

Testing Foods

Task Information

Grade: 4th grade

Content: Physical science
IC1.1 - Object properties, materials, condition
B-1.1 - Scientific techniques, materials

Format: Manipulative

Purpose:

- The student will observe specific properties of several food samples to evaluate them and analyze them for common contents.

Skills:

Primary: Observing
Secondary: Interpreting Data

Time: 8 - 10 Minutes

Materials:

- | Teacher | per Student |
|--|---|
| <ul style="list-style-type: none"> brown paper grocery bags | <ul style="list-style-type: none"> 6 brown paper squares (5 cm X 5 cm) 4 food samples (see preparation section) dropper bottle with vegetable oil dropper bottle with water bag samples A and B waste container (cup or small pail) paper towels test sheet |

Preparation:

- Use food samples which can be picked up easily with fingers
- It is also important that the food samples leave distinctive marks on the brown paper. Some good examples are listed below:
 cheese, snack crackers, pepperoni/salami, peanuts, apple slices, peeled carrots, cucumber slices
- Two of the food sample should contain oil.
- Try your samples out on the brown paper bag the student will be using to be sure that the students will get the desired results
- Brown paper squares can be cut from a paper grocery bag. The bag should not have any type of special coating to resist wetness
- The type of paper bag squares used in the experiment may affect the student results. Be sure to test the oil and water on the bag before the students their testing.
- Sample bag A** - a plastic sandwich bag - The plastic sandwich bag should not have a zip lock top. This could lead the students to an inaccurate assumption based on the premise of the experiment.
- Sample bag B** - a paper lunch bag

Safety:

Advise the students not to eat the test sample used in the experiment

Testing Foods

Task: At this station, you will find out which of several food samples contain fats in the form of oils.

Materials:

- 6 brown paper squares
- 4 food samples
- dropper bottle with oil
- dropper bottle with water
- waste cup
- paper towels
- data sheet
- bag samples A and B

Directions:

1. Place one brown paper square below the dropper bottles and the foods on your data sheet.
2. Place one drop of water on a brown paper square.
3. Describe what happened to the brown paper square with the drop of water.

4. Place one drop of oil on a brown paper square.
5. Describe what happened to the brown paper square with the drop of oil.

6. Gently rub each of the foods against a brown paper square.

Please Continue on the Next Page

7. Using the information from your paper squares, determine which food samples contain oil.
8. According to your tests, write the names of the food samples that contain oil in the space below.

9. What evidence from the paper squares did you use to determine which of the food samples contain oil?

10. Look carefully at the bag samples marked **A** and **B**. In the space below, explain why you think potato chips could be sold in bag type **A** and not bag type **B**.

11. When you are finished making observations, throw the brown paper squares that you used for testing in the waste cup.

TEST SHEET

Water

Oil

Test Paper

Test Paper

Food Sample

Food Sample

Food Sample

Food Sample

Test Paper

Test Paper

Test Paper

Test Paper

Testing Foods - Scoring Rubric

Maximum score - 6 points

3. Description of water on paper 1 point total

Standard: The student will describe what happens to the brown paper square when water is dropped on it.

Criteria:

- 1 point for a statement about what happened to the paper when water was dropped on it

Sample of acceptable answers:

- the paper turned darker
- the paper slowly soaked up the water
- the paper got wet
- the paper wrinkled when it dried, but it was the same color again
- the paper didn't soak up the water
- nothing happened to the paper the water stayed on top
- the water stayed on top and then slowly soaked into the paper

5. Description of oil on paper 1 point total

Standard: The student will describe what happened to the brown paper square when oil is dropped on it.

Criteria:

- 1 point for a statement about what happened to the paper when oil was dropped on it

Sample of acceptable answers:

- the paper turned darker
- the paper slowly soaked up the oil
- the paper was stained from the oil
- oil spread through the brown paper
- the paper felt greasy
- oil spread all over the paper

8. Name foods containing oil 2 points total

Standard: The student names the foods containing oil.

Criteria:

- 1 point for each food correctly identified as containing oil

*** The correct answer will depend upon the foods tested. Two of four samples should contain oil. The foods used for testing should be recorded on the Task Information sheet.

9. Evidence to support food sample choices **1 point total**

Standard: The student will give supporting evidence for his/her choices in question #8.

Criteria:

- 1 point for an appropriate response describing the paper squares as having an appearance similar to the test square with oil

Sample of acceptable answers:

- the food sample left a greasy spot
 - the paper turned darker just like the paper with oil
 - the paper was stained just like the paper with oil
 - the paper felt greasy like the paper with oil
- No credit is given if the student just states that the food left a mark

10. Bag samples **1 point total**

Standard: The student will explain why potato chips are not sold in brown paper bags (bag type B).

Criteria:

- 1 point for a reasonable explanation for why potato chips should not be sold in brown paper bags

Sample of acceptable explanations:

- Potato chips are sold in bag type A so you don't see grease on the bag.
- Bag B would get greasy.
- Bag A will not soak up/absorb the oil/grease.

Highest possible score - 6 points

Student ID _____

Scoring Form - Testing Foods

Male / Female (Circle one)

Circle the student's score for each question. Add the points for each question and write the total score at the bottom of the scoring form.

| | | | |
|--|---|---|---|
| 3. Description of water on paper | 0 | 1 | |
| 5. Description of oil on paper | 0 | 1 | |
| 8. Name foods containing oil | 0 | 1 | 2 |
| 9. Evidence to support food sample choices | 0 | 1 | |
| 10. Bag samples | 0 | 1 | |

Total Score _____
Total possible score - 6 points

Student ID _____

Scoring Form - Testing Foods

Male / Female (Circle one)

Circle the student's score for each question. Add the points for each question and write the total score at the bottom of the scoring form.

| | | | |
|--|---|---|---|
| 3. Description of water on paper | 0 | 1 | |
| 5. Description of oil on paper | 0 | 1 | |
| 8. Name foods containing oil | 0 | 1 | 2 |
| 9. Evidence to support food sample choices | 0 | 1 | |
| 10. Bag samples | 0 | 1 | |

Total Score _____
Total possible score - 6 points

Student ID 2RJ-6 #3
Male / Female (Circle one)

Scoring Form - Testing Foods

Circle the student's score for each question. Add the points for each question and write the total score at the bottom of the scoring form.

- | | | | |
|--|---|-----|-----|
| 3. Description of water on paper | 0 | (1) | |
| 5. Description of oil on paper | 0 | (1) | |
| 8. Name foods containing oil | 0 | 1 | (2) |
| 9. Evidence to support food sample choices | 0 | (1) | |
| 10. Bag samples | 0 | (1) | |

Total Score 6
Total possible score - 6 points

Student ID _____
Male / Female (Circle one)

Scoring Form - Testing Foods

Circle the student's score for each question. Add the points for each question and write the total score at the bottom of the scoring form.

- | | | | |
|--|---|---|---|
| 3. Description of water on paper | 0 | 1 | |
| 5. Description of oil on paper | 0 | 1 | |
| 8. Name foods containing oil | 0 | 1 | 2 |
| 9. Evidence to support food sample choices | 0 | 1 | |
| 10. Bag samples | 0 | 1 | |

Total Score _____
Total possible score - 6 points

Testing Foods

Task: At this station, you will be finding out which of several food samples contain fats in the form of oils.

MATERIALS

- 6 brown paper squares
- 4 food samples
- dropper bottle with oil
- dropper bottle with water
- waste cup
- paper towels
- data sheet
- bag samples A and B

DIRECTIONS

1. Place one brown paper square below the dropper bottles and the foods on your data sheet.
2. Place one drop of water on a brown paper square.
3. Describe what happened to the brown paper square with the drop of water.

it went apart

4. Place one drop of oil on a brown paper square.
5. Describe what happened to the brown paper square with the drop of oil.

it went apart

6. Rub each of the foods against the brown paper square.

#1

- 7. Using the information from your paper squares, determine which food samples contain oil.
- 8. According to your tests, write the names of the food samples that contain oil in the space below.

The walnut is oil

- 9. What evidence on the brown paper squares showed you that some food samples contain oil?

it turns dark

- 10. When you are finished making observations, throw the brown paper squares that you used for testing in the waste cup.
- 11. Look carefully at the bag samples marked A and B. In the space below, explain why you think potato chips are sold in bag type A and not bag type B.

BeKus chips are grey

Testing Foods

Task: At this station, you will be finding out which of several food samples contain fats in the form of oils.

MATERIALS

- 6 brown paper squares
- 4 food samples
- dropper bottle with oil
- dropper bottle with water
- waste cup
- paper towels
- data sheet
- bag samples A and B

DIRECTIONS

1. Place one brown paper square below the dropper bottles and the foods on your data sheet.
2. Place one drop of water on a brown paper square.
3. Describe what happened to the brown paper square with the drop of water.

It soaked into the paper

4. Place one drop of oil on a brown paper square.
5. Describe what happened to the brown paper square with the drop of oil.

It makes the paper turn darker

6. Rub each of the foods against the brown paper square.

7. Using the information from your paper squares, determine which food samples contain oil.
8. According to your tests, write the names of the food samples that contain oil in the space below.

Cheese-it

9. What evidence on the brown paper squares showed you that some food samples contain oil?

Most of the oil got
taken away by the
cheese-it.

10. When you are finished making observations, throw the brown paper squares that you used for testing in the waste cup.
11. Look carefully at the bag samples marked A and B. In the space below, explain why you think potato chips are sold in bag type A and not bag type B.

Because it is plastic
and maybe plastic keeps
fresh air in.

2RJ-6

#3

Testing Foods

Task: At this station, you will be finding out which of several food samples contain fats in the form of oils.

MATERIALS

- 6 brown paper squares
- 4 food samples
- dropper bottle with oil
- dropper bottle with water
- waste cup
- paper towels
- data sheet
- bag samples A and B

DIRECTIONS

1. Place one brown paper square below the dropper bottles and the foods on your data sheet.
2. Place one drop of water on a brown paper square.
3. Describe what happened to the brown paper square with the drop of water.

It stayed in a dot and
did not move.

4. Place one drop of oil on a brown paper square.
5. Describe what happened to the brown paper square with the drop of oil.

It spread and got larger

6. Rub each of the foods against the brown paper square.

7. Using the information from your paper squares, determine which food samples contain oil.
8. According to your tests, write the names of the food samples that contain oil in the space below.

nut

9. What evidence on the brown paper squares showed you that some food samples contain oil?

It made a dark mark

10. When you are finished making observations, throw the brown paper squares that you used for testing in the waste cup.
11. Look carefully at the bag samples marked A and B. In the space below, explain why you think potato chips are sold in bag type A and not bag type B.

Because if you put them in bag B the oil would leak through the bag.