

SCIENCE LESSON: DUNG BEETLE METAMORPHOSIS

Essential Question:

How does a dung beetle become an adult?

Lesson Objective:

To understand that dung beetles go through a metamorphosis that involves four stages.

Metamorphosis

Dung Beetles and other insects go through a series of physical changes called metamorphosis. Animals that go through **metamorphosis** change from one form to a very different form, so the young stage looks very different from the adult stage. For example, a larva caterpillar looks nothing like the adult butterfly. The Rainbow Scarab beetle goes through four stages of metamorphosis: egg, larva, pupa, and adult. An female adult beetle will lay an **egg** in an underground nest on top of a clump of poop. The egg will hatch in less than a week. A cream colored C-shaped **larva** with six brown legs will emerge from the egg. The larva will eat the dung its mother left for it using its strong jaws. It will eat and grow for up to one year. Then it will turn into a leathery skinned **pupa**, which does not move or eat. After about 3 weeks in the pupa stage, the beetle will emerge as an **adult**. The adult will fly off in search of fresh soupy dung that it can slurp up, because it no longer has strong jaws to chew solid poop with. The adult will not eat as much as the larva and it will live only 2-4 weeks. The adult's purpose is create another generation, so it will find a good poop patty and make a nest underneath it. After finding a mate, the female beetle will lay an egg and the cycle begins again.

Lesson Discussion Questions:

- What are the four stages of dung beetle metamorphosis?
- Do humans go through metamorphosis?
- Which stage is the longest during dung beetle metamorphosis?

Materials:

- Copies of the attached Dung Beetle Life Cycle Worksheet.
- Crayons or colored pencils
- Scissors
- Glue sticks

Activity:

Guide the students to first color the egg a cream color. Discuss the egg stage. Next, tell the students to color the larva light yellow with a dark brown head and legs. Discuss the larva stage. The pupa should be colored a light brown. Discuss what happens in the pupa stage. The adult is colorful with greens, blues, reds, yellows, and purples. They can be creative! Discuss this stage. Then ask the students to cut out each pie slice and then glue them in the correct order on the cycle diagram.

Resources:

(F. Krell, personal communication, December 5, 2020).

(2013, July). *Featured Creatures*. rainbow scarab - Phanaeus vindex Macleay.

http://entnemdept.ufl.edu/creatures/BENEFICIAL/BEETLES/Phanaeus_vindex.htm

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