

# Life Cycles

## Grade Level: 3

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### References:

### Benchmarks & Objective:

- LS-1: Compare the life cycles of different animals including birth to adulthood, reproduction, and death.
- LS-2: Relate animal structures to their specific survival functions

### Materials:

- Mealworms (both regular and Mighty Mealworms in a quantity larger than the number of students in the class)
- Observation boxes w/ magnifying tops
- A plastic spoon
- Oatmeal
- Apple slices
- A mealworm terrarium
- Science journals

### Target Concept:

To introduce the concept of an animal's life cycle and what stages it goes through in its life. Further, to introduce the various body parts of an insect and observe how environment effects the life cycle of an insect.

### Initial Introduction:

The initial lesson should begin with a review of relevant vocabulary (*e.g. life cycle, adult, pupa, larva, egg, metamorphosis*). Subsequent lessons can be preceded with a Type I writing assignment. Questions to ask would include:

1. Describe the life cycle of your mealworm.
2. What physical changes does your mealworm experience throughout its life?
3. Write about your mealworm's environment.

### Procedure:

#### Day Zero

1. Setup the terrarium by placing small filler pebbles in a clear plastic container
2. Place your mealworms in the container using the plastic spoon
3. Place oatmeal and apple slices in the terrarium

4. Place the lid on the container (be sure there are a number of holes in the lid)

#### Day One

1. Place one mealworm in each observation box and pass them out to the students
2. Pass out the students' science journals
  - a. Explain to the students that when scientist want to observe and study animals they are very careful with how they treat the animal and they are very detailed with their observations
3. Ask the students what types of observations they could make concerning the mealworms (you may have to help them come up with a complete list)
  - a. You should get questions such as:
    - i. How long is the mealworm?
    - ii. What color is the mealworm?
    - iii. How many legs does the mealworm have?
    - iv. How active is the mealworm?
    - v. How much does the mealworm weight?
    - vi. In what stage of life is the mealworm?
    - vii. How is the mealworm equipped to live in its environment?
    - viii. How does the mealworm's environment effect its life cycle?

*It is suggested that you do not weight the mealworms, as 3<sup>rd</sup> graders are more prone to hurt of kill the mealworms if handled directly.*

4. Write out a list of observations and measurements on the board then have the students perform each on the list and record their results in their science journal
5. The teacher should place a few mealworms in the refrigerator so that the students can observe how temperature effects the life cycle

#### Week 2

1. Pass out the mealworms in their observation boxes and have the students repeat the observations and measurements from the prior week.

#### Week 3 and on

1. Continue to pass out and observe the mealworms until they have changed into beetles
2. At the conclusion of the lesson you can have the students use the observations and measurements in their science journals to draw the life cycle of their mealworms

#### **Target Observations:**

- Animals undergo changes throughout life
- Mealworm, a specific animal called an insect, undergoes 3 changes in life (egg to larva, larva to pupa, pupa to adult)

#### **Final Target Concept:**

The students should have learned that animals (including humans) undergo changes throughout life. Also, the students should have learned that each animal is equipped to survive in its own environment.

### **Summary & Discussion:**

Discuss with the students other animals' life cycles and adaptations. Review the vocabulary words and the specific life cycle of their mealworms. Ask the students about other animals (e.g. frogs, birds, butterflies etc.) and what types of changes they undergo.

### **Extensions**

1. Camouflage (*see attached files*)
  - a. The attached files are photos of various animals that use camouflage to hide in their environment. This activity can be used to introduce the different forms of camouflage (color, disruptive patterns, counter shading, mimicry).
    1. Cycle through each photo and have the students write, in their science journal, what type/s of camouflage the animals use to hide.