Part 1 Levels of Biological Organization Name:_____

Part 1 Lesson 1

Working in small groups, Name the Organ of the human body and the system it belongs to if you know it. -Let's see what you already know. (For Fun)

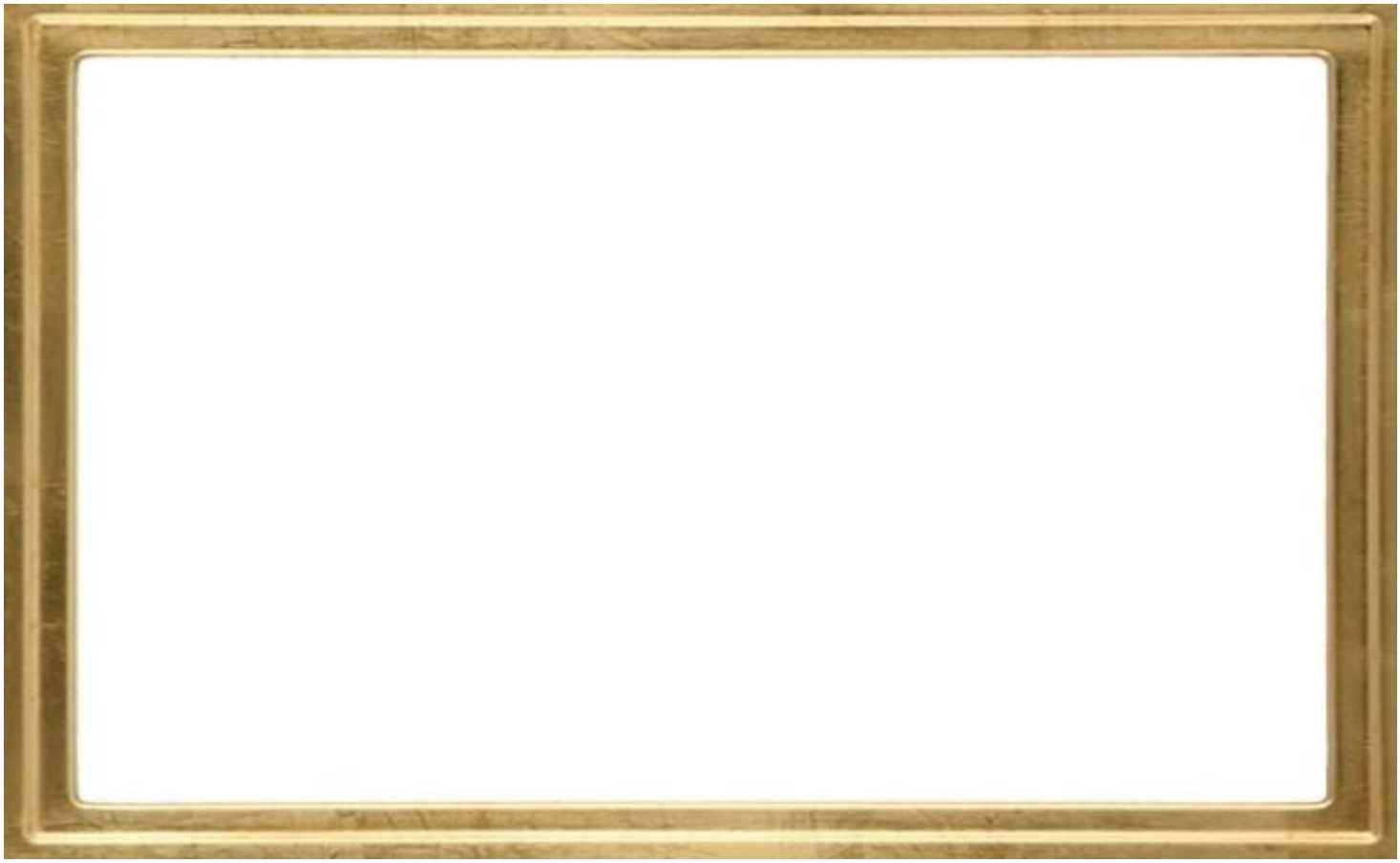
1)	2)	3)	4)
5)	6)	7)	8)
9)	10)	11)	12)
13)	14)	15)	16)
17)	18)	19)	20)

Bonus=

Anatomy: The science of the _____ and _____of organisms.

(FFF) _____ _____ _____: Parts of the body are shaped to perform a particular job.

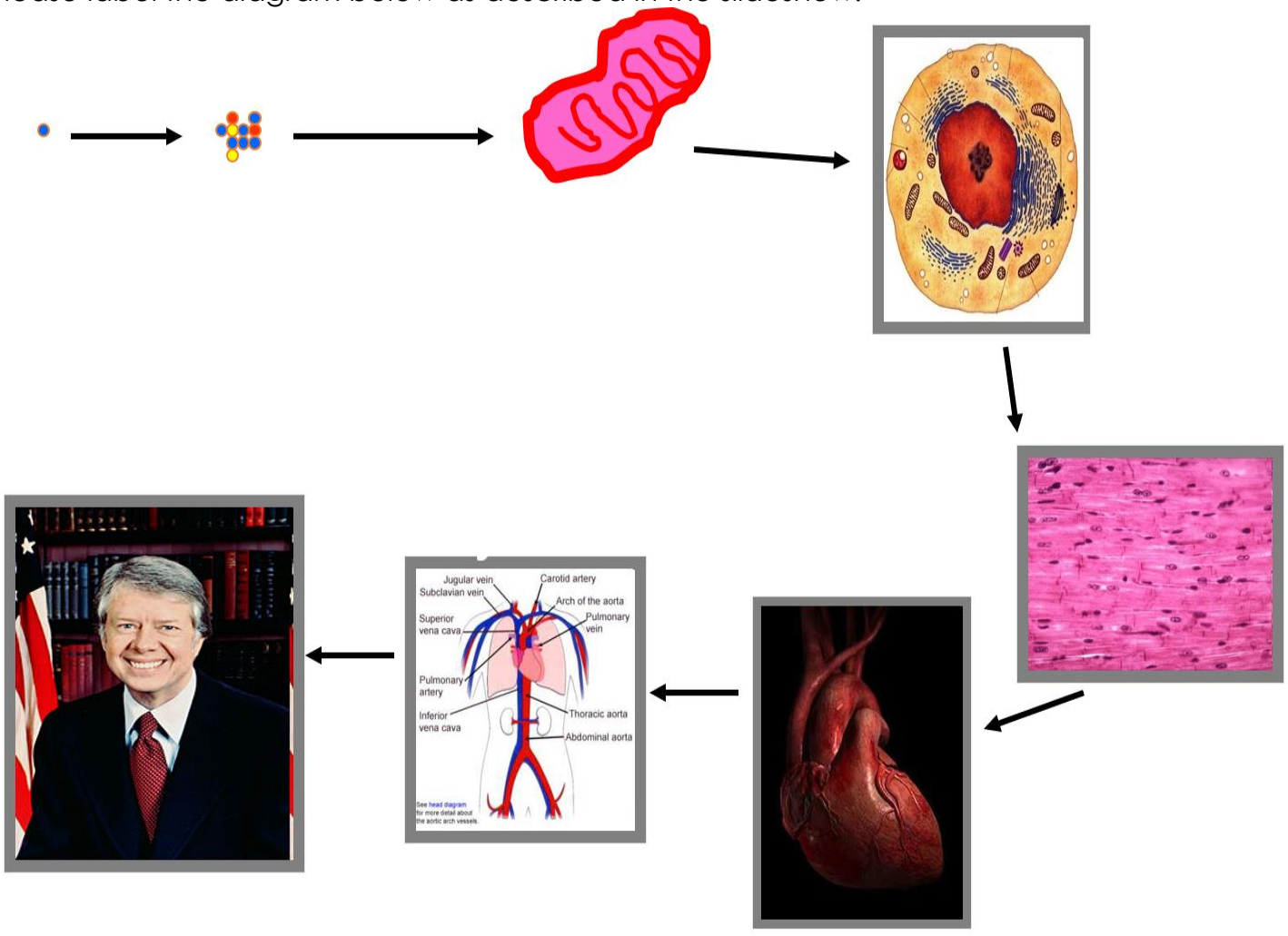
- Students will pick an object with eyes closed.
- Make a quick sketch below.



Write a 3-5 sentence paragraph describing how the objects form follows its function.

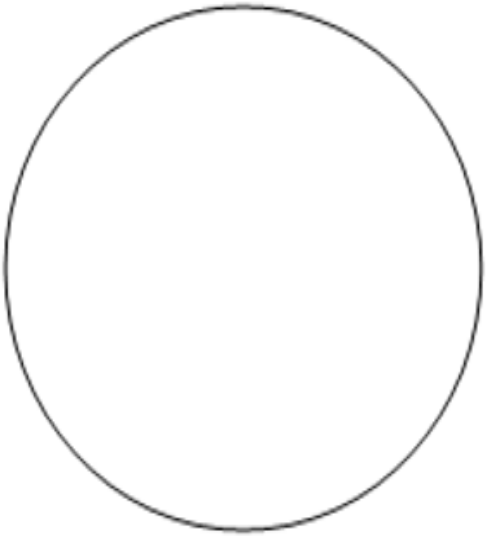
Part 1 Lesson 2 Levels of Organization

Please label the diagram below as described in the slideshow.

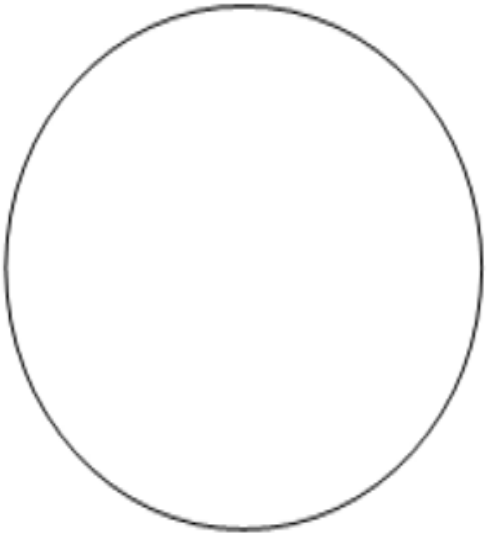


Take some images or sketch a cheek and onion cell at low and high power. Please describe the resolution

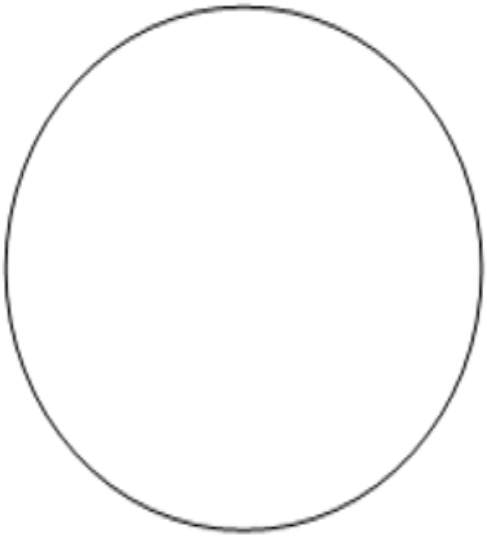
Plant Cell Low Power



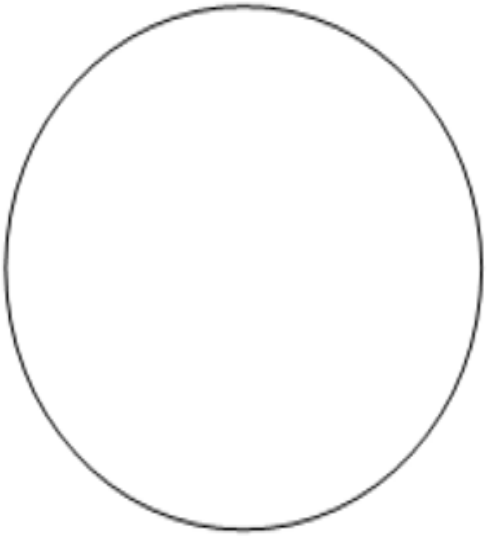
Cheek Cell Low Power



Plant Cell High Power

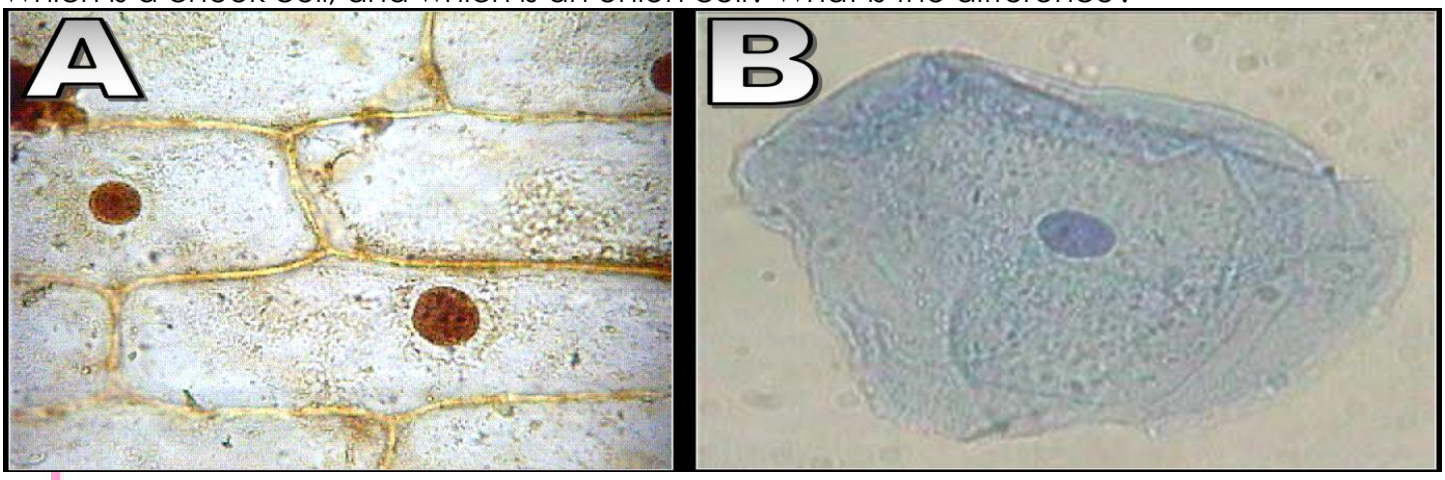


Cheek Cell High Power

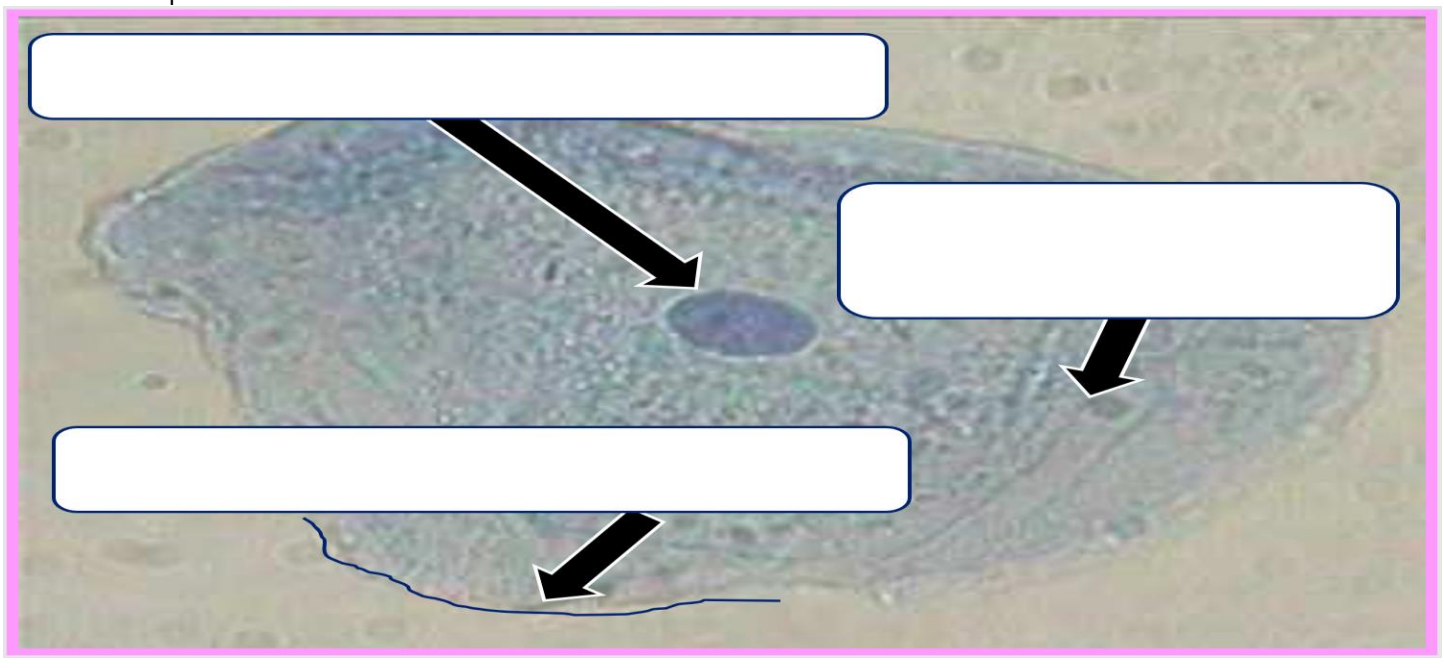


Part 1 Lesson 3 Cells and Tissues

Which is a cheek cell, and which is an onion cell? What is the difference?



Name the parts of a cell below as described in the slideshow



Cells are the _____and _____units of all living organisms.

Humans have some 37.2 Trillion

_____cellular (More than one cell)

Protists, Archaea, and Bacteria have 1 - Unicellular

◊ Name four different types of **cells** found in the human body

1.)	2.)
3.)	4.)

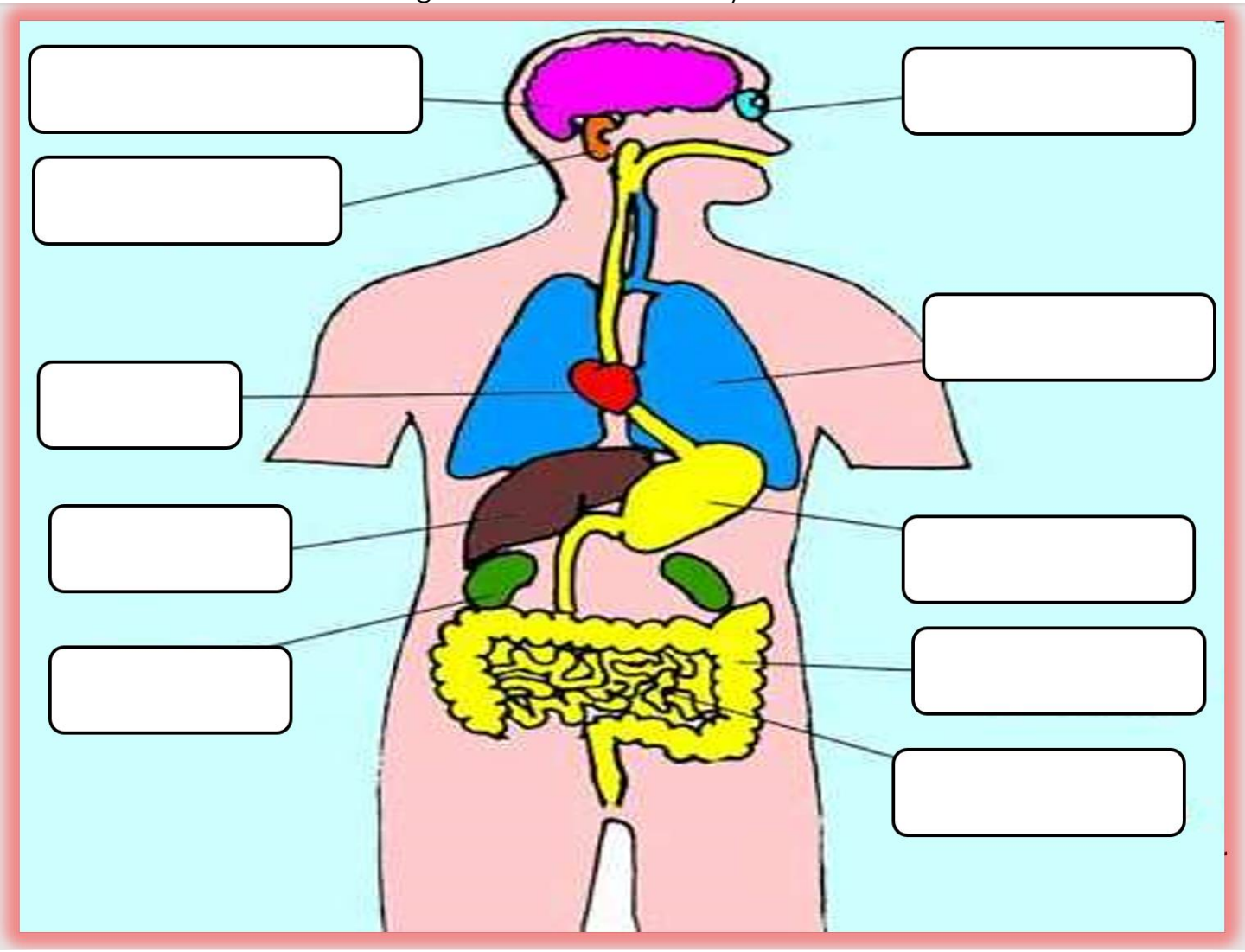
◊ Name three different types of **tissues** found in the human body

1.)	2.)
3.)	◊ Draw a body tissue in this box

Tissue: A group of _____ _____ that perform the same function.

Organ: A group of different _____with a specific _____

Name some of the common organs in the human body below.



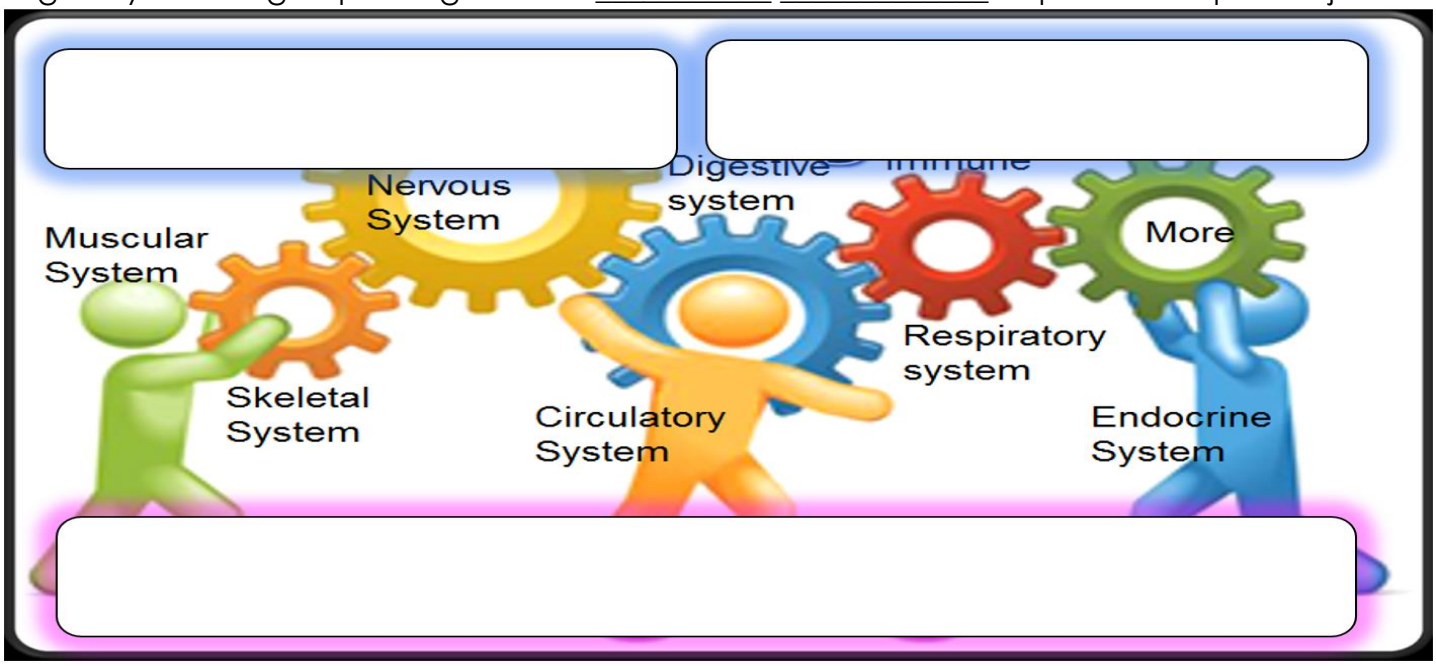
Write down the names of several organs in the human body in the spaces below. The last letter of number 1 must be the first letter of number 2, and so on. Match the last letter of the organ to the first of the next.

_____ ▶ _____ ▶ _____ ▶ _____ ▶ _____ ↓

_____ ◀ _____ ◀ _____ ◀ _____ ◀ _____

Part 1 Lesson 4 Organ Systems and Homeostasis

Organ System: A group of organs that _____ _____ to perform a specific job.



Name a few Organ Systems in the Human Body

Quiz 1-10. Levels of Biological Organization.

- Word Bank: Is it a cell, tissue, organ, organ system, or individual.

1)	2)	3)
4)	5)	6)
7)	8)	9)
10)	Bonus	

Homeostasis: The ability of an organism or cell to maintain _____.
Regardless of outside conditions.

Everyone needs to record pulse for 15 seconds and record number in journal.

- Practice a few times before we begin.
- Don't use your thumb, use your fingers.

Practice Pulse #1	Practice Pulse #1	Practice Pulse #1	Practice Pulse #1

Prediction for pulse after one minute of exercise _____? 5 minutes_____?

Resting Temperature _____
Prediction of Temp after 5 minutes of Exercise_____?

Duration	Pulse Rate 15 sec. x 4 and temperature
Resting (Baseline data)	
1 minute of jog in place / jumping jacks -Rest in between and get pulse rate back to baseline	
5 minutes of jog in place / jumping jacks	

How long after the 5-minute drill does it take for your pulse to reach its resting / base line?
#1.) What was the increase in pulse rate from resting (baseline) to the 5 minutes of exercise? Please use data in your response.

#2.) How did temperature change from baseline to the 3-5 minutes of exercise?

#3) Describe the changes your body went through from the start of this activity until the end? Think Homeostasis.

◊ Please describe a few ways your body maintains homeostasis with your environment.

Part 1 Lesson 5 Wrap-Up and Quiz

Levels of Biological Organization Quiz. 1-10 ten Points each, 5 Point Bonus.

1)	2)	3)
4)	5)	6)
7)	8)	9)
10)	*11) Bonus	

Score out of 100% _____

Notes:

Across

2. The _____ system is made up of blood vessels that carry blood away from and towards the heart
4. The human _____ system consists of the gastrointestinal tract plus the accessory organs of digestion
6. The major levels of _____ in the body, from the simplest to the most complex are: atoms, molecules, organelles, cells, tissues, organs, organ systems, and the human organism
7. Organ _____: A group of organs that work together to perform a specific job.
8. Cell _____: Any of the specialized structures within a cell that perform a specific function
11. The _____ system protects your child's body from outside invaders, such as bacteria, viruses, fungi, and toxins (chemicals produced by microbes)
14. The _____ system is a biological system consisting of specific organs and structures used for gas exchange in animals and plants.
15. The branch of biology that deals with the normal functions of living organisms and their parts. the way in which a living organism or bodily part functions.
16. The science of the shape and structure of organisms
18. This consists of a group of structurally and functionally similar cells and their intercellular material.
19. _____ are the basic building blocks of all living things.

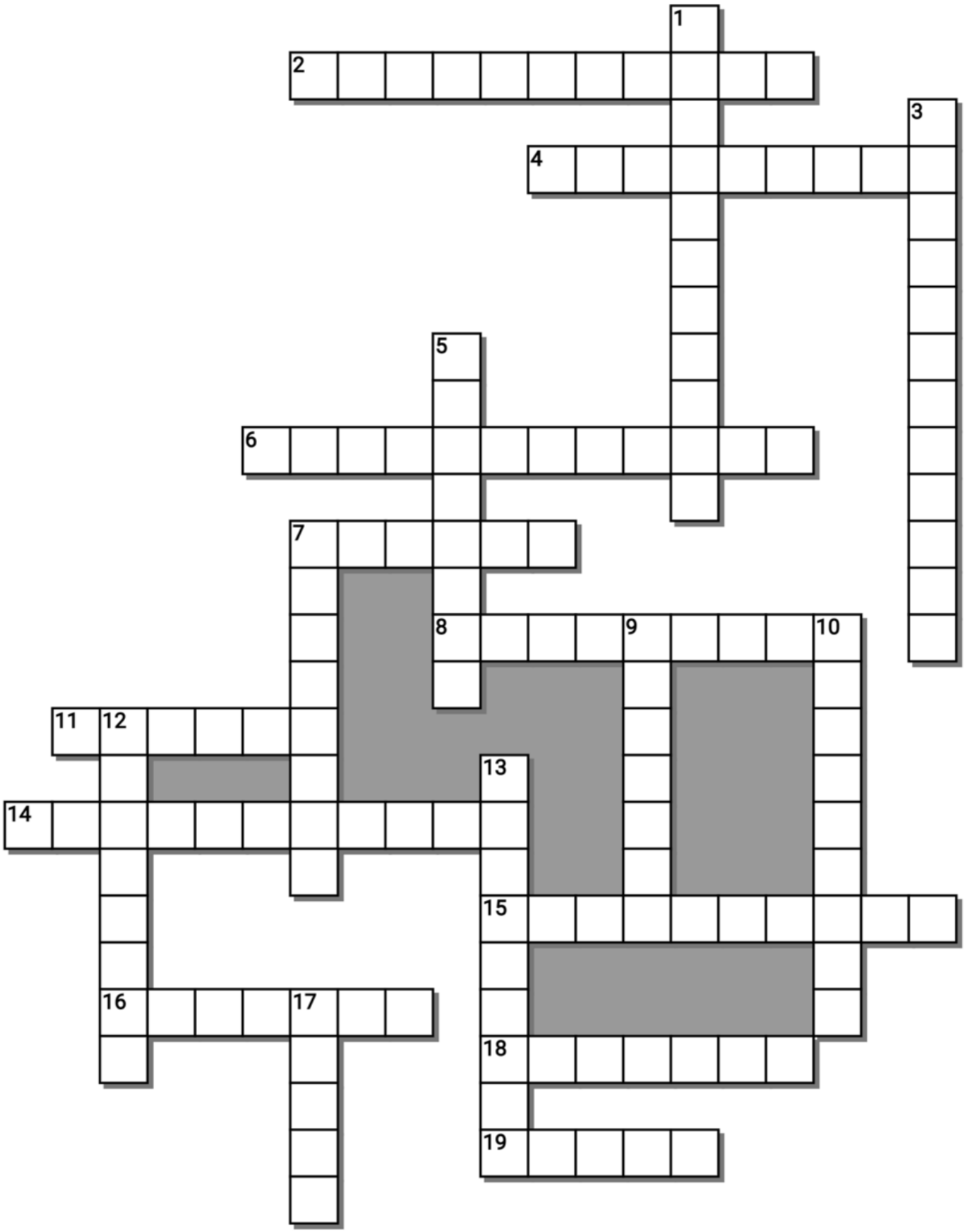
Down

1. The ability of an organism or cell to maintain balance.
3. The _____ system of an organism, also known as the genital system, is the biological system made up of all the anatomical organs involved in sexual reproduction.
5. Form Follows _____. Parts of the body are shaped to perform a particular job.
7. The _____ system is your body's central framework. It consists of bones and connective tissue, including cartilage, tendons, and ligaments.
9. The _____ system is a highly complex part of an animal that coordinates its actions and sensory information by transmitting signals to and from different parts of its body.
10. The _____ system is the system of an organism's body that performs the function of excretion, the bodily process of discharging wastes. ... There are several parts of the body that are involved in this process, such as sweat glands, the liver, the lungs and the kidney system
12. The _____ system is composed of specialized cells called muscle fibers. Their predominant function is contractibility. Muscles, attached to bones or internal organs and blood vessels, are responsible for movement.
13. The _____ system, or lymphoid system, is an organ system in vertebrates that is part of the circulatory system and the immune system. It is made up of a large network of lymph, lymphatic vessels, lymph nodes, lymphatic or lymphoid organs, and lymphoid tissues
17. A group of different tissues with a specific job

----------teacher can remove this word bank to make puzzle more challenging----------

Possible Answers

ANATOMY, CELLS, FUNCTION, HOMEOSTASIS, IMMUNE, NERVOUS, ORGAN, ORGANELLE, PHYSIOLOGY, SYSTEM, TISSUES, CIRCULATORY, DIGESTIVE, EXCRETORY, LYMPHATIC, MUSCULAR, ORGANIZATION , REPRODUCTIVE, RESPIRATORY, SKELETAL



Part 1 Levels of Biological Organization

Name:_____

Part 1 Lesson 1

Working in small groups, Name the Organ of the human body and the system it belongs to if you know it. -Let's see what you already know. (For Fun)

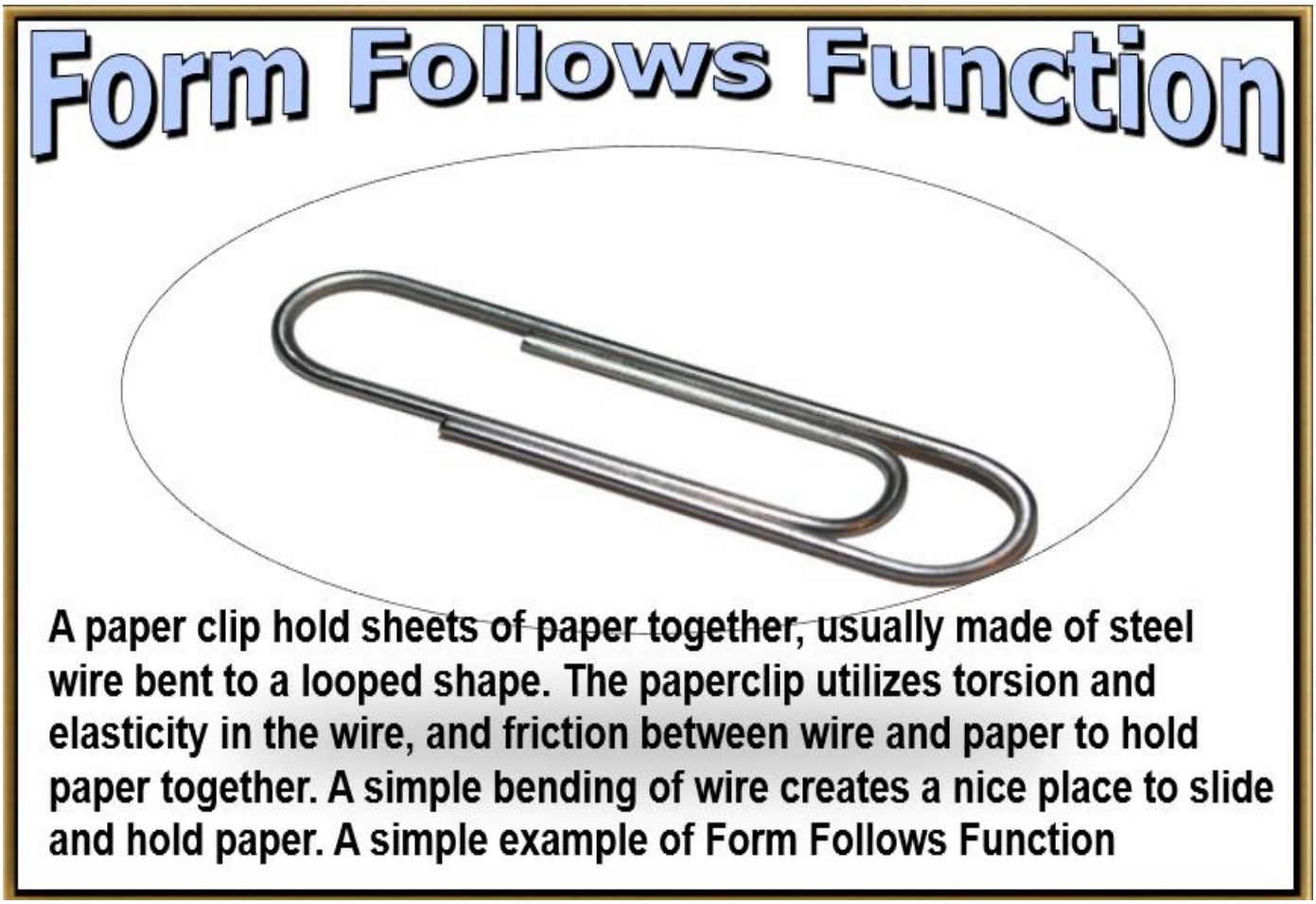
1) LIVER	2) STOMACH	3) INTESTINES	4) BRAIN
5) HEART	6) PANCREAS	7) KIDNEY	8) LUNGS
9) BLADDER	10) SPLEEN	11) GALL BLADDER	12) RECTUM
13) TRACHEA	14) ESOPHAGUS	15) TESTICLE	16) EAR
17) THYROID	18) UTERUS	19) AORTA	20) TONGUE

Bonus= JULIUS IRVING

Anatomy: The science of the shape and structure of organisms.

(FFF) Form Follows Function: Parts of the body are shaped to perform a particular job.

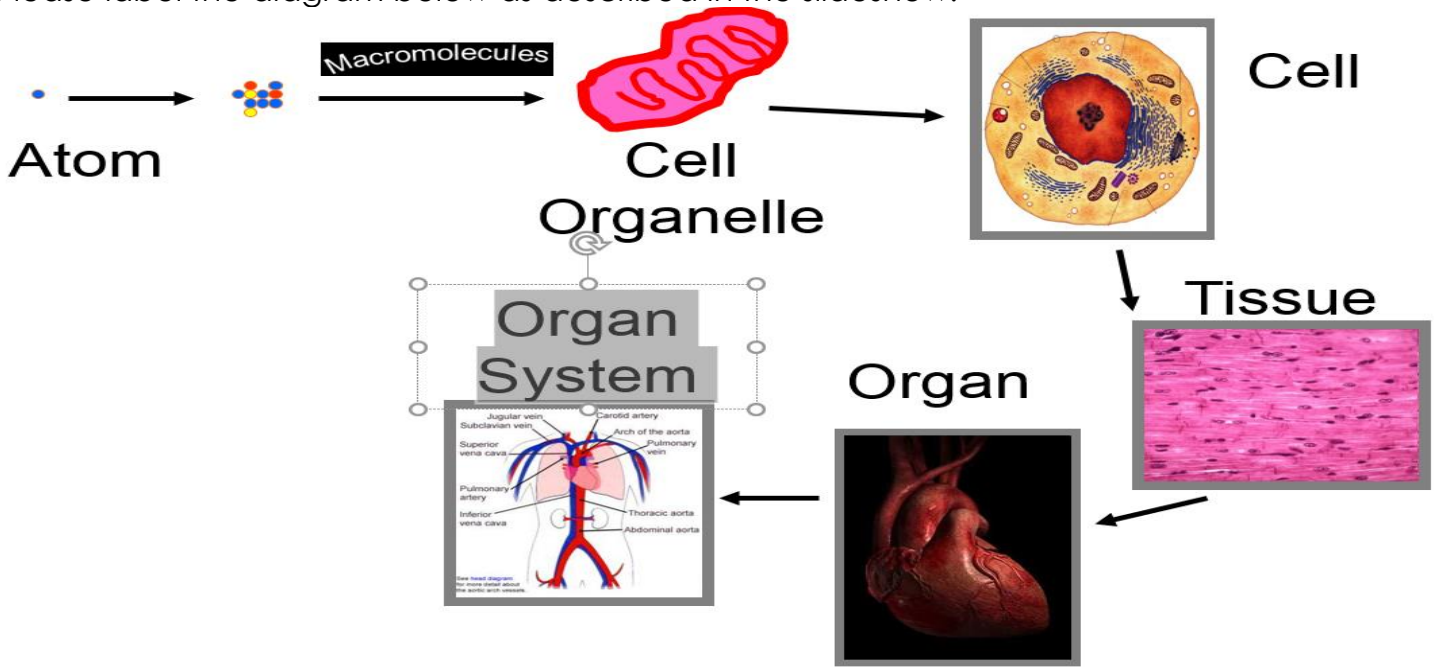
- Students will pick an object with eyes closed.
- Make a quick sketch below.



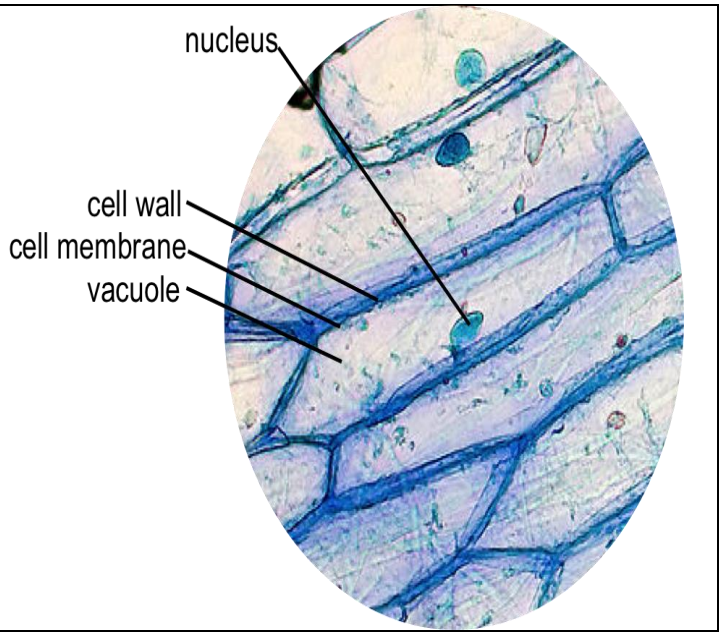
Write a 3-5 sentence paragraph describing how the objects form follows its function.
Answers will vary, but how does the students object shape/form help it to be good at doing a particular job

Part 1 Lesson 2 Levels of Organization

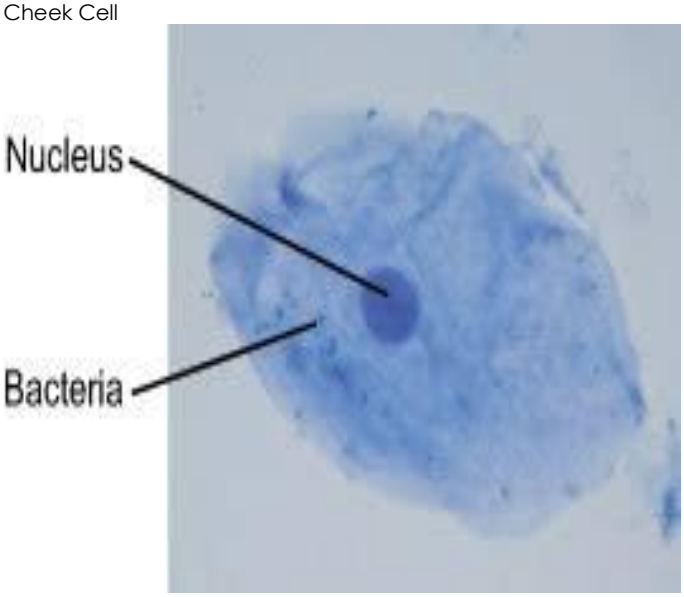
Please label the diagram below as described in the slideshow.

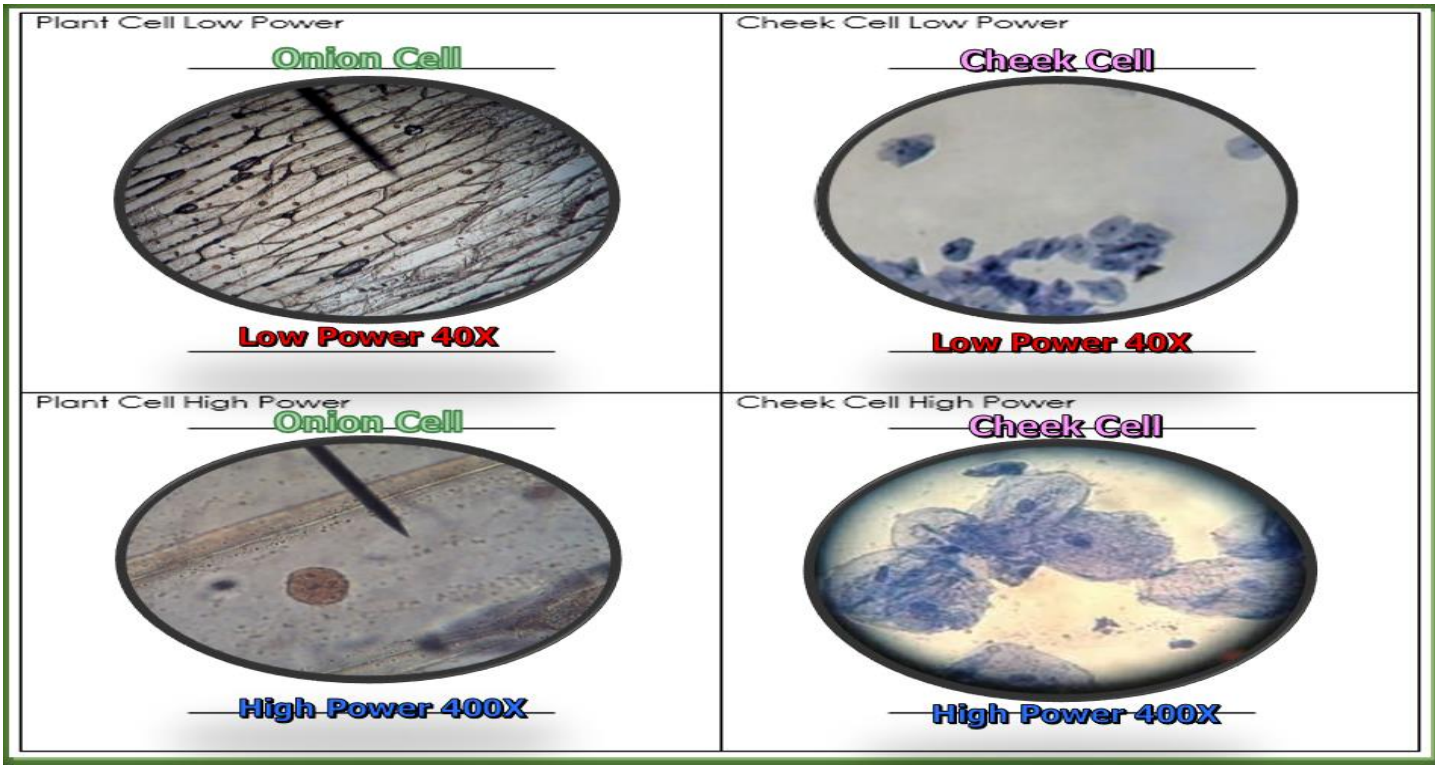


Take some images or sketch a cheek and onion cell at low and high power. Please describe the resolution



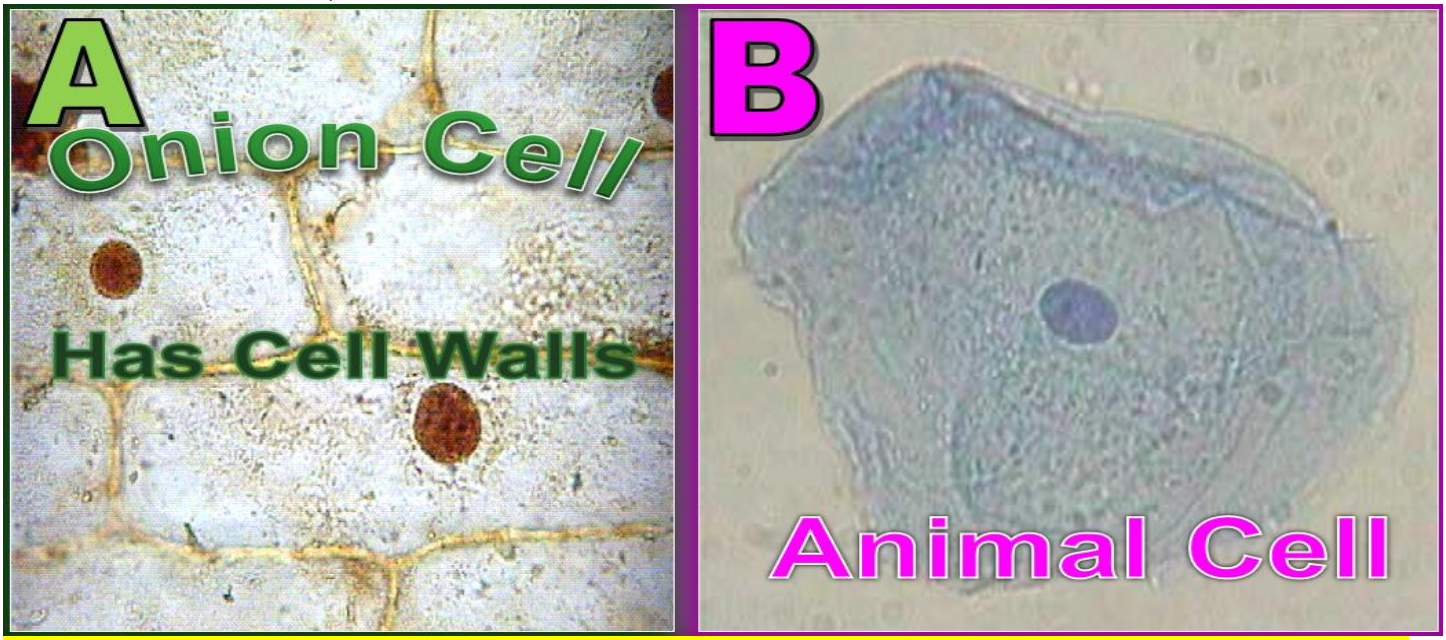
Cheek Cell





Part 1 Lesson 3 Cells and Tissues

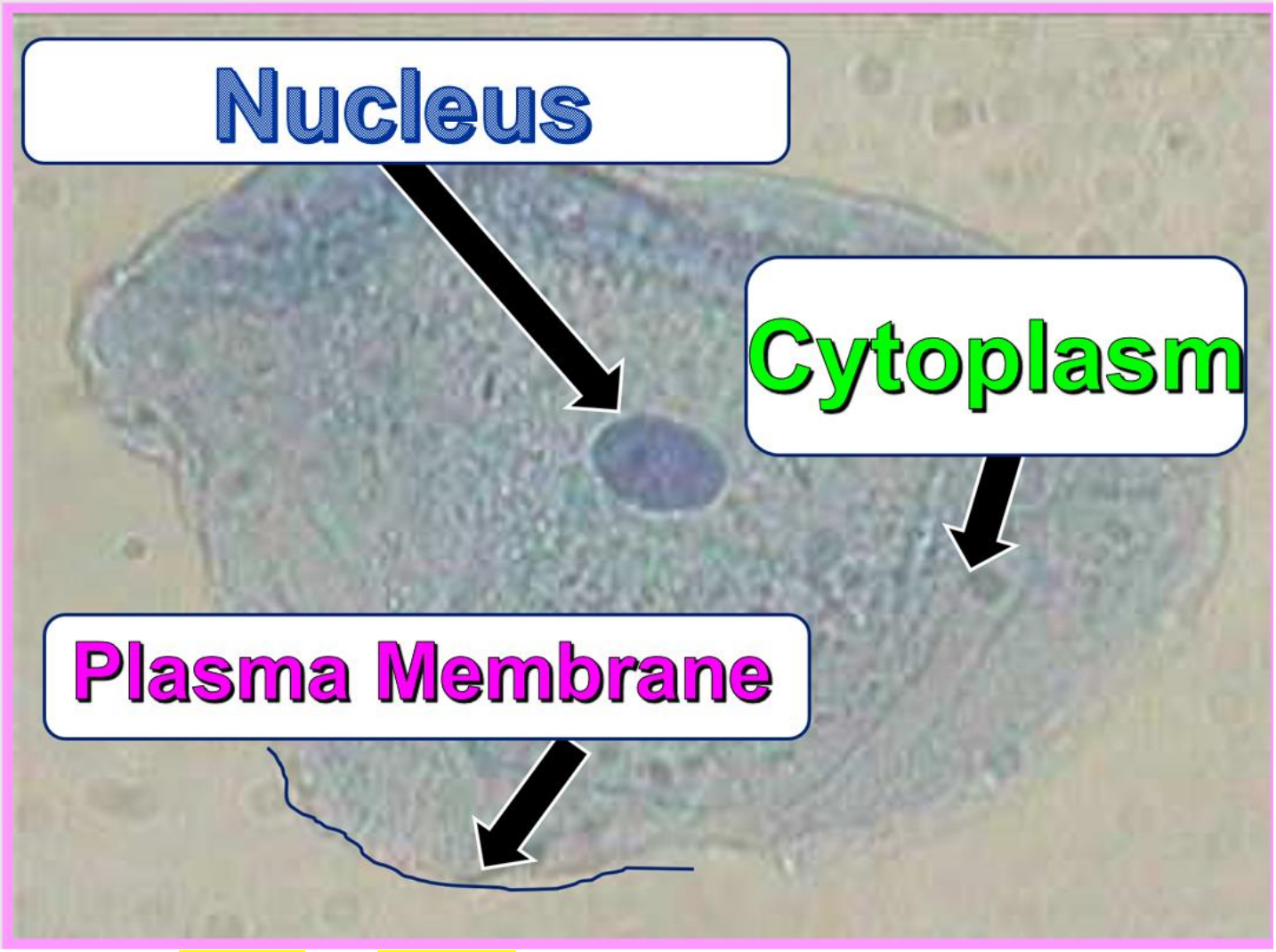
Which is a cheek cell, and which is an onion cell? What is the difference?



Major structural differences between a plant and an animal cell include: Plant cells have a cell wall, but animals cells do not. Cell walls provide support and give shape to plants. ... Plant cells usually have one or more large vacuole(s), while animal cells have smaller vacuoles, if any are present.

Name the parts of a cell below as described in the slideshow

Top Nucleus



Cells are the structural and functional units of all living organisms.

Humans have some 37.2 Trillion

Multi-cellular (More than one cell)

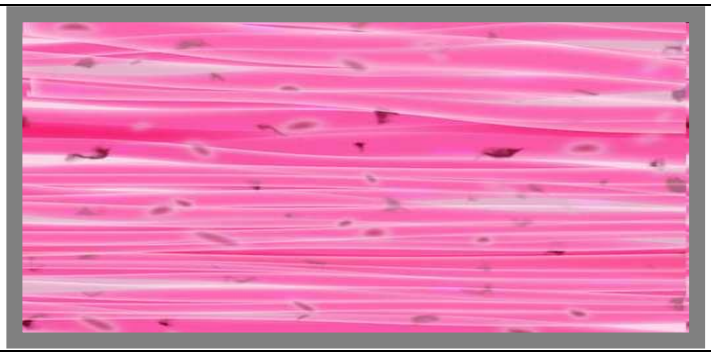
Protists, Archaea, and Bacteria have 1 - Unicellular

◊ Name four different types of **cells** found in the human body

1.) Absorbing Cells such as those in your intestines aid in digestion.	2.) Assembly Cells: Cells that put chemical substances together. –Break down food, produce hormones.
3.) Movement Cells: Cells that can contract and shorten. Muscle Cells.	4.) Nerve Cells, Sex Cells, Fat Cells, Bone Cells, Skin Cells…

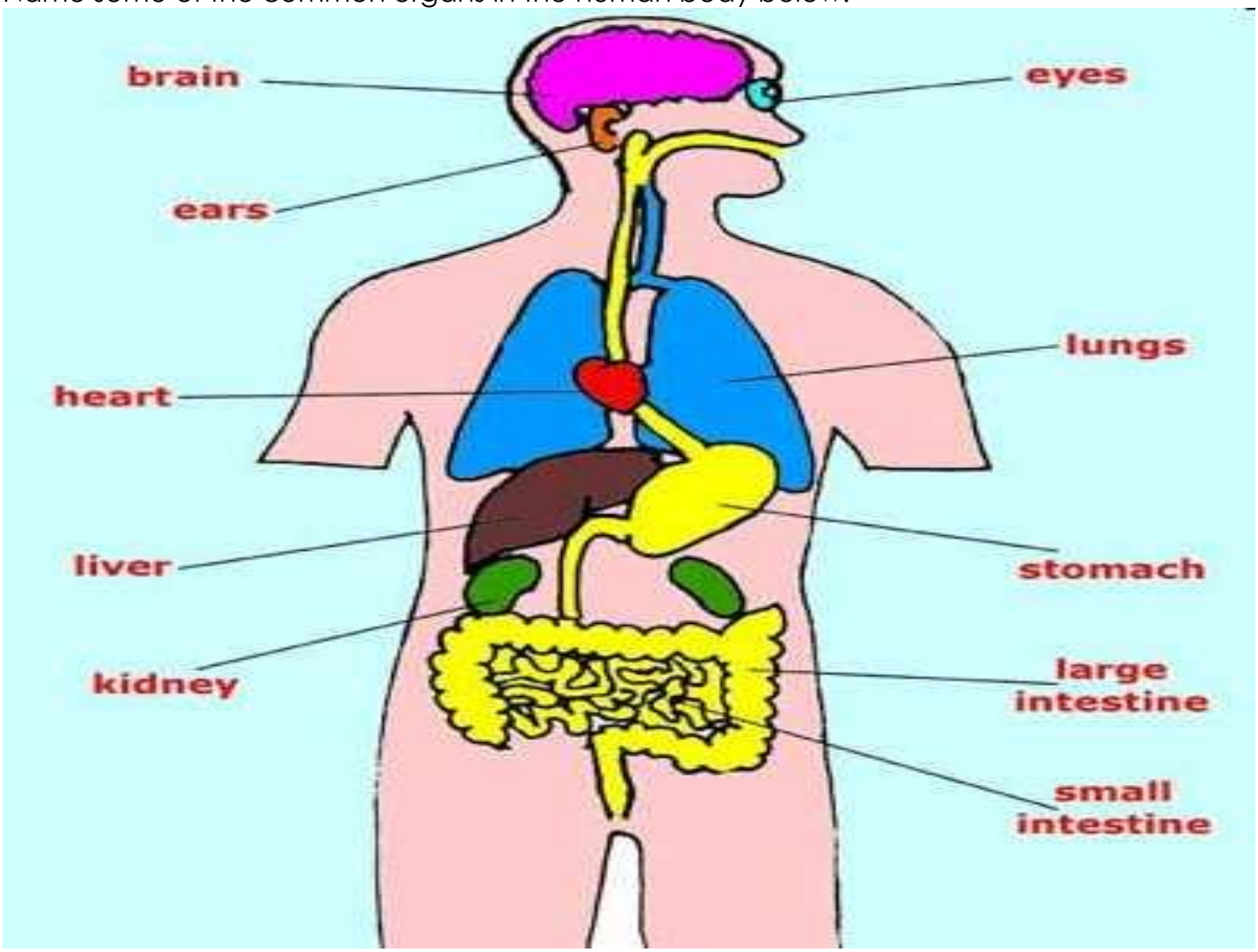
◊ Name three different types of **tissues** found in the human body

1.) Muscle Tissue: Can contract / shorten.	2.) Bone Tissue, also connective tissue such as ligaments
3.) Nervous tissue which creates the brain	◊ Draw a body tissue in this box



Tissue: A group of similar cells that perform the same function
Organ: A group of different tissues with a specific job

Name some of the common organs in the human body below.



Write down the names of several organs in the human body in the spaces below. The last letter of number 1 must be the first letter of number 2, and so on. Match the last letter of the organ to the first of the next.

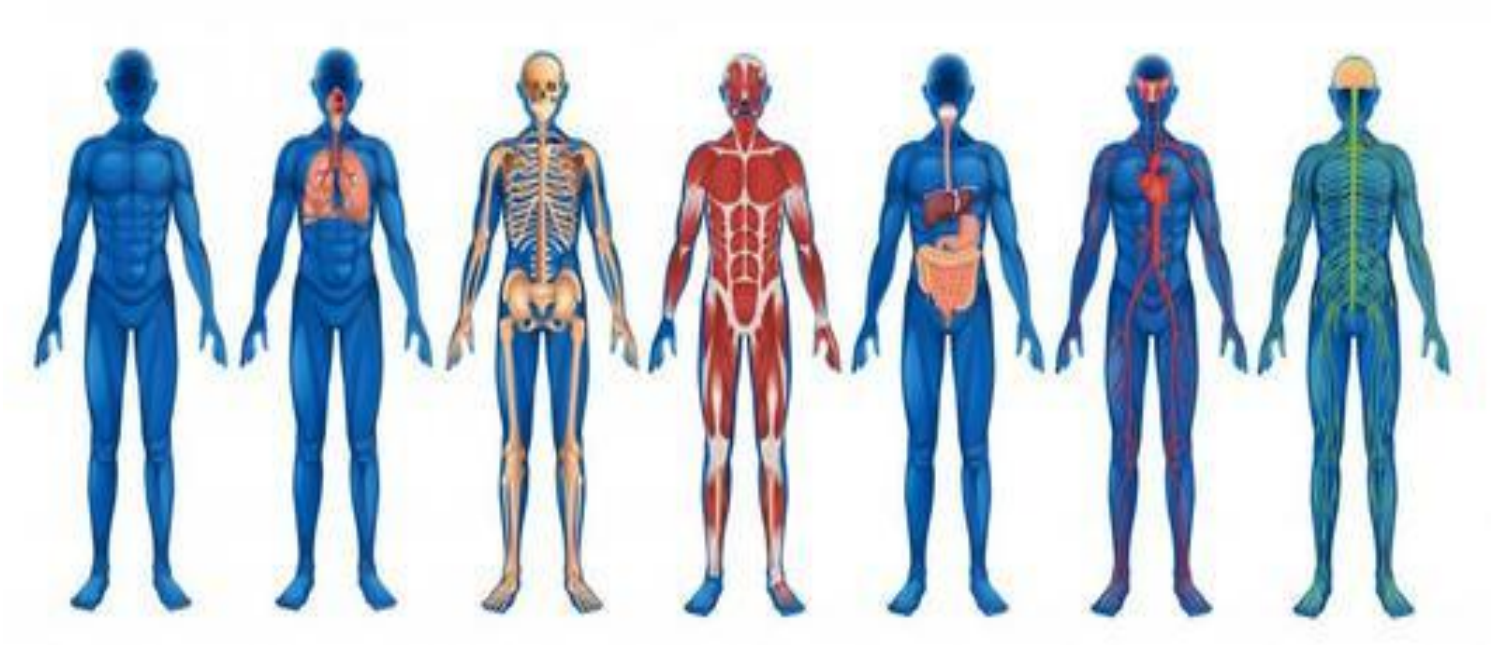
Just one example…. Large Intestine► eyes ►small intestine► ears ►stomach

ligament◄ skull ◄ epiglottis◄ tongue ◄heart

Part 1 Lesson 4 Organ Systems and Homeostasis

Organ System: A group of organs that work together to perform a specific job.

Name a few Organ Systems in the Human Body



Integumentary System "Skin"	Respiratory System	Skeletal System	Muscular System	Digestive System	Circulatory System	Nervous System

Quiz 1-10. Levels of Biological Organization.

- Word Bank: Is it a cell, tissue, organ, organ system, or individual.

1) Organ, Heart	2) Organs System, Digestive System	3) Organ System, Respiratory System
4) Tissue Tendon	5) Cell, Animal Cell	6) Individual Organisms, Dr. Doolittle
7) Tissue Muscle	8) Organ, Reproductive System	9) Tissue, Brain
10) Organ System, Nervous System	Bonus Indiana Jones and Temple of Doom – Organ Heart	

Homeostasis: The ability of an organism or cell to maintain balance.
Regardless of outside conditions.

Everyone needs to record pulse for 15 seconds and record number in journal.

- Practice a few times before we begin.
- Don't use your thumb, use your fingers.

Practice Pulse #1 30-40 beats per minute	Practice Pulse #1 30-40 beats per minute	Practice Pulse #1 30-40 beats per minute	Practice Pulse #1 30-40 beats per minute

Prediction for pulse after one minute of exercise _____? 5 minutes_____?

Resting Temperature _____
Prediction of Temp after 5 minutes of Exercise_____?

Duration	Pulse Rate 15 sec. x 4 and temperature
Resting (Baseline data)	
1 minute of jog in place / jumping jacks -Rest in between and get pulse rate back to baseline	
5 minutes of jog in place / jumping jacks	

How long after the 5 minute drill does it take for your pulse to reach its resting / base line
#1.) What was the increase in pulse rate from resting (baseline) to the 5 minutes of exercise? Please use data in your response.
Answers will vary, but the data should show an increase in heart rate. Your body needs more oxygenated blood to break down sugar to run your muscles, thus an increase in breathing rate / pulse should occur.
#2.) How did temperature change from baseline to the 3-5 minutes of exercise?
Answers will vary but you should notice a very slight increase in temperature. This heat transfers to the blood which is circulated throughout the body by the heart. Important note: Your temperature increased only slightly. Your temperature did not increase in the same way your pulse did. If it did, you would be dead.

#3) Describe the changes your body went through from the start of this activity until the end? Think Homeostasis.
Answer: Your body needs to maintain a homeostasis with the environment. As you exercised, you needed more oxygen so your pulse increased. At the same time you needed

to cool down so increased blood traveled to the skin and stimulated sweat glands. Sweat cools the body as it evaporates.

◊ Please describe a few ways your body maintains homeostasis with your environment.
Body temperature control in humans is one of the most familiar examples of homeostasis. Normal body temperature hovers around 37 °C (98.6 °F), but a number of factors can affect this value, including exposure to the elements, hormones, metabolic rate, and disease, leading to excessively high or low body temperatures.

Part 1 Lesson 5 Wrap-Up and Quiz

Levels of Biological Organization Quiz. 1-10 ten Points each, 5 Point Bonus.

1) C.) Form Follows Function	2) D.) Cellular Organelle → Cell → Tissue → Organ → Organ System → Organism	3)A=Animal Cell B=Plant Cell
4) F.) 30,000,000,000,000 Cells	5) E Absorbing Cells	6) Smooth Muscle Skeletal Muscle Cardiac Muscle
7) D Organs	8) A – Lungs, B-Liver, C-Kidney, D-Large Intestines, E-Small Intestine	9) Homeostasis
10) B.) Tissue, Organ, Organ System	*11) Bonus Movie Epic	

Score out of 100% _____

Notes:

Across

2. The _____ system is made up of blood vessels that carry blood away from and towards the heart
4. The human _____ system consists of the gastrointestinal tract plus the accessory organs of digestion
6. The major levels of _____ in the body, from the simplest to the most complex are: atoms, molecules, organelles, cells, tissues, organs, organ systems, and the human organism
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16. The science of the shape and structure of organisms
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Down

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