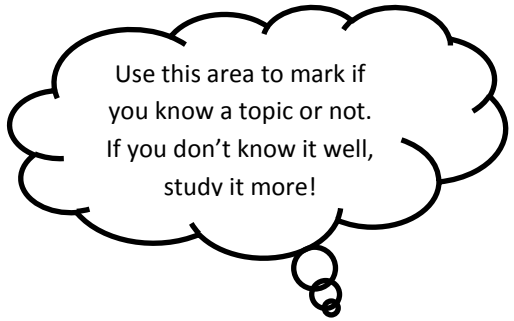
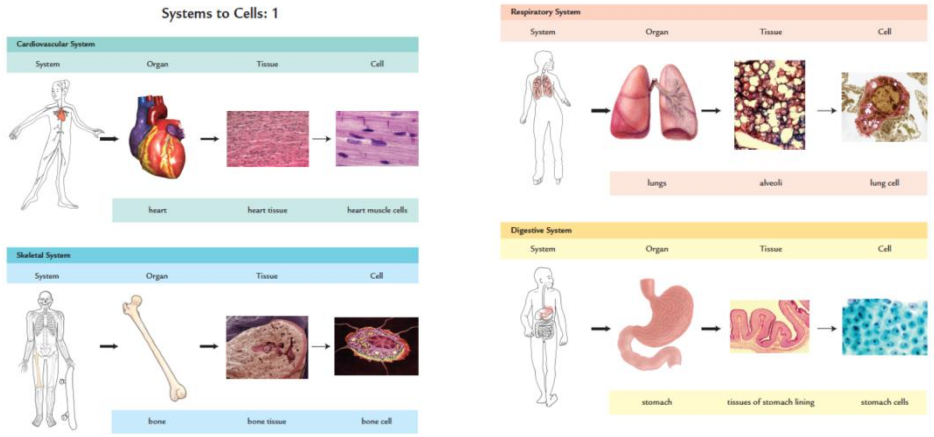
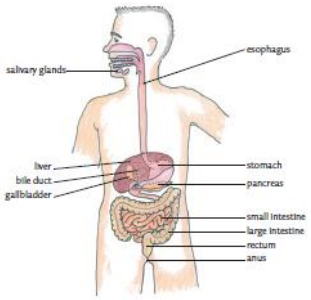
Body Works – Study Guide
KEY

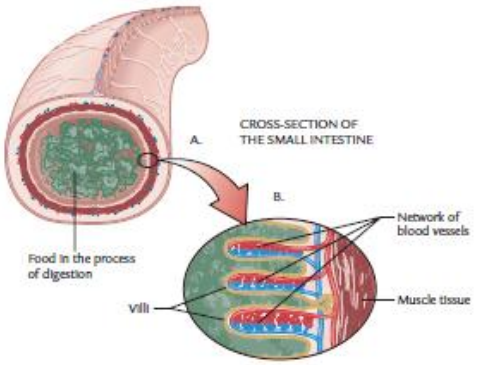
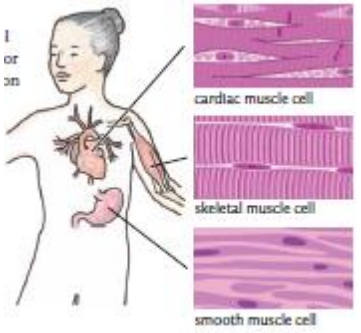
I will ask you to turn in your OWN study guide on the day of the test A copy of this study guide key does not count as evidence. You may also turn in other evidence if you choose. You MAY NOT retake the test or make corrections to the test if you do not prove you have studied in the first place.

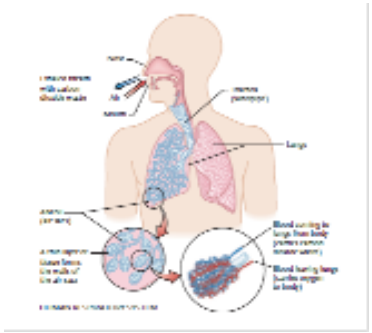
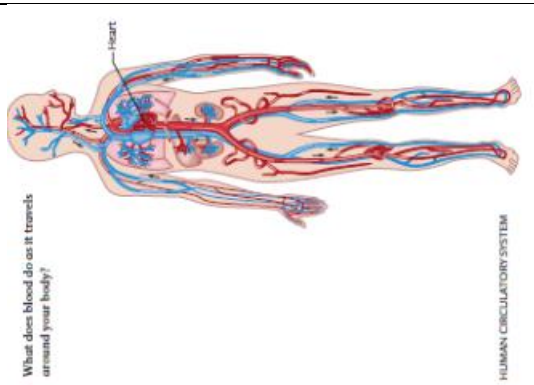


7.3.7 – Describe how various organs and tissues serve the needs of cells for nutrient and oxygen delivery and waste removal.

Notebook/ textbook page(s) to look up	Question/topic:	Answers/information (descriptions, diagrams, examples, etc.)	I know this!	IDK???
Act. 11	What are the **effects of alcohol** on a person's body? What body systems are affected?	☐ Alcohol **impairs** a person (they are affected either physically or mentally). ☐ **Qualitative** evidence to see the effects would be to how they **look and behave** (follow a moving pen w/ eyes, listen and follow directions while performing a simple task - - these things are not easy for a person who has been drinking to do; sometimes vision is blurred and speech is slurred, it may be hard to control balance (stagger or fall down). ☐ Other things can happen to a person to cause these qualitative symptoms and have nothing to do w/ drinking (for example, a stroke) ☐ **Quantitative** evidence (uses number)to see the effects would be to **measure the percentage of alcohol** in the breath (breathalyzer), blood (blood test), and urine (urine test) ☐ Alcohol effects **ALL parts of the body** (absorbed in stomach and small intestine, goes into blood stream where the heart pumps the alcohol to all parts)		
Act. 12	What is **structure**? What is **function**? How are they related?	☐ **Structure** is the way than an organ or body part is **put together**, including its **shape** and they **types of tissues** or **other structures** that form it. ☐ **Function** is the **specialized action/activity/job** performed by a system, organ, body part or device. ☐ These are related since the **shape(structure) of something often lets it do its job (function)** - for example, the inside of the small intestine has villi (structure) - the villi increase the surface area of the inside of the small intestine allowing it to absorb nutrients better.		
Act. 12	What are the human **body systems**? What are the **functions** of these systems?	See Student Sheet12.1a, 12.2b (Functions of the Human Body Systems), 12.2a, 12.2b (Human Body Systems) in your notebook.		

Act. 12	What **organs** are parts of each system? What are the **functions of these organs**?	See Student Sheet12.1a, 12.2b (Functions of the Human Body Systems), 12.2a, 12.2b (Human Body Systems) in your notebook.		
Act. 12	How is the human body **organized** in terms of **cells, tissues, organs, and body systems**? What is the **relationship** among these structures in the human body?	See Systems to Cells in your notebook. ☐ Cells are the smallest part of the human body. ➔ A group of similar cells working together to perform a particular function is a tissue. ➔One or more tissues make up organs and perform a function. ➔ Several organs working together to perform a function are a body system. ☐ Cells make tissues, tissues make organs, and organs make body systems. 		
Act. 13	What does the **liver** do for your body? (Why is it important that it works properly? What happens if it doesn't work properly?	☐ **After food is broken down, your blood carries the substances you've digested to the liver**. ☐ The liver controls what gets stored or filtered out. ☐ The liver breaks down toxins that can cause damage to your body (such as alcohol). ☐ The liver helps digest fats and helps control (or regulate) how much cholesterol and sugar are in the blood. ☐ If your liver doesn't work properly, toxins continue to circulate your body; depending on the toxin or the results can be cirrhosis, hepatitis C (a disease caused by a virus).		
Act. 13, Act. 14, Act. 15	What is the function of the **digestive** system? What organs are parts of the digestive system?	☐ Food breakdown – see row below this row ☐ Nutrient and water absorption, waste removal.  THE HUMAN DIGESTIVE SYSTEM		

Act. 14	What **is mechanical breakdown**? What is **chemical breakdown**? Why are these two forms of breakdown important?	☐ **Mechanical** breakdown of food - food is the same, just smaller pieces (example: chewing food and churning in stomach) ☐ **Chemical** breakdown of food – food is broken down into even smaller pieces, separating into things like nutrients. (example: enzymes in your saliva, acid in your stomach, pancreas reduce acid levels, bile from your liver breaks down fat) ☐ You need **nutrients** to use as a source of **energy** and for **growth**.		
Act. 15	What are **nutrients**? Why are they important and how does your body **absorb** them?	☐ **Nutrients** are chemicals that an organism takes in from its environment to use as a source of energy and for growth. ☐ Your body **absorbs** nutrients in the **digestive system**. Specifically in the small intestine. ☐ Nutrients are **absorbed into the blood** across the wall of the small intestine. **Villi** line the walls of the small intestine and have blood vessels running through them. The blood carries nutrients to all parts of the body. *Nutrients are absorbed by the blood across the wall of the small intestine. Fingerlike projections from the wall of the small intestine are known as villi (VIL-eye) (singular, villus). Nutrients must pass through villi and the walls of tiny blood vessels to enter the blood.*  		
Act. 16	What are the functions of your bones (why are bones important)?	☐ Bones attach to other bones with ligaments, and attach to muscles with tendons. Together, these structures **move** your body and give it **structure** and **support**. ☐ Bones also: -**protec**t internal organs, -**make blood cells** :red blood cells (to carry oxygen to all parts of the body and bring back carbon dioxide, a waste), white blood cells (to fight infection and germs; part of your immune system), and platelets (helps blood clot when tissue has been damaged -maintain the bodies **calcium** balance		
Act. 16	What is the function of muscles? What are the three types of muscles? How are cardiac muscle cells specialized to help your heart beat?	☐ The function of muscles depends on the type of muscle. ☐ **Skeletal muscles** attach to your skeleton and move your bones. ☐ **Cardiac muscle** is the muscle tissue that is in your heart. (These muscle cells are **specialized to beat** on their own!) ☐ **Smooth muscle** controls your internal organs; for example they contract to move food through the digestive system.  		

Act. 17	What are the organs and parts of the respiratory system? What does the respiratory system have to do with oxygen and carbon dioxide?	 ☐ The organs and parts of the respiratory system include: the nose and mouth, trachea (windpipe), lungs, bronchial tubes, and alveoli (air sacs). ☐ You inhale air (which is a mix of several gases). You lungs **absorb oxygen** through the blood vessels in the alveoli. From there the **oxygen-rich blood is carried to the heart** where it is then **pumped throughout the body.** When the blood **comes back** carrying **carbon dioxide** (a waste), your lungs exhale.		
Act. 16, Act. 17, Magic School Bus Works Out Notes	What is the function of **blood**? How does **it get to all parts** of the body?	☐ The function of the blood is **to carry nutrients and oxygen** to **all parts of the body**, like your muscles. ☐ It also **carries back wastes**, such as toxins and carbon dioxide, so that the body can get rid of these things. (Through systems such as the respiratory system and excretory system.) ☐ This is your **circulatory system**. Think of it as your blood circulating, or moving around, your body (even though it doesn't move in a circle). 		
Act. 15 Act. 17	What are some of the **wastes** your body produces? How are they produced?	Your body produces several wastes. ☐ The most obvious is waste that you cannot digest, called **solid waste** (feces or poop, ha ha, she said poop). ☐ There is also the **carbon dioxide** you exhale. Your body doesn't need this either.		
Act. 15, Act. 17	What organs in your body is there increased **surface area**? What does this increased surface area allow those organs to do better?	☐ Your small intestines have **villi** lining the inside. ☐ The **alveoli** in the lungs are shaped like grapes. ☐ Both of these structures **allow more blood vessels**, specifically capillaries (really, really tiny vessels) **to touch the surface**. ☐ **More blood vessels touching the surface = increased surface area = more absorption of nutrients/oxygen at one time = organs working quicker/more efficiently**