

Name: \_\_\_\_\_

# What's the Scoop?

Aligned to the following standards: FFA.PL-A; FFA.PL-E; FFA.PG-J; FFA.CS-M; FFA.CS-N; AG2; AG5; AGC09.02; CCSS.ELA.RI.9-10.2; CCSS.ELA.SL.9-10.1; CRP.02; CRP.04; CRP.06; CRP.07; CRP.08; CRP.11

## Bell Ringer

### Directions:

Without the use of technology or a neighbor, identify if the statement is true or false by circling your answer. If the statement is false, correct the statement to make it correct by crossing out the incorrect information and inserting the correct information.

1. True   False   Ice cream is made with eggs.
2. True   False   Frozen custard incorporates more air into the final product than ice cream.
3. True   False   Ice cream has a more velvety texture and mouth feel than custard.
4. Using the space provided, draw your favorite flavor of frozen treat. Doesn't exist? Make one!



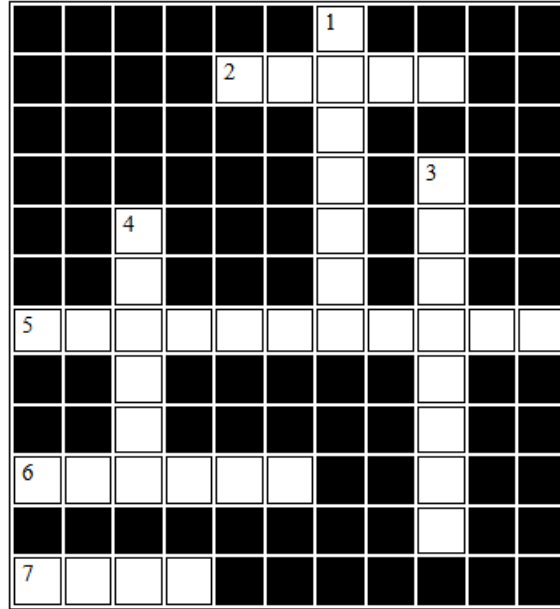
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## Part 1

### Description:

Using the article "Fresh Frozen Custard vs. Ice Cream: What's the Difference?" (<https://www.culvers.com/stories/food-cravings/fresh-frozen-custard-vs-ice-cream-whats-the-difference>), complete the crossword puzzle and questions below to learn about what makes frozen custard different from ice cream.

### Fresh Frozen Custard vs. Ice Cream: What's the Difference



#### Across

2. The temperature at which frozen custard can be served reduces the chance of a \_\_\_\_\_ freeze.
5. At what location was fresh frozen custard "founded"?
6. Frozen custard can be served at \_\_\_\_\_ temperatures than ice cream.
7. Frozen custard is made using pasteurized egg \_\_\_\_\_.

#### Down

1. In the Culver's restaurant, they make their frozen custard in small \_\_\_\_\_ so it is always fresh.
3. Compared to ice cream, frozen custard is smoother and \_\_\_\_\_.
4. Fresh frozen custard is \_\_\_\_\_ than ice cream.

#### Discussion Questions:

1. Why do you think the addition of egg creates a different product?
2. What about ice cream and custard might make a person favor one over the other? Give a minimum of two specific reasons.
3. Culver's makes their Fresh Frozen Custard in small batches throughout the day. What role do you think this plays in the customer appeal of the product?

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## Part 2

### Directions:

For this activity, you will be tasked with making either ice cream or custard. Identify below the recipe you have been assigned by your teacher and follow the steps to prepare your product. Be sure to follow food safety guidelines by washing your hands, keeping a clean workspace and following all instructions as you make your product.

\*Ice cream recipe/process is sourced from Science Buddies.

\*Frozen custard recipe/process is sourced from the Iowa Egg Council.

### Ice Cream

#### Supplies:

- Food gloves
- Measuring cups
- Measuring spoons
- 1 quart-sized zip-closure plastic freezer bag
- 1 gallon-sized zip-closure plastic freezer bag
- Oven mitts (optional)
- Small towels/paper towel (to clean up moisture/leaks)
- Duct tape
- 1 tbsp. sugar
- $\frac{1}{2}$  cup half-and-half (can substitute milk or heavy whipping cream)
- $\frac{1}{4}$  tsp. vanilla extract
- 4 cups ice cubes
- $\frac{1}{2}$  cup rock salt



#### Directions

1. Put on food gloves.
2. Add the sugar, half-and-half and vanilla extract to the quart-sized zip-closure plastic freezer bag.
3. Remove all the air and seal the bag closed.
4. Add a strip of duct tape over the closure of the bag to help eliminate leaks. (Tip: Fold the tape over the top.)
5. Set the ice cream mix to the side.
6. To the gallon-sized zip-closure plastic freezer bag, add ice and rock salt.
7. Place milk mixture into the bag with the ice.
8. Remove the air.
9. Duct tape the large bag.
10. Begin mixing by using your hands to manipulate the ice and rock salt around the ice cream mixture.  
\*Tip: Periodically check to make sure you have not punctured the bag containing the milk mixture.
11. Once the milk mixture is firm, remove the bag of ice cream and trash the ice bag and its contents.
12. Clean your area.
13. Follow your teacher's instructions for tasting your ice cream.

### Conclusion Questions

1. What is one thing that stood out to you during the production process? Why?
2. How do you think the process you just went through compares to commercial production?
3. What could you improve upon if you were to complete this process again?

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## **Frozen Custard**

### Supplies

- Food gloves
- Measuring cups
- Measuring spoons
- Cooking pan (Note: A microwave can be used, but substitute a microwave-safe bowl.)
- Burner
- Food thermometer
- Wisk
- 2 cups skim milk
- 2 eggs
- 4 tbsp. sugar
- 1 tsp. vanilla extract
- 1 quart-sized zip-closure plastic freezer bag
- 1 gallon-sized zip-closure plastic freezer bag
- 5 cups ice cubes
- 5 tbsp. rock salt



### Directions:

1. Put on your food gloves.
2. In your cooking pan, mix the milk, eggs, vanilla and sugar.
3. Use medium heat and stir continuously. (Note: For microwave, use medium power for one minute, beat and then heat in 20 second intervals beating the mixture in between.)
4. Cook the mixture until you reach 160 degrees.
5. Cool in the refrigerator.
6. Add the custard mixture to the quart-sized zip-closure plastic freezer bag.
7. Remove all the air and seal the bag closed.
8. Add a strip of duct tape over the closure of the bag to help eliminate leaks. (Tip: Fold the tape over the top.)
9. Set the custard mixture to the side.
10. To the gallon-sized zip-closure plastic freezer bag, add ice and rock salt.
11. Place custard mixture into the bag with the ice.
12. Remove the air.
13. Duct tape the large bag.
14. Begin mixing by using your hands to manipulate the ice and rock salt around the custard mixture.  
\*Tip: Periodically check to make sure you have not punctured the bag containing the custard mixture.
15. Once the custard mixture is firm, remove the bag of custard and trash the ice bag and its contents.
16. Clean your area.
17. Follow your teacher's instructions for tasting your custard.

## **Conclusion Questions**

1. What is one thing that stood out to you during the production process? Why?
  
  
  
  
  
  
  
  
  
  
2. How do you think the process you just went through compares to commercial production?
  
  
  
  
  
  
  
  
  
  
3. What could you improve upon if you were to complete this process again?

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### Part 3

#### Directions:

Now that your product has been created, you are going to conduct a sensory evaluation. Sensory evaluation is the use of your senses (touch, taste, sight, smell) to evaluate the product. Follow the steps below to accurately evaluate the product using a hedonic scale.

#### Ice Cream Evaluation

1. Using an X, identify your thoughts on the color/appearance of the ice cream.

| Dislike<br>Extremely | Dislike<br>Very<br>Much | Dislike<br>Moderately | Dislike<br>Slightly | Neither<br>Like nor<br>Dislike | Like<br>Slightly | Like<br>Moderately | Like<br>Very<br>Much | Like<br>Extremely |
|----------------------|-------------------------|-----------------------|---------------------|--------------------------------|------------------|--------------------|----------------------|-------------------|
|                      |                         |                       |                     |                                |                  |                    |                      |                   |

2. Using an X, identify your thoughts on the smell of the ice cream.

| Dislike<br>Extremely | Dislike<br>Very<br>Much | Dislike<br>Moderately | Dislike<br>Slightly | Neither<br>Like nor<br>Dislike | Like<br>Slightly | Like<br>Moderately | Like<br>Very<br>Much | Like<br>Extremely |
|----------------------|-------------------------|-----------------------|---------------------|--------------------------------|------------------|--------------------|----------------------|-------------------|
|                      |                         |                       |                     |                                |                  |                    |                      |                   |

3. Using an X, identify your thoughts on the taste of the ice cream.

| Dislike<br>Extremely | Dislike<br>Very<br>Much | Dislike<br>Moderately | Dislike<br>Slightly | Neither<br>Like nor<br>Dislike | Like<br>Slightly | Like<br>Moderately | Like<br>Very<br>Much | Like<br>Extremely |
|----------------------|-------------------------|-----------------------|---------------------|--------------------------------|------------------|--------------------|----------------------|-------------------|
|                      |                         |                       |                     |                                |                  |                    |                      |                   |

4. Using an X, identify your thoughts on the mouth feel/texture of the ice cream.

| Dislike<br>Extremely | Dislike<br>Very<br>Much | Dislike<br>Moderately | Dislike<br>Slightly | Neither<br>Like nor<br>Dislike | Like<br>Slightly | Like<br>Moderately | Like<br>Very<br>Much | Like<br>Extremely |
|----------------------|-------------------------|-----------------------|---------------------|--------------------------------|------------------|--------------------|----------------------|-------------------|
|                      |                         |                       |                     |                                |                  |                    |                      |                   |

- What surprised you about the smell, appearance, mouth feel/texture and taste of the ice cream? Why?
- How does this ice cream compare to what you purchase at the store/restaurant?
- Why do you think a food scientist uses this type of process when evaluating a food product?

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**Frozen Custard Evaluation:**

1. Using an X, identify your thoughts on the color/appearance of the frozen custard.

| Dislike<br>Extremely | Dislike<br>Very<br>Much | Dislike<br>Moderately | Dislike<br>Slightly | Neither<br>Like nor<br>Dislike | Like<br>Slightly | Like<br>Moderately | Like<br>Very<br>Much | Like<br>Extremely |
|----------------------|-------------------------|-----------------------|---------------------|--------------------------------|------------------|--------------------|----------------------|-------------------|
|                      |                         |                       |                     |                                |                  |                    |                      |                   |

2. Using an X, identify your thoughts on the smell of the frozen custard.

| Dislike<br>Extremely | Dislike<br>Very<br>Much | Dislike<br>Moderately | Dislike<br>Slightly | Neither<br>Like nor<br>Dislike | Like<br>Slightly | Like<br>Moderately | Like<br>Very<br>Much | Like<br>Extremely |
|----------------------|-------------------------|-----------------------|---------------------|--------------------------------|------------------|--------------------|----------------------|-------------------|
|                      |                         |                       |                     |                                |                  |                    |                      |                   |

3. Using an X, identify your thoughts on the taste of the frozen custard.

| Dislike<br>Extremely | Dislike<br>Very<br>Much | Dislike<br>Moderately | Dislike<br>Slightly | Neither<br>Like nor<br>Dislike | Like<br>Slightly | Like<br>Moderately | Like<br>Very<br>Much | Like<br>Extremely |
|----------------------|-------------------------|-----------------------|---------------------|--------------------------------|------------------|--------------------|----------------------|-------------------|
|                      |                         |                       |                     |                                |                  |                    |                      |                   |

4. Using an X, identify your thoughts on the mouth feel/texture of the frozen custard.

| Dislike<br>Extremely | Dislike<br>Very<br>Much | Dislike<br>Moderately | Dislike<br>Slightly | Neither<br>Like nor<br>Dislike | Like<br>Slightly | Like<br>Moderately | Like<br>Very<br>Much | Like<br>Extremely |
|----------------------|-------------------------|-----------------------|---------------------|--------------------------------|------------------|--------------------|----------------------|-------------------|
|                      |                         |                       |                     |                                |                  |                    |                      |                   |

- What surprised you about the smell, appearance, mouth feel/texture and taste of the frozen custard? Why?
- How does this frozen custard compare to what you purchase at the store/restaurant?
- Why do you think a food scientist uses this type of process when evaluating a food product?

- What would happen if one of these careers were not involved in the production process?
- Which of these careers is the most interesting to you? Why?

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## Part 5

### Directions:

Now that you understand the difference between frozen custard and ice cream, create a 30-second public service announcement (PSA) video you could share in your school and/or community that identifies the differences between ice cream and frozen custard and the associated careers with making them. Use the space provided and the rubric below to develop your PSA. Once you feel prepared, record your PSA to be played for the class.

### PUBLIC SERVICE ANNOUNCEMENT RUBRIC

| Area                       | 4 Points                                                                                              | 3 Points                                                                                                  | 2 Points                                                                                                         | 1 Point                                                                                            | Points Earned |
|----------------------------|-------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------|---------------|
| Content                    | All content is accurate. There are no factual errors.                                                 | Most of the content is accurate, but there is one piece of information that seems inaccurate.             | The content is generally accurate, but one piece of information is clearly inaccurate.                           | Content is confusing or contains more than one factual error.                                      |               |
| Clarity and Creativity     | The PSA is easy to understand, and all elements are clearly written or spoken. Creativity was used.   | The PSA is easy to understand, and most elements are clearly written or spoken. Some creativity was used. | The PSA is hard to understand with very quiet speaking or very hard to read writing. Little creativity was used. | The PSA is hard to understand, and one cannot follow the thought process. No creativity was used.  |               |
| Narration and Preparedness | The PSA is clearly rehearsed and presented with no mistakes.<br><br>Student spoke slowly and clearly. | One mistake is heard in the PSA video.                                                                    | Two mistakes are heard in the PSA video.                                                                         | Three or more mistakes are heard in the PSA video.<br><br>Student spoke very fast and was unclear. |               |
| Time                       | Student stayed in the 30-second time frame.                                                           |                                                                                                           |                                                                                                                  | Student was either under or over the allotted time frame.                                          |               |

Total: \_\_\_\_\_/16

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## Part 6

### Directions:

After the frozen custard is created, it is then time to add additional flavors to take the frozen custard to the next level.



What is your favorite frozen custard and/or ice cream flavor? \_\_\_\_\_



What is it about this flavor that makes you love it so much?



How do you think this flavor was developed? Why did someone decide to create this flavor?



Visit these Culver's web pages: <https://www.culvers.com/stories/food-cravings/why-you-should-try-our-latest-flavor-additions> and <https://www.culvers.com/flavor-of-the-day>.

- What do you notice about each of these flavors?
  
- How are each of the flavors described? What kinds of key words are used? Why?
  
- Each of these flavors has a different flavor profile (combination of flavors, aromas and textures to reach the consumer). How do you think each of these were developed and the combinations determined?
  
- Thinking about the production process and the different flavor combinations that Culver's has to offer in their Flavor of the Day, imagine you are part of the food product development team and have been challenged to create the next new, exciting flavor. What would you create? Use the following prompts to plan your creation and then use the space on the next page to create a billboard advertisement for your creation!

#### Planning

- o What flavor base will you use? (Circle one.)    Vanilla    Chocolate
- o What mix-ins will you include? You must include two or more. Here is what is currently available from Culver's: <https://www.culvers.com/menu-and-nutrition/fresh-frozen-custard/create-your-own>, but feel free to add in items that they may have never thought of!
  - \_\_\_\_\_
  - \_\_\_\_\_
  - Extra: \_\_\_\_\_
  
- o What will your creation be called? Be creative! \_\_\_\_\_
  
- o Identify three or more key words you would use to describe your new flavor.
  - \_\_\_\_\_
  - \_\_\_\_\_
  - \_\_\_\_\_
  - Extra: \_\_\_\_\_
  
- o On the next page, create your billboard for your new Culver's creation!

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Discussion Questions:

1. What was the greatest challenge with creating your own flavor? Why?
2. What was the most fun part of creating your own flavor? Why?
3. Besides flavor, what other things does a someone creating a new flavor need to take into consideration?
4. What role do you think flavor creation plays in a new product being successful?

**RUBRIC FOR BILLBOARD ADVERTISEMENT**

| Component                | Points Available | Total Points |
|--------------------------|------------------|--------------|
| Flavor Name:             |                  |              |
| Creative                 | 5                |              |
| Color                    | 5                |              |
| Flavor Name              | 5                |              |
| Mix-ins                  | 5                |              |
| Key Words                | 5                |              |
| Brief Flavor Description | 5                |              |
| Not Already on the Menu  | 5                |              |
| School Appropriate       | 5                |              |
| <b>Total</b>             | 40               |              |

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### Exit Ticket

#### Directions:

Complete the Venn diagram to compare and contrast frozen custard and ice cream. Be sure to include similarities and differences in mouth feel, smell, taste, appearance and how it is made (ingredients and process).

