe multicellular organisms.

- | | | | | |
|--|-------|-----------------------|---------------------------|-------------|
| simple | human | bacteria | made of billions of cells | ostrich egg |
| the cells are specialized | tree | made of only one cell | amoeba | |
| so small you need a microscope to see it | | | | |



Cells - The Building Blocks of Life

3. Why are cells considered the building blocks of life?

4. How can a unicellular organism eat, move and breathe when it is only one cell in size?

5. Which statements describe multicellular organisms and which statements describe unicellular organisms? Color the cell that matches the statement.

| Feature | Unicellular Organism | Multicellular Organism |
|--|-----------------------|------------------------|
| a) These living things are very simple | <input type="radio"/> | <input type="radio"/> |
| b) Every plant and animal is this | <input type="radio"/> | <input type="radio"/> |
| c) The cells of this organism are specialized | <input type="radio"/> | <input type="radio"/> |
| d) Most of these organisms are too small to see without a microscope | <input type="radio"/> | <input type="radio"/> |
| e) Amoeba and bacteria are examples | <input type="radio"/> | <input type="radio"/> |
| f) You are an example | <input type="radio"/> | <input type="radio"/> |

Research

6. **Cancer** is a disease that affects humans. It is caused by the uncontrolled growth and spread of cells in the body. Your task is to investigate cancer in humans. Collect information about **cancer cells** (What do they look like? How do they grow? How do they harm the human body?). Then, find out some of the most common **treatments**. Write your findings in a one-page report. Include pictures that you find of cancer cells, or illustrate them.

7. **Tap water** is treated so that humans will be safe from harmful unicellular organisms that may live in it. Find out where the tap water in your home comes from (i.e., a nearby lake? an underground reservoir?). Then find out how the tap water in your area is treated. List some of the main unicellular organisms that this treatment protects you from. You can look for your information on the Internet. Or, you may need to ask your teacher to help you contact someone who works for your town or city in water treatment.



Build Your Own Cell

We have learned that human body cells can be different shapes and sizes, but they all have some parts in common.

Do you remember what they are?

1. The **cell membrane** is the outside covering that separates the cell from its environment.
2. The **cytoplasm** is the jelly-like substance inside the cell where all the work takes place.
3. The **nucleus** floats in the cytoplasm and contains DNA.
4. The **mitochondria** float in the cytoplasm too, and turn food into energy.
5. The **lysosomes** also float in the cytoplasm and keep the cell clean.

FOR THIS ACTIVITY, you will need:

- 5 different colors of plasticine
- 5 toothpicks
- small pieces of paper
- tape

STEPS:

1. Use plasticine to **sculpt** your cell. First, decide what shape it will be. Remember that human body cells can be long and thin, round, or rectangular in shape. Use a different **color** for each cell part. The cell should be **at least** the size of your hand.
2. Once you have finished sculpting your cell, place the toothpicks in the plasticine. You will use them as markers for the different cell parts.
3. On a small piece of paper, write down the cell part. "Flag" it by sticking the toothpick in the plasticine.
4. Tape the label (small piece of paper) to the toothpick.

When you are finished, someone should be able to look at your plasticine cell and see the five different parts labeled. Have fun sculpting!



Crossword Puzzle!

Across

1. Muscle tissue changes size by _____ and lengthening
3. The human body is made of _____ cells
4. Muscle _____ are like elastic string
6. Humans are _____ organisms
8. The knee is an example of a _____ joint
10. _____ muscles allow our bones to move
11. Cells group together to form _____
13. The cell contains special information called _____
14. There are _____ major organ systems in the human body

Down

1. The liquid inside a cell is called _____
2. The skeletal system is made of bones, joints and _____
4. The heart is made of _____ muscle
5. Nerve tissue carries messages from the brain in the form of electrical _____
7. The digestive system is made of mostly _____ muscles
9. Muscles work in _____; one shortens and the other lengthens
12. Mitochondria turn food into _____

Word List

| | |
|---------------|-------------|
| specialized | cytoplasm |
| contracting | energy |
| DNA | cardiac |
| cells | involuntary |
| tissues | pairs |
| hinge | cartilage |
| multicellular | signals |
| eight | skeletal |



Comprehension Quiz

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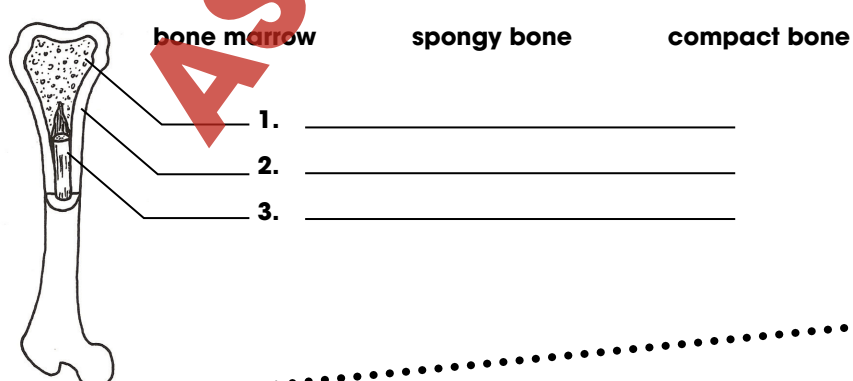
Part A

Circle **T** if the statement is TRUE or **F** if it is FALSE.

- 1) The cell nucleus contains hereditary information called DNA.
- 2) In the human body, organs are made of groups of tissue that have a specific job.
- 3) Organ systems are simpler than organs.
- 4) Three of the major organ systems in the human body are the respiratory system, skeletal system and brain system.
- 5) In the circulatory system, the heart pumps blood through our nerves.
- 6) The main jobs of the skeletal system is to give protection and support.
- 7) The ends of our bones are covered by a rubbery material called cytoplasm.
- 8) Skeletal muscles control the digestion of food in our stomach.

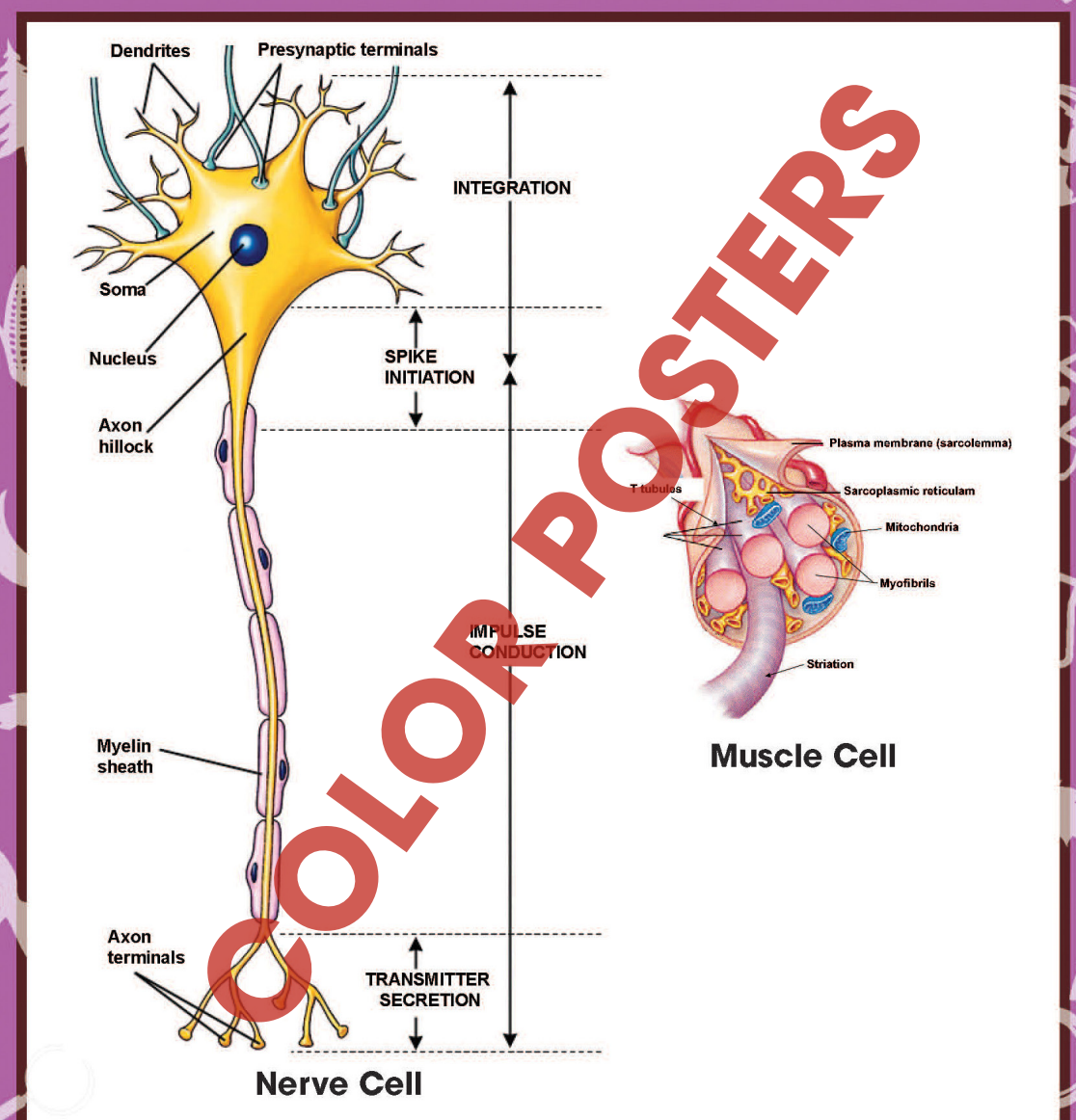
Part B

On the diagram below, label the three layers of bone. Use the words in the list.



SUBTOTAL: /14

Human Body Cells



NAME: _____

After You Read 



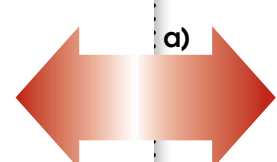
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| f) You are an example | <input type="radio"/> | <input type="radio"/> |



- a)
- b)
- c)
- d)
- e)
- f)

3. All living things are made of cells

4. It can do everything an organism needs to do to stay alive and healthy

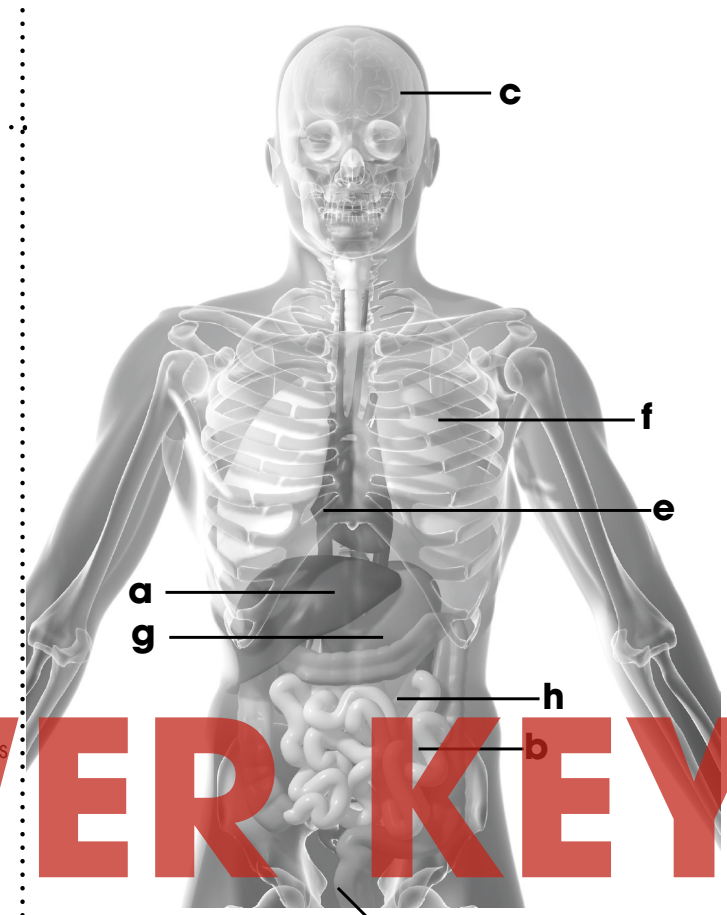
5.

Answers will vary
11

Answers will vary
12

Part 1

- a) skull
- c) clavicle
- f) ribs
- i) backbone
- j) pelvis
- m) femur
- n) patella
- p) fibula
- b) mandible
- d) scapula
- e) sternum
- g) humerus
- h) ulna
- k) radius
- l) phalanges
- o) tibia



Part 2

Answers will vary
13

6. Answers will vary

7. Answers will vary
10

14

EASY MARKING ANSWER KEY

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