

## WHAT ARE WE INVESTIGATING?

Which liquid will keep the fruit from browning the longest?

## MATERIALS:

- 1 Piece of Fruit ( A Banana, An Apple, A Pear, etc.)
- vinegar
- lemon/lime juice
- water
- sugar water
- baking soda water
- bowls/muffin tin
- soda
- lemonade
- juice
- timer
- Strive Academy's Engineering Design Process Handout (found at [www.striveacademy.org](http://www.striveacademy.org))
- Pencil or Pen

## EXTENSION:

- \* Try the experiment again with a different fruit and compare your results.
- \* Try the experiment again with the same fruit but different liquids and compare your results.
- \* Check out this video to explain why fruit turns brown:  
<https://www.youtube.com/watch?v=D82xej2Xhb0>

## DIRECTIONS:

1. Choose the materials that you want to use to build your structure. Our materials are just suggestions - feel free to add other things too!
2. On your handout (found at [www.striveacademy.org](http://www.striveacademy.org)), fill in the title of your experiment (Save the Fruit).
3. On your handout, fill in your hypothesis. You want to answer the question: Which liquid will keep the fruit from browning the longest?
4. On your handout, draw a picture of your experiment setup. Be sure to label each cup in your drawing with the type of liquid that will go in it. Don't forget to have a control - one piece of fruit that will get NO liquid.
5. Put one piece of your fruit in each cup.
6. Add 1 teaspoon of each liquid to the correct cup.
7. Set your timer for 20 minutes. While you are waiting, make some observations.
8. On your handout under "Data Collection/Observations", write down or draw any observations that you notice. Use some markers or crayons to show the color changes that you notice.
9. After 20 minutes, under "Results", list the liquids in order from the most brown fruit to the least brown fruit.
10. Answer the "analysis" questions on your handout:
  - Was your hypothesis correct?
  - Do you think you would get different results with a different type of fruit?
  - Acids keep fruits from turning brown. Which liquid that you used do you think is the strongest acid? The least strong acid?
  - How could you redo your experiment and make it more scientific?

**\*\* Try the extension activities on the first page for more fun! \*\***