

Summative Assessment #3 for Our Picnic, The Study of Matter



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Jiggles

Summative Assessment #3

Constructed Response, Selected Response

Standard(s) Assessed:

SC.A.1.1.1.1.1, SC.A.1.1.2.1.1, SC.A.1.1.3.1.1, SC.A.2.1.1.1.1

Duration: This assessment is completed in segments while making Jell-O shapes. It will take about four hours for the completion of this activity; however, over three of those hours are spent waiting for the Jell-O shapes to harden. Other subjects will be being taught during that time. Upon hardening of the Jell-O shapes, the assessment will be completed.

Description of Assessment Activity:

Students will be identifying and recording information about grouping, states of matter, and parts of objects while making Jell-O shapes. This activity will be on going throughout the day as the different stages of the Jell-O squares are completed. Upon completion of the activity, students eat the Jell-O shapes and a cookie whose properties have also been identified and recorded. An assessment tool, Jiggles, is used to respond to all questions.

Teacher Directions:

Distribute the assessment tool, Jiggles. Follow the instructions below. These instructions also direct you as to when and how to have students complete the items on the assessment. Remember that only the standards are being assessed. Teachers are encouraged to give directional or motor skill assistance as needed. Teachers will read all text on the assessment aloud to the students.

Instructions:

1. Students write their names and date on the paper.
2. Divide the class into two groups. Each group will be making a gelatin treat of a different flavor.
3. One student in each group measures 1 1/4 cups water. After observing this measurement, all students identify whether the measured water is a solid, liquid, or gas on Summative Assessment #3, Jiggles (Question #1).
4. The measured water is placed into pots on a hot plate. As the water boils, students identify whether the steam is a solid, liquid, or gas on Summative Assessment #3, Jiggles (Question #2). **An adult volunteer should closely supervise the boiling of water.**
5. Students record the reason for the change in state from liquid to gas on their Jiggles assessment tool (Question #3).
6. Each group has one 8-serving size packages of gelatin. The flavors for each group must be different.
7. **STIR** boiling water into the gelatin using a large bowl for at least 3 minutes until completely dissolved. Pour into 9-inch pan, which has been sprayed with Pam for easy jiggles removal.
8. Students identify the state of matter for the mixture on their Jiggles assessment tool (Question #4).

9. Students place their paper in their work folder or desk while waiting for the finished jiggles.
10. **REFRIGERATE** at least 3 hours or until firm (does not stick to finger when touched). Dip bottom of pan in warm water about 15 seconds. Cut into decorative shapes with cookie cutters all the way through gelatin or cut into 1-inch squares and triangles. Lift from pan.
11. Students identify the state of matter for the gelatin shapes (Question #5) and record an explanation as to the change in states of matter between the mixture and the shapes (Question #6).
12. Teacher distributes a variety of gelatin shapes and colors to each group.
13. Students independently group the individual pieces by their physical characteristics. Those of like shape together, or those of like color together, or those of like neatness of shape together (All the messed up shapes in one group). Students could have two groups (red and green, or squares and triangles) or could have 4 groups (red squares, red triangles, green squares, green triangles). With the use of a variety of cookie cutters, the number of groups will multiply. This is a **visual** grouping done by individuals. **No one will be actually touching the gelatin.**
14. Students record their groups on their Jiggles assessment tool (Question #7).
15. Teacher passes out one cookie per child.
16. As the teacher reads the remaining items on the assessment tool, students respond by marking the answer on their Jiggles assessment tool (Question #8 - 11).
17. Eat the gelatin shapes and cookies.

Student Directions:

Write your name and the date on your paper. Listen to your teacher. Follow the directions carefully. Raise your hand if you need help. Your teacher will read everything to you.

Scoring Method and Criteria:

This assessment will be graded using standard class practice for a 12-item assessment.

Name _____

Jiggles

Summative Assessment #3

Listen as your teacher reads each question. Then color the ball by the correct answer, or write your answer in the blank.

1. What state of matter is the water we just measured?
 - A. solid
 - B. liquid
 - C. gas

2. What state of matter is the steam coming from the boiling water?
 - A. solid
 - B. liquid
 - C. gas

3. Why did the liquid water change to a gas?

4. What state of matter is in the bowl after water and gelatin are mixed?
 - A. solid
 - B. liquid
 - C. gas

5. What state of matter are the Jiggles shapes?
 - A. solid
 - B. liquid
 - C. gas

6. What made the liquid gelatin mixture change to solid gelatin mixture?

7. Show that you can group the Jiggles shapes. Draw the groups in the boxes.

I can group the Jiggles shapes like this.

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This is a different way I can group the Jiggles shapes.

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8. What are the Jiggles shapes made of?

9. Why can't we see all the things in the Jiggles shapes?

10. What are the cookies made of?

11. Why can't we see all the things in the cookies?

Name _____

Jiggles

Summative Assessment #3

Teacher Answer Key

Listen as your teacher reads each question. Then color the ball by the correct answer, or write your answer in the blank.

1. What state of matter is the water we just measured? (SC.A.1.1.3.1.1)
 A. solid
 B. liquid
 C. gas
2. What state of matter is the steam coming from the boiling water?
(SC.A.1.1.3.1.1)
 A. solid
 B. liquid
 C. gas
3. Why did the liquid water change to a gas? (SC.A.1.1.2.1.1)
Students must write something about heating the water to make it change to a gas. The concept of "heating" is the key.
4. What state of matter is in the bowl after water and gelatin are mixed? (SC.A.1.1.3.1.1)
 A. solid
 B. liquid
 C. gas
5. What state of matter are the Jiggles shapes? (SC.A.1.1.3.1.1)
 A. solid
 B. liquid
 C. gas
6. What made the liquid gelatin mixture change to solid gelatin mixture?
(SC.A.1.1.2.1.1)
Students must write something about cooling the gelatin to make it change to a solid. The concept of "cooling" is the key.

7. Show that you can group the Jiggles shapes. Draw the groups in the boxes. (SC.A.1.1.1.1.1)

I can group the Jiggles shapes like this.

Accept any grouping that is logical or that the student can explain. Groups should use the physical characteristics, such as shape, color, texture, size, or form.

This is a different way I can group the Jiggles shapes.

Accept any different grouping that is logical or that the student can explain. Groups should use the physical characteristics, such as shape, color, texture, size, or form.

8. What are the Jiggles shapes made of? (SC.A.2.1.1.1.1)

Accept any composition of two or more ingredients that are logical or that the student can explain. Our purpose is for the students to know that the Jiggles are made of small parts put together.

9. Why can't we see all the things in the Jiggles shapes? (SC.A.2.1.1.1.1)

The key is that the students know that objects are made of parts that are too small to be seen without magnification. Accept any explanation that shows understanding of this concept.

10. What are the cookies made of? (SC.A.2.1.1.1.1)

Accept any composition of two or more ingredients that are logical or that the student can explain. Again, it is not the specific ingredient that is important, but rather the concept that small things go together to make a different thing.

11. Why can't we see all the things in the cookies? (SC.A.2.1.1.1.1)

The key is that the students know that objects are made of parts that are too small to be seen without magnification. Accept any explanation that shows understanding of this concept.