Animal Life Cycles

Investigation Data Sheet

Life Cycle Of Milkweed Bugs

The metamorphosis of a milkweed bug is interesting in that it is accomplished in several stages. It hatches from an egg into what is called a nymph. A nymph is about the size of the head of a pin. At this stage the nymph has legs and a shell, or exoskeleton, but does not look much like an adult bug. The nymph will molt, or shed its exoskeleton, five times before it becomes a fully adult milkweed bug. Each time it will grow larger and change its appearance. Milkweed bugs live about 30 to 40 days after they become adults. During this time they will mate, lay eggs, and the life cycle will begin all over again.

Objective

Observe the life cycle of the milkweed bug.

Materials

__ a gallon jar
__ 2 tsp. sunflower seeds (hulled, unsalted)
__ 3 small jars with lids
__ a cotton wick or paper towel
__ some mesh material
__ cotton balls
__ a rubber band
__ a notebook or pad
__ a piece of cloth large enough to cover the top of the gallon jar
__ milkweed bug eggs (can be purchased at a biological supply store)
__ an adult helper

Safety Notice: All applicable laboratory safety rules must be followed. Students should not perform any experimental activity without the teacher's supervision and express permission. Students must follow safety guidelines and wear appropriate protective gear.

Procedure

1. Sprinkle the sunflower seeds at the bottom of the gallon jar. The milkweed bugs will feed on these seeds when they hatch.
2. Fill the small jar with water. Before covering the jar with its lid, ask an adult to puncture a hole in the lid so that a cotton wick (or rolled up piece of paper towel) can be pushed through. Place this small jar inside the gallon jar. Its wet wick will provide a source of water for the bugs.
3. Place the milkweed bug eggs into the gallon jar and position them so that they are in contact with the sunflower seeds and near the water jar. Place the mesh material against the small water jar and touching the bottom of the gallon jar. When the bugs hatch, they will crawl up the mesh to reach the water.
4. Use the rubber band to secure the cloth over the top of the gallon jar. The eggs should hatch in about four days.
5. Observe the milkweed bugs as they develop throughout the duration of this investigation. Use a notebook or pad of paper to record daily observations and sketches.
6. Once the nymphs have molted into adults, put a cotton ball into another small jar and place it (uncovered) into the gallon jar. This jar will serve as the egg-laying jar, in that the adults will lay eggs on the cotton ball inside. To prevent the bugs from eating the eggs, collect the eggs daily by replacing the cotton ball and transferring it into another small jar that is kept outside of the gallon jar.

Conclusions

- Use your observations and sketches to propose an explanation as to why the milkweed bug must molt five times before reaching full maturation as an adult.

- Select one life stage of the milkweed bug and explain why it is important to its development and survival.