Name:_____

The Ladybug Lab: Observing Metamorphosis

This activity moves beyond models and diagrams to give students a front-row seat to the miracle of metamorphosis. By maintaining a classroom "Ladybug Lab," students can observe the transition from tiny, active larvae to familiar spotted beetles over the course of about three weeks.

Materials Needed:

- Clear Habitat: A mesh butterfly garden or a large plastic jar with a very fine mesh lid (to prevent tiny larvae from escaping).
- Live Ladybug Larvae: It is easiest to start with the larva stage. These can be purchased from educational supply stores or found on plants infested with aphids.
- Food Source: Live aphids (found on rose bushes or milkweed) or specialized ladybug "chow" provided in commercial kits.
- Water Source: A small piece of damp cotton ball (do not use a water dish, as larvae can drown).
- Magnifying Glasses: For detailed observation.
- Observation Journals: For sketches and daily notes.

Step-by-Step Procedure

1. Setting the Stage

Prepare the habitat by placing a few clean twigs and a damp cotton ball inside. If you found your larvae in the wild, include the specific leaves they were found on, as these likely contain the aphids they were already eating.

2. Initial Observation (The "Alligator" Stage)

Introduce the larvae to the habitat. Have students use magnifying glasses to describe the larvae.

Journal Prompt: Draw your larva. How many legs does it have? How does it move? What does it do when it finds an aphid?

3. The Feeding Frenzy

For about 5–10 days, the larvae will eat constantly and grow rapidly. Students should ensure the habitat remains clean and that food is replaced daily.

Name:_____

Observation Task: Look for "old skins." Just like mealworms, ladybug larvae must molt to grow larger.

4. The Great "Stillness" (Pupa Stage)

Eventually, each larva will attach itself to a leaf or the side of the jar and curl up. It will turn into a hard, orange-and-black shell. This is the pupa.

Scientific Question: Does the pupa move? Does it eat? What changes can you see happening through the shell?

5. The Emergence (Adult Beetle)

After 5–7 days, the adult ladybug will crawl out of the pupa. Crucial Observation: When they first emerge, ladybugs are often pale yellow and have no spots. Their spots appear and their shells harden over several hours.

Journal Prompt: Describe the ladybug the moment it comes out. How does it change after one hour? After five hours?

Cleanup & Release

Once the ladybugs have their hard, red shells and have been observed for 1–2 days, it is time to release them.

Release Protocol: Take the class to a school garden or a place with plenty of plants. Gently open the habitat and let the ladybugs crawl out onto the leaves.

Final Reflection: Why is it better for the ladybugs to be in the garden than in our jar? How will they help the plants we just put them on?

Safety & Care Tips

Do not touch: Larvae are fragile. Use a small paintbrush to gently move them if necessary.

Avoid Direct Sunlight: Keep the habitat in a bright room, but out of direct sun, which can overheat the jar and kill the insects.

Maintain Moisture: Ensure the cotton ball stays damp, but not dripping wet. Mold is a common problem in habitats that are too wet.