

Name: \_\_\_\_\_ Date: \_\_\_\_\_ # \_\_\_\_\_

### Chapter 3: Earthworms Scavenge Organic Remains

What are Earthworms?

- **Invertebrates**
  - **Beetles are insects, but worms are not**
    - **Beetles have legs, wings, and hard bodies**
- **Bodies made of segments**
  - **Look like rings with grooves between them**
    - **Have 150-170 total**
    - **“Head” is first segment**
      - **No eyes, ears, or a nose**
      - **Nerves can sense light vibrations through soil**
  - **Saddle**
    - **Smooth band around body**
    - **1/3 of the way down the body from head**
  - **Anus**
    - **End of body (last segment)**

How do Earthworms Move?

- **Outside of body is long and thin**
  - **can tunnel through dirt**
- **Moves by squeezing two sets of muscles together**
  - **One set makes worm thinner and longer**
  - **Other set makes worm shorter and fatter**
- **Moves in waves changing from shorter to longer**
- **Bristles**
  - **Stick to ground and pull themselves ahead**
  - **Hold onto sides of burrows**

- **Harder for predators to pull out**
- **Slime**
  - **Helps them slide over the ground and move through tunnels**

#### **How do Earthworms Breathe?**

- **No nose or lungs**
- **Breathe through skin**
  - **Keep skin moist with help from slime**
    - **Oxygen from air dissolves into slime**
      - **Passes through skin and into blood**
      - **Five hearts pump blood through vessels**

#### **How do Earthworms Eat?**

- **Digestive system**
  - **Takes up most of body**
  - **Tube that runs length of worm's body**
    - **Food in through mouth, waste out through anus**
- **Eating**
  - **reaches out with mouth**
  - **Push out part of throat**
  - **Both pop back in to swallow**
- **Diet**
  - **Dead leaves and organic remains**
  - **Can also swallow dirt**
    - **Digest decayed organic remains mixed in**
- **Digestion**
  - **Use nutrients**
  - **Undigested comes out as droppings called castings**

#### **How do Earthworms Reproduce?**

- All earthworms have both male and female parts
  - Make cocoons around eggs
  - Slip cocoons off bodies so eggs can hatch in soil
    - Size of grain of rice
  - Baby worms hatch from ends of cocoons
    - About a month

#### What Kind of Earthworms Are We Looking At?

- About 2,700 types of earthworms
  - In one acre, could be more than one million
    - Eating leave castings and working through soil
- Can be separated into three major groups
  - Based on feeding and burrowing habits

#### Types of Earthworms

- Composting Earthworms
  - Live on top part of soil (8 cm from surface) with lots of leaf litter, mulch, and manure
  - Red wigglers and red tiger worms
- Shallow Soil-Dwelling Earthworms
  - Within 30 cm of the surface
    - Lots of random tunnels through animal pastures and compost piles
      - Pass soil through intestines, filling tunnels with nutrient-rich castings
        - Help mix topsoil and get air and water in the ground
  - Redworms
- Deep-Burrowing Earthworms
  - Don't tunnel around looking for food
  - Come up to the surface to look for leaves and other plant material
    - Pull down into burrows
  - Burrows are permanent and reach up to 2 meters down (6 feet)

- Help mix different layers of soil
  - Bring organic remains down and leaving castings at the top
- nightcrawler

#### Earthworms in the Soil

- Play important role in making healthy soil
  - Digging and moving in soil helps air and water get to young seeds and plant roots
  - Leave castings
    - “clean up” the environment
    - Rich in nutrients and minerals that plants need
      - Natural fertilizer for plants
        - Plants would not survive without waste being recycled
        - Animals that eat plants would not survive then either