**Characteristics of Life Lab**

Purpose- To analyze and describe the life processes of an earthworm.

Introduction to the worm:

1. Use proper care and respect when handling living things.
2. Observe the worm with a hand lens. Use pages 694-699 in your textbook to help with the following.
3. Determine the difference between the head and tail end. The head end is closest to the clitellum (a band that circles the worm).
4. Draw a picture of the earthworm and label the head end, tail, clitellum.
5. Run your finger along the top and bottom of the worm. Do you feel anything?\_\_\_\_\_\_\_\_ The bristly feeling structures are called setae. What do setae do for the worm? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Answer the following questions using the book and the information you just obtained. Each life process is in bold faced print.

**Synthesis** (How do organisms get the food/energy they need; how do they build necessary molecules.)

Humans build our own proteins by using \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ found in our foods like \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

1. How does an earthworm get the nutrients it needs to build proteins?

**Transport** (How organisms get what they need to cells; how they move wastes from their cells to the organs of excretion)

Humans get what we need to cells by moving nutrients and wastes through our \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

1. Turn the worm so the dorsal side is facing you. This is the darker side. Try to locate a blood vessel running along the back of the worm. Can you see the blood moving through this blood vessel? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Excretion** (How organisms get rid of their waste and balance their fluids (pH, salt concentration, water))

Humans balance the level of salt, pH, and water by producing liquid wastes called \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

1. Look up the name of the structures that produce liquid waste for the earthworm. Each segment of the worm has these.

**Regulation** (How organisms control body processes- hormones, nervous system)

Humans have a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ that controls all of our life processes. We also have an \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ system with lots of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. You remember middle school, right????

1. Choose from the following items; flashlight, water dropper, cotton ball, pencil, finger, and list the responses to your chosen stimuli.

|  |  |
| --- | --- |
| Stimulus | Response |
|  |  |
|  |  |
|  |  |

**Nutrition** (How organisms break down and absorb foods. Heterotrophs consume and autotrophs make their own food by photosynthesis.)

Humans are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_because we eat!

1. Is an earthworm an autotroph or a heterotroph?

**Growth and Development** (metamorphosis, development in egg or in uterus, growth from seed or spore)

Humans create \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ which meet up to form a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. The \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ develops in a woman’s \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ until it becomes a baby.

1. How long does it take young worms to come out of their cocoon?

**Respiration** (How organisms exchange gases)

Humans breathe in \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and send it to our \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. It then enters the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. The \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ then gives \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ to the lungs. We then breathe out \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

1. Feel the skin of the earthworm. Describe the feeling. Can you see through the skin of the earthworm?

Look in the book to find out how the earthworm respires. Write your findings below.

**Reproduction** (sexual vs. asexual, eggs, seeds, spores, placental, type of fertilization)

Women have \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ that produce \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

Men have \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ that produce \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

Men and women have \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ to make a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

Count \_\_\_\_\_\_\_\_\_\_\_\_\_ segments down from the clitellum and look on the ventral surface. Use the hand lens to find the seminal receptacles and seminal vesicles. They are small holes.

1. Draw the segments with the reproductive structures and label the seminal vesicles and seminal receptacles.
2. Read about worm reproduction. What does it mean that worms are hermaphrodites?
3. How do they exchange sperm with each other?