**7th Grade Project Assignment Sheet**

The due date is **Monday, March 25, 2013**.

You will have two options for this assignment:

**Option #1 – Cell Model**

**Constructed out of 3D objects.**

Select either a plant cell or an animal cell.

The model should be on a firm background ( eg. plywood or corrugated cardboard).

You may also choose to sew/quilt a cell, using a soft, cloth background.

Use a variety of materials (eg. Play dough, clay, twigs, Legos) – I recommend using what you already have around the house or in the yard.

Cell parts should be painted, if necessary, to differentiate them from other cell parts of similar shape/size.

The cell, including backing material, should be no larger than 20” x 17” and no smaller than 15” x 12.”

Your cell model must include a key to help identify the cell parts.

**Option #2 – Human Body System**

**Traditional research report.**

Choose a system of the body.

For example:

Muscular System Nervous System

Skeletal System Circulatory System

Digestive System Respiratory System

You will do research on that system, using **at least three sources**.

Cite your sources in correct format.

Your textbook is one acceptable source.

Requirements: At least a **two page** typed report. Use black ink.

The report should be in MLA style.

A minimum of **two full size (8 ½” x 11”) sketches**, including labels, are required. Artwork is ***done by hand*** (do not just print images from the internet or attach magazine pictures). You may use internet images/magazine pictures/textbook images for a model, but the art work is yours.

Research reports should cover the following information (find your system below):

**Muscular System**: 3 types of muscle cells/tissue (smooth, cardiac, & skeletal), how muscles work with tendons/bones to move the skeleton, contraction/relaxation (flexion/extension), voluntary/involuntary contraction, how muscles work in pairs (eg. triceps & biceps), Peristalsis (digestive tract - smooth muscle tissue).

**Nervous System**: Brain (cerebrum, cerebellum, medulla), eyes, Spinal cord, Nerves/neuron cell structure (dendrites, cell body, axon), Sensory neurons (effectors/receptors), motor neurons, 5 senses, stroke/other diseases.

**Skeletal System**: Role of endoskeleton (gives shape, protects vital organs, supports the structure, attachment for muscles)Types of bones, Bone parts (periosteum, compact, spongy, Red Marrow &Yellow Marrow), Types of joints (see p. 362-263 in you textbook), ligaments, tendons, cartilage, broken bones/healing/x-Rays/casts/traction, role of calcium & phosphates, osteoporosis, appendicular skeleton vs. axial skeleton.

**Circulatory System**: Blood cells (white & red), platelets, hemoglobin’s function, heart (a double pump, chambers/valves), arteries, veins, capillaries, path of blood flow in body, interaction with lungs, heart disease, stroke.

**Digestive System**: Begins in mouth (saliva/amylase/breakdown of carbohydrates into malt sugar, role of teeth/tongue), esophagus, stomach (muscular churning/hydrochloric acid), small intestine (liver/gall bladder/bile, pancreatic juices, villi & food absorption)& large intestine (water absorption), ulcers.

**Respiratory System**: Mouth/Nose, pharynx, trachea, bronchus, lungs (bronchiole, alveoli [air sacs]), O2-CO2 exchange, diaphragm, effect of rest/exercise on respiration rate, asthma, effects of smoking.

**Excretory System**: Large intestine (solid waste), kidneys (nephrons/filtering), Liver, Ureters/Bladder/urethra(liquid waste), sweat glands (H2O & salt), lungs (CO2).