

Unit: Mealworms	Date:	Subject:	Materials: dropper bottles of vinegar, ammonia, water, Q-tips, white paper, mealworms, Quiz #2
Lesson: Back-up???	10/15/2002	Science	

Objective: The learner will demonstrate L'evaluation by orally concluding with the class that there is no best way to get a mealworm to back up.

NYS Standard: Science 2.21 The behavior of animals may change when environmental conditions change: Animals move to find optimal environmental conditions within an area.

Set: Review the other Back-up tests we have already done with our mealworms: pipe cleaner, light, heat, blockade, blowing, shouting.

Procedure:

- ~ Explain the three tests: Water, Ammonia, Vinegar
- ~ For each test:
 - > Place mealworm on a white sheet of paper, dip Q-tip in a liquid and draw a line in front of the mealworm with the Q-tip.
 - > Must do test at least 10 times with each liquid, but never putting the liquid on the mealworms.
 - > Record Times Tried & Times Backed Up on mealworm chart.
- ~ After all three tests are done explain how to rank the tests from Best (1) to Worst (10). The Best would be the test that made the mealworm to back up the most times and the Worst would be the test where mealworm backed up the least times.

Guided Practice:

- ~ Science partners work together completing the three liquid Back-up tests.
- ~ Discuss with partner, and another group (once finished) about which test was the best for getting the mealworms to back up.

Independent Practice:

- ~ Students must complete Quiz #2 for homework.

Closing:

- ~ Discuss with the class, which they found to be the most successful test to get the mealworms to back up (there is none).

Unit: Mealworms	Date: 10/16	Subject:	Materials: Black & White construction paper, shoeboxes, tape, scissors, "Believe It or Not" worksheet
Lesson: Black or White	& 10/17	Science	

Objective: The learner will demonstrate Analysis by testing the mealworms to see if they prefer black or white.

NYS Standard: Science 2.21 The behavior of animals may change when environmental conditions change: Animals move to find optimal environmental conditions within an area.

Set: Do you like black or white better? Do you think mealworms have a preference of black or white? We're going to find this out with our next experiment.

Procedure & Guided Practice:

- ~ Give Instructions for taping half of the shoebox with white paper and the other with black paper. **Make sure it is equally split in half. Put tape on all sides except for the lid.
- ~ Pass out 2 mealworms. Place in the middle of the box. Let them roam for 5-10 minutes. Put shoebox on the counter and let them be.
- ~ In Science folder (new page), Students are to hypothesize whether mealworms prefer black or white.
- ~ They should also draw a chart with 2 columns. They should be labeled Prefer White and Prefer Black. Draw this chart on the board.
 - ~ After 10 minutes, have students retrieve their shoeboxes and record what their mealworms preferred.
- ~ Have each set of partners report to the class their hypothesis and what actually happened.
- ~ Each student should be recording data in their chart of the whole class's results.

Independent Practice:

- ~ "Believe It or Not"- worksheet for homework which goes along with the Mealworm newspaper.

Closing:

- ~ Discuss what the mealworms preference is or if there is one. Questions: Do we all have the same results? How can we explain the results? Do the results confirm or contradict your hypothesis? What can we conclude after our testing: Do they prefer black or white? Under chart record our conclusion after discussion.

Unit: Mealworms	Date:	Subject:	Materials: Black & White construction paper, shoeboxes, tape, scissors, "Believe It or Not" worksheet
Lesson: Black or White	10/21/2002	Science	

Objective: The learner will demonstrate Analysis by testing the mealworms to see if they prefer black or white.

NYS Standard: Science 2.21 The behavior of animals may change when environmental conditions change: Animals move to find optimal environmental conditions within an area.

Set: Let's take a poll. Raise your hand if you like white better than black (count and write on board). Raise your hand if you like black better than white (count and write on board). We may have a preference, but do you think mealworms do? We will be testing our mealworms today to see if they like black or white better.

Procedure & Guided Practice:

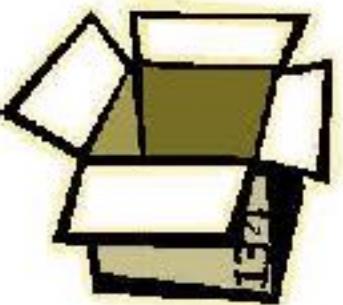
- ~ Students are to record on the worksheet whether they think the mealworm will prefer black or white. They are hypothesizing before they do the test. Explain (read the definitions from the sheet) what a hypothesis is.
- ~ Any group who hasn't finished taping their box with black and white need to do so before the testing begins.
- ~ Pass out two mealworms to each group once you have approved their box.
- ~ Place shoebox on the counter and then place the mealworm in the middle of the box. Let them roam for 5-10 minutes; leave shoebox alone. Students must time their own mealworms.
- ~ After 10 minutes, have students look in their shoeboxes and record what their mealworms preferred.
- ~ Have each set of partners report to the class their hypothesis and what actually happened.
- ~ Each student should be recording the data in their chart of the whole class's results.

Independent Practice:

- ~ "Believe It or Not"- worksheet for homework which goes along with the Mealworm newspaper.

Closing:

- ~ Discuss what the mealworm's preference is or if there is one. Questions: Do we all have the same results? How can we explain the results? Do the results confirm or contradict your hypothesis? What can we conclude after our testing: do they prefer black or white? Under the chart record our conclusion after the discussion.



Do “Super” Mealworms prefer Black or White?

A hypothesis is an explanation or theory, which has not yet been proved to be correct.

Your Hypothesis: _____

Was your hypothesis correct?

Record the class' results below:

PREFER BLACK	PREFER WHITE

After looking at the class's results, what can we conclude about mealworms preferring black or white?
