Station H

Words in RED are important-make sure you know them!

What you do:

1) The processes of **photosynthesis** and **cellular respiration** provide living things with **energy** for growth, repair and cellular functions.
   a) Describe where photosynthesis and cellular respiration take place in cells.
   b) Glue the diagram of a leaf from the **H - 1b** bag into your notebook.
      - Label the parts
      - Show where photosynthesis is occurring
      - Show where water and gases are entering and leaving the leaf
   c) Compare photosynthesis and cellular respiration using **Mat H - 1c** and the **H - 1c** card set.
   d) Build the **balanced equations** for photosynthesis and cellular respiration using the **H - 1d** card set.

2) How are cell functions regulated? How do cells “know” when to do certain jobs that are needed?
   a) Explain what a **catalyst** does. Discuss the following questions: Are all **enzymes** catalysts? Are all catalysts enzymes?
   b) Compare catalysts and enzymes using **Mat H - 2b** and the **H - 2b** card set.
   c) View the video at [http://tinyurl.com/j9bcwbd](http://tinyurl.com/j9bcwbd)
   d) Take a copy of the foldable in the **H - 2d** bag. Follow the directions for coloring, labeling, explaining terms, and making lists. Then glue the foldable into your notebook.
   e) Explain what each graph on **Mat H - 2e** indicates about enzyme action. What is the optimal temperature and pH level of enzyme reaction in humans? Why is it important for activation energy to be conserved?

3) Organisms must be able to maintain **equilibrium** of their internal systems when conditions, both **internal** and **external**, are changing. What word describes this balancing act?
   a) Compare systems the human body uses to communicate when changes need to be made by using **Mat H - 3a** and the **H - 3a** card set.
   b) Watch a short video which explains internal feedback loops at [http://tinyurl.com/ngzhrv6](http://tinyurl.com/ngzhrv6)
   c) Explain each of these components of an automatic control system using an analogy of a furnace thermostat:
      - Variable
      - Sensor (receptor)
      - Integrator (control center)
      - Set Point
      - Effector
   d) Explain the difference between **negative** feedback loops and **positive** feedback loops.
   e) Use **Mats H – 3e** and the **H – 3e** cards to demonstrate several feedback loops.

6) Tidy and reorganize all the station materials for the next group using them.