

Science Grade 4 F

**Grade Level Standard(s): Science 4 Physical Science 1: Make observations (could include looking for patterns) to describe and classify different kinds of materials by their observable properties.**

<b>Material(s) Provided for Science 4 F</b>	<b>Question(s)</b>	<b>Page Number</b>
Science 4 F Materials (popsicle stick, cotton, felt, paper clip, penny, rubber band)	1 - 5	Clear Baggie
Science 4 F Hardness Chart	1	13
Science 4 F Attainment Task Questions for Student Use	1 - 5	15

**Response Code:**

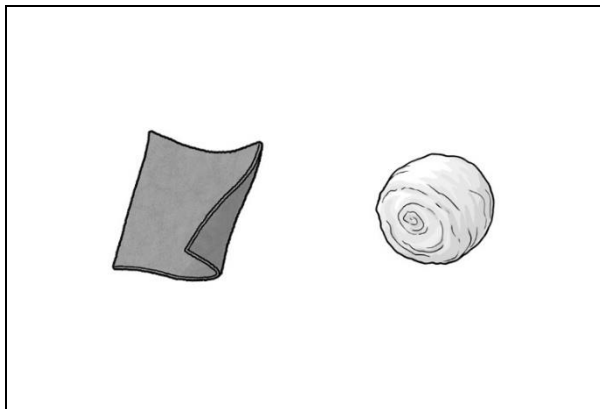
- Indicate the answer provided by the student.

**Text Coding:**

- “Quotation marks” indicate the script that the teacher should read to the student.
- *Italicized text* provides further direction for the test administrator.
- Words in parenthesis ( ) are optional; they may replace or be read in addition to the word(s) immediately preceding.

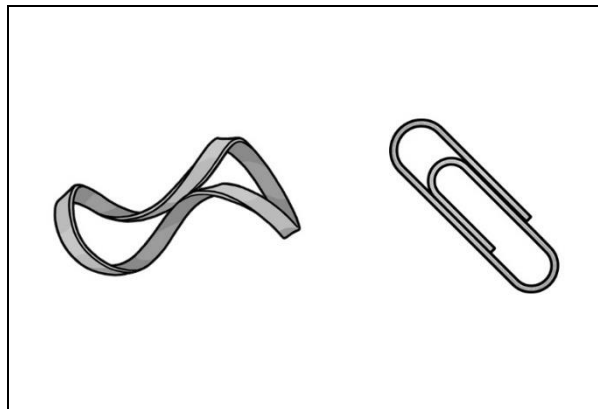
a.

Felt and cotton ball



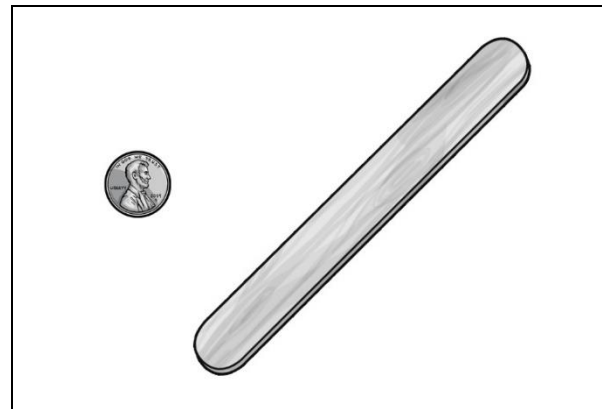
b.

Rubber band and paperclip



c.

Penny and popsicle stick



Before beginning task administration, please ensure that all conditions specified in the administration protocol (starting on page 10 of the Administration Guide Overview and Attainment Task Administration) have been met. Inform the student that the task is about to start by saying, “We are about to start the task, and I am going to ask you some questions.”

All questions from this task are available for presentation to the student in the supplemental material Science 4 F Attainment Task Questions for Student Use.

Present the student with Science 4 F Materials (from clear baggie) and Science 4 F Hardness Chart and direct the student’s attention to the chart and indicate the side of the chart for hard and the side of the chart for soft.

Test administrator may **NOT** sort the materials **or correct** the student when the student is sorting the materials.

“The science class is sorting objects. Classify (sort) these materials by hardness. Place them on the chart from hardest to softest.”

1. “Which **two** materials provided would be categorized as the **most** hard?”

<b>Response Option</b>	<b>Response Rationale</b>
a. Felt and cotton ball	<i>The student attempts to select a group of items that is the most hard items but incorrectly selects the response with two soft items.</i>
b. Rubber band and paperclip	<i>The student attempts to select a group of items that is the most hard items but incorrectly selects the response with one hard and one soft item.</i>
c. Penny and popsicle stick <b>(Correct)</b>	<i>The student observes the materials and selects the group of items that contains two hard items.</i>
<b><i>Depth of Knowledge (DOK) 2</i></b>	

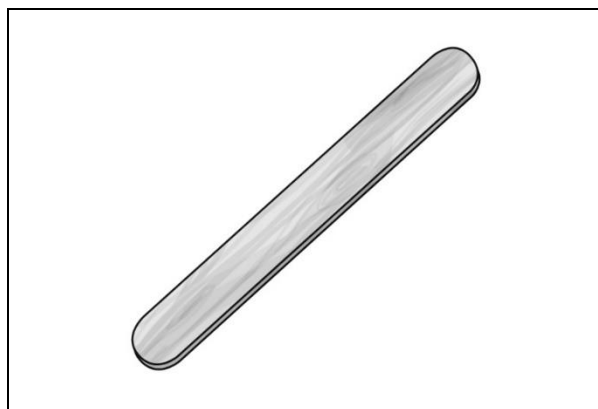
a.

Cotton ball



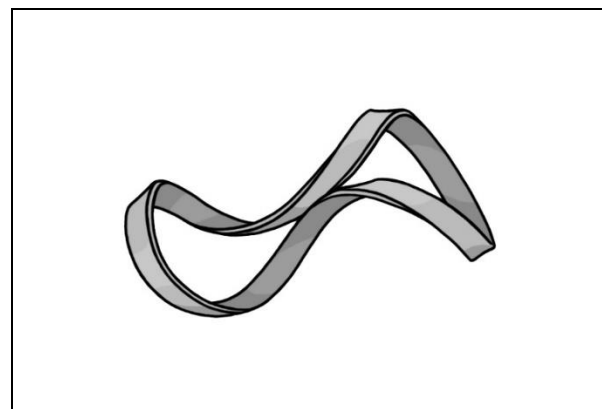
b.

Popsicle stick



c.

Rubber band



*If needed, remind the student of the scenario by rereading, “The science class is sorting objects.”*

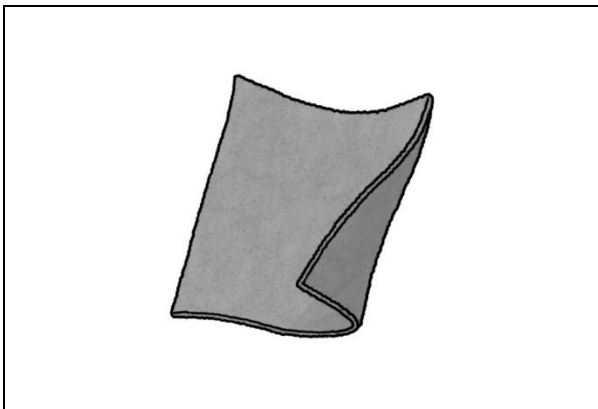
*Remind the student to use Science 4 F Materials (from clear baggie).*

3. “Flexibility means that something is pliable (bendable) or able to adapt (change) without breaking. Which of these materials is the **most** flexible?”

<b>Response Option</b>	<b>Response Rationale</b>
a. Cotton ball	<i>The student selects an item that is flexible however does not recognize the cotton ball breaks apart after some stretching so it is not the most flexible.</i>
b. Popsicle stick	<i>The student selects an item with a little flexibility however does not recognize the popsicle stick will break into two pieces with too much bending.</i>
c. Rubber band <b>(Correct)</b>	<i>The student observes the materials and selects the item that stretches the furthest making it the most flexible.</i>
<b><i>Depth of Knowledge (DOK) 2</i></b>	

a.

Felt



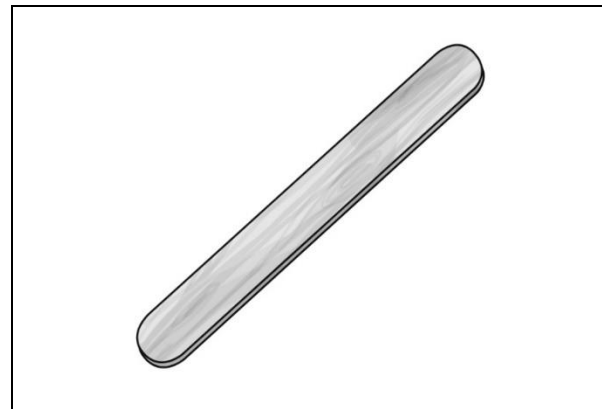
b.

Penny



c.

Popsicle stick



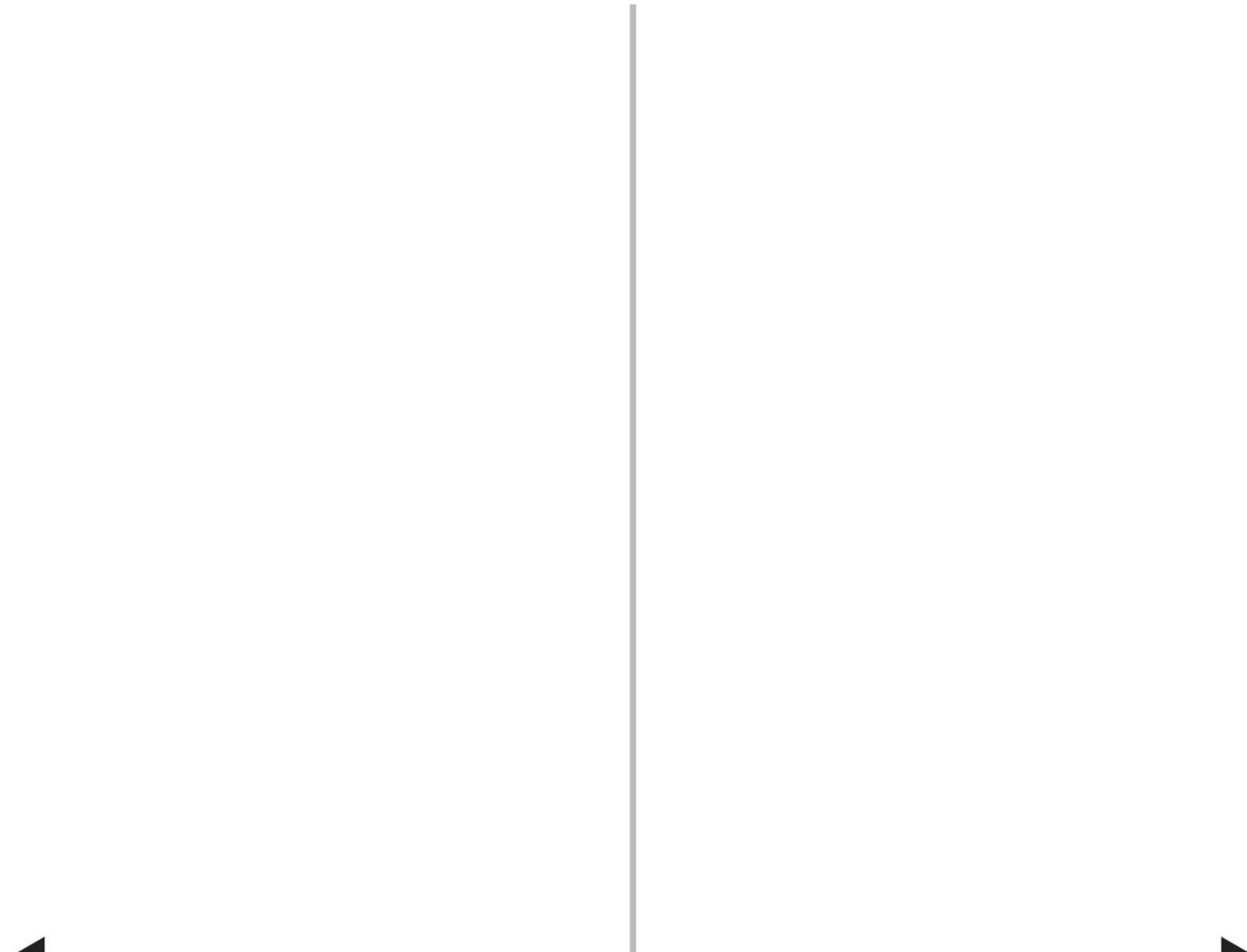
If needed, remind the student of the scenario by rereading, “The science class is sorting objects.”

Remind the student to use Science 4 F Materials (from clear baggie).

4. “Which of the following items has the property of luster (shiny or glossy)?”

Response Option	Response Rationale
a. Felt	<i>The student identifies an item that has a different texture than most of the materials however the student does not recognize that the texture is not luster.</i>
b. Penny <b>(Correct)</b>	<i>The student observes the materials and selects the item with the most luster.</i>
c. Popsicle stick	<i>The student identifies an item that has a different texture than most of the materials however the student does not recognize that the texture is not luster.</i>
<b><i>Depth of Knowledge (DOK) 2</i></b>	

Science 4 F Hardness Chart



**Hard**

**Soft**

Alternate Kentucky Summative Assessment

Attainment Tasks



**Science 4 F Attainment Task Questions for Student Use**

1. Which two materials provided would be categorized as the **most** hard?
3. Flexibility means that something is pliable (bendable) or able to adapt (change) without breaking. Which of these materials is the **most** flexible?
4. Which of the following items has the property of luster (shiny or glossy)?

**Kentucky Academic Standard:** Plan and conduct an investigation to describe and classify different kinds of materials by their observable properties. [Clarification Statement: Observations could include color, texture, hardness, and flexibility. Patterns could include the similar properties that different materials share.] 2-PS1-1

**Alternate Assessment Target:** *Make observations (could include looking for patterns) to describe and classify different types of materials by their observable properties.*

<b>Student Group</b>	<b>Number of Students*</b>	<b>Percent Correct #1</b>	<b>Percent Correct #3</b>	<b>Percent Correct #4</b>
<b>All Students</b>	588	62.24%	55.61%	53.23%
<b>Gender</b>				
Female	180	66.11%	57.78%	50.56%
Male	408	60.54%	54.66%	54.41%
<b>Ethnicity</b>				
African American	60	63.33%	45.00%	41.67%
American Indian or Alaska Native	<10	Not Reported	Not Reported	Not Reported
Asian	11	45.45%	54.55%	27.27%
Hispanic or Latino	<10	Not Reported	Not Reported	Not Reported
Native Hawaiian or Pacific Islander	<10	Not Reported	Not Reported	Not Reported
White (Non-Hispanic)	435	61.15%	56.78%	54.94%
Two or More Races	84	66.67%	54.76%	53.57%
<b>English Learner</b>	48	68.75%	56.25%	31.25%
<b>Economically Disadvantaged</b>	444	65.77%	56.31%	55.18%

\*Number of students that attempted the item