**\*\*\*KEY\*\*\***

**Energy Flow, Physical/Chemical Changes, Energy Transformation Test Review**

**You should read over your entire student journal and student guide, as well as study your vocabulary and the pictures on the website. Don’t forget, you can look at the STEMScopedia.**

**From your 7.6B: Physical and Chemical Changes Student Journal**

1. What are three ways to physically change a substance?

Change the size, shape, or texture of the substance.

1. What must have happened for a chemical change to have occurred?

There must be a new substance.

1. What are the signs/clues to a chemical reaction? (Include the extra one I told you about in class)

Temperature change or light emitted

Color change

Odor change

Formation of a solid (precipitate)

Formation of a gas

1. Where are physical changes in your digestive system? Why are these physical?

Chewing with your teeth and your stomach churning. The food is not being changed into a new substance.

1. Where are chemical changes in your digestive system? Why are these chemical?

Mixing the food with the saliva in your mouth, the acid in your stomach, or juices in your small intestine. The food is changed into a new substance. It is no longer what you ate.

1. What is in your stomach that causes chemical changes?

Hydrochloric Acid

**From your 7.7B: Organism Energy Transfers Student Journal**

1. What kind of energy is in food?

Chemical energy

1. What is energy measured in?

Calories

1. Why do we need energy?

To allow us to move our muscles. We need energy for all of our body systems to work.

1. What moves the energy around your body?

Blood

1. What type of energy is produced during digestion?

Chemical energy for plants is changed into chemical energy for humans. A little of the chemical energy is also transformed into thermal energy.

1. What are all of the energy transformation during digestion? (Whoops, I meant after)

The chemical energy made during digestion is transported to muscles and transformed into mechanical energy. Then the mechanical energy is transformed into thermal energy. Which is why you get hot when you exercise.

**From 7.6C: Molecules Student Journal, Student Guide, and Foldable:**

1. What are the 3 parts of the human diet?

Carbohydrates, Proteins, Lipids

1. Why must large molecules be broken down?

So they can fit in the blood stream.

1. What does saliva do for a human?

Starts the chemical breakdown of starches.

1. What is an enzyme?

Biological chemicals that help speed up complex chemical reactions

1. What are small carbs generally called?

Simple sugars

1. Where are carbs digested?

Mouth, Stomach, Small Intestine

1. What two things are required to help break down protein?

Stomach Acid and enzymes

1. What are small proteins generally called?

Amino Acids

1. Where does protein digestion take place?

Stomach and Small Intestine

1. Which large dietary molecule is the most highly concentrated source of energy?

Lipid

1. Where do fats break down in the digestive system?

Small Intestine

1. What digestive juice does the human body use to break up the fats into tiny droplets?

Bile

1. What makes this juice and where is it stored?

The liver makes bile and the gall bladder stores it.

1. Small lipid molecules are generally called?

Fatty Acids

**From 7.5B: Cycling of Matter Student Journal and Student Guide:**

1. Describe evaporation.

Liquid water from the lithosphere turning into water vapor in the atmosphere.

1. Describe the “spheres” of Earth?

Litho – rocks, surface Atmos – gas around Earth

Hydro – water Bio – living organisms

1. Describe transpiration.

Water is pulled into a plant though the roots. The plant moves the water up through the stem. The water is released through the leaves and evaporated.

1. What are 3 large water reservoirs?

Oceans, glaciers, groundwater

1. Describe condensation.

Water vapor in the atmosphere turning into liquid water.

1. Describe precipitation.

Water falling from the sky.

1. What is the difference between ground water and surface water?

Ground water in underground and surface water is on the surface.

1. What element makes up the highest percent of the atmosphere?

Nitrogen

1. What makes nitrogen in the air available to all living organisms?

Legumes

1. What form of nitrogen can plants and animals use?

Nitrates

1. What two ways do nitrates return to the soil?

Animal feces and decaying plant and animal matter

1. What organisms are responsible for getting the nitrates back in the soil?

Bacteria and fungi

1. How does nitrogen get from the humus back into the atmosphere?

Bacteria

1. Carbon is carbon dioxide in what “sphere”?

Atmosphere

1. Where is carbon in the biosphere?

Plants and animals

1. How does carbon get back in the soil?

The process of decay

1. What are two ways carbon gets back in the atmosphere?

Burning fossil fuels, animals breathing

1. What is one way to demonstrate the role of bacteria in decomposition?

Compost bins

1. What does composting do to organic material?

Speed up the natural rate of decomposition of organic material

1. Why is the amount of water in a compost bin important?

Too dry, bacterial activity slows. Too wet, bacteria can’t get oxygen.

1. What happens if the oxygen level is to low in the compost bin?

Only bacteria producing unpleasant odors grow

1. Why should the temperature of a compost bin be between 120° F and 150° F?

It’s the ideal temperature for bacteria growth.

1. What happens if there is too much nitrogen and not enough carbon in a compost bin?

Ammonia is released into the air.

**Review your vocabulary for each unit and your digestive system Cornell notes.**