



Dogs and Turnips

Adapted from *Dogs and Turnips* Activity

www.ucmp.berkeley.edu/education/lessons/dogs_turnips/dogs_and_turnips.html

Grade Level: Grades 6-8

Preparation Time: 5 minutes or less

Activity Duration: 30 minutes

Concepts Addressed

- Science is a process by which we learn about the natural world using our senses and extensions of our senses.
- Science follows a process guided by certain parameters.
- Science relies on the observation of physical evidence from the natural world.
- Physical evidence is examined and interpreted through logic.
- An observation is a description of physical evidence based on what we see, feel, hear, smell, or taste.
- An inference is a logical conclusion based on observation of physical evidence.
- A hypothesis is a scientific idea supported by physical evidence.
- Science advances as scientific theories are supported, modified, or replaced as new evidence is found.

Objectives

The student will:

- Attempt to figure out a long sentence having only been given some words (evidence).
- Reattempt to figure out the sentence with more evidence (revision of hypothesis).
- Discuss differences in results for different groups (difference in interpretation).

Materials Included

- Laminated sets of 24 sentence word cards (one set per group of 3-4 students)
- Dogs and Turnips worksheets (one copy per group)

Background

Scientists gather information and hypothesize about possible explanations of what they have found. Paleontologists collect specimens from a particular locality and work to assemble the story of what occurred in the past. As more information is gathered, hypotheses change. The literature is searched, collections are examined, information is shared with other scientists, and hypotheses are modified again and again. In this activity, students gather information and work toward a closer approximation of the

actual sentence. Note that there is a built-in ambiguity in the sentence and several reasonable “correct” answers are possible. Despite the artificiality of this activity, some aspects of the experience closely resemble real-life science.

Explore this link for additional information on the topics covered in this lesson:
Nature of Science—<http://evolution.berkeley.edu/evosite/nature/index.shtml>

Procedure

1. Pass out Dogs and Turnips Worksheets and word cards. Have each group spread out its word cards face down on the table.
2. Tell the class that the words form one long sentence that also tells a story. The goal is to figure out the story from the words they turn over.
3. Have each group turn over five cards at random and write what they think the story is on their worksheet (Hypothesis #1). After they have done this, ask them if it would help to have more information. They will, of course, answer yes.
4. Have the groups turn over five more cards and record their new sentence on the worksheet (Hypothesis #2). After they have done this ask them if their idea of the sentence changed with more information. Discuss briefly, but do not yet have groups share their results.
5. Have the groups turn over five more cards and record their revised sentence (Hypothesis #3).
6. Allow groups to share with the class what they think the sentence says. Discuss the possible reasons why groups have different answers. Ask them how this might be similar to a paleontologist digging up ancient bones. (Scientists may not have all the information.) Ask why scientists might not agree on explanations of things. (Scientists may have different information or interpret things differently.)
7. Allow all groups to turn over all the cards and to revise their hypotheses (Hypothesis #4). Have groups share out their “final” results. Chances are that the groups will still not have exactly the same sentences. Ask why they didn’t. Ask why scientists may not have the same explanations for things even though they may have exactly the same information. (They may have come with different background information or interpret the same information differently.)

Sentence Words

THE BIG FAT RED DOG

WALKED INTO THE LITTLE

WHITE HOUSE ON THE

PRAIRIE CARRYING A BONE

AND ATE HIS BOWL OF

TURNIPS .

D & T Worksheet

People in group _____

Date _____

Period _____

Hypothesis #1

Hypothesis #2

Hypothesis #3

Hypothesis #4
