## Another FREE SAMPLE LAB from TOPS LEARNING SYSTEMS!

This **TOPS Idea** is taken from an original series of black-and-white line masters, adapted to stand alone as an independent mini-lesson. Please purchase our original book to get the whole in-depth program.

hide-a-moth

…adapted from **ANIMAL SURVIVAL #37**
by TOPS Learning Systems

1. Trace moths onto white paper, using this pattern.

2. Camouflage to look like surfaces in your classroom. Use paint, crayon, or colored pencil.

Mine will look like the bulletin board!

How did I get talked into this?
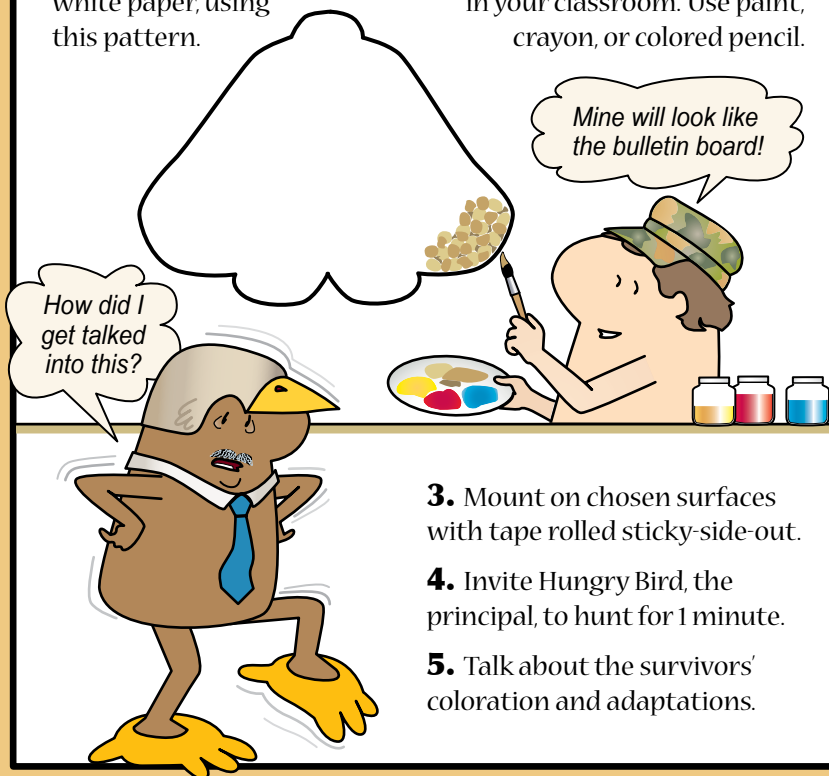
3. Mount on chosen surfaces with tape rolled sticky-side-out.

4. Invite Hungry Bird, the principal, to hunt for 1 minute.

5. Talk about the survivors' coloration and adaptations.

OBJECTIVE

To understand camouflage as an adaptive survival strategy, an outcome of natural selection.

LAB NOTES

Photocopy the lab for each student or lab team.

Steps 1-3. Don't cut out the traced moth until step 3. This allows kids to color their moths against chosen sites with less risk of marking the wrong surfaces. Cut away visible outlines for best camouflage effect.

Step 2. Basic rules for resting sites: Moths must be visible from the center of the room, not under or behind things. They must be within easy reach (not on the ceiling or outside a window).

Step 4. Count moths placed before Hungry Bird arrives. Tally moths as they are "eaten," calling time before all perish.

DISCUSSION

5. Why did some moths survive and others perish? *Some were better camouflaged.* Are luck and location important factors? *Yes; this does not dim the importance of camouflage.* How will offspring of survivors appear? *Similar, but with individual variations. Natural selection requires many generations to effect change across an entire population.* What are some advantages and disadvantages of camouflage as a survival strategy? *Works while asleep, but not while moving. Works only on certain backgrounds.*

EVALUATION

Q. England's industrial revolution gradually coated the countryside with dark soot from factories. How did this affect moth coloration over time?

A. Darker moths were less likely to be found and eaten, and more likely to pass their coloration on to their offspring. *Through natural selection, the moths gradually became darker over many generations.*

EXTENSION

Mix 12 toothpicks each of several colors. Scatter these over different outdoor areas, then challenge your class to find as many as they can in 1 or 2 minutes (no bare feet!). Which color hides best on a lawn? Dirt or rocks? A parking lot?

MATERIALS

- White paper; pencil, a bright window to trace against.
- Paint, crayons, or colored pencils.
- Scissors and tape.
- Colored toothpicks (for Extension).

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