Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Period: \_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_\_

**Making Lemonade**

**Goal:** Your group will be using a ratio of water to sugar to create the world’s best lemonade! You will begin with 2 tablespoons of lemon juice and your group will have two trials to come up with the recipe for your lemonade.

**Group Roles**

|  |  |
| --- | --- |
| **Reader:** | **Recorder:** |
| **Sugar Monitor:** | **Water Monitor:** |

**Supplies:**

Water bottle Sugar container Straw

Lemon Juice Clear cup (2) 1 teaspoon

Plastic knife Plastic rimmed plate Taster cup (1 per person)

1 tablespoon Paper towel (to dry teaspoon)

**Directions:**

*Step 1:* As a group, predict how many scoops of sugar and water you need to add to the lemon juice to make the world’s best lemonade. Have the recorder write the prediction.

*Step 2:* Have the recorder write the prediction as a ratio of sugar to water and water to sugar. Pass the group sheet around to make sure everyone agrees on the answer.

*Step 3:* Have the recorder draw a tape diagram of the ratio of sugar to water. Pass the group sheet around to make sure everyone agrees on the drawing.

*Step 4:* Test out your prediction. Have the sugar monitor put the number of scoops of sugar into the cup. Have the water monitor put the number of scoops of water into the cup. Stir using the straw.

*Step 5:* Using the straw, put a sample of lemonade into each taster cup. Everyone in the group tastes and decides on a ranking from 1 (horrible) to 10 (world’s best).

*Step 6:* As a group, make a plan to make the lemonade better. Have the recorder write this down.

*Step 7:* Carry out your plan to the cup of lemonade. Use the questions on the group sheet to guide you. Make sure you have a final plan. You will have to show this to the teacher.

*Step 8:* Raise hand when your group has a final plan to get the final cup of lemon juice.

*Step 9:* Repeat steps 1 – 5 to make the world’s best lemonade.

**Trial 1:**

**Predict** how many teaspoons of sugar and how many teaspoons of water should be added to the 2 tablespoons of lemon juice.

teaspoons of sugar: \_\_\_\_\_\_\_ teaspoons of water: \_\_\_\_\_\_

**Write** your prediction as a ratio of water to sugar and sugar to water.

\_\_\_\_\_\_\_\_: \_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_: \_\_\_\_\_\_\_\_

 water sugar sugar water

**Draw** a tape diagram below. See the example below.

*Example: Ratio of Sugar to Water- 3 : 2*

**Sugar**

**Sugar**

**Sugar**

**Water**

**Water**

**Rate** you lemonade on a scale of 1 (horrible) to 10 (world’s best)

Ranking from 1-10: \_\_\_\_\_\_\_\_\_

Plans to make it better: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Trial 1 Revisions:**

How many teaspoons of sugar are you going to add? \_\_\_\_\_\_\_

How many teaspoons of water are you going to add? \_\_\_\_\_\_\_

**Write** a ratio and **draw** a tape diagram of total sugar to total water.

**Rate** the new cup of lemonade on a scale of 1-10: \_\_\_\_\_\_\_\_

Final plans to make it better: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Final Trial:**

**Predict** how many teaspoons of sugar and how many teaspoons of water should be added to the 2 tablespoons of lemon juice.

teaspoons of sugar: \_\_\_\_\_\_\_ teaspoons of water: \_\_\_\_\_\_

**Write** your prediction as a ratio of water to sugar and sugar to water.

\_\_\_\_\_\_\_\_: \_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_: \_\_\_\_\_\_\_\_

 water sugar sugar water

**Draw** a tape diagram below.

**Rate** you lemonade on a scale of 1 (horrible) to 10 (world’s best)

Ranking from 1-10: \_\_\_\_\_\_\_\_\_

What makes your lemonade the world’s best lemonade?

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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**Analysis:**

If you wanted to make a quart of your world’s best lemonade, how much of each ingredient would you need to add?