

# Guess What?

3-5

S.2.2

## Objectives

**Students will be able to:**

- Identify different fruits and vegetables.
- Name at least two benefits of consuming fruits and vegetables.
- Explain the role of antioxidants in our bodies.
- Identify foods rich in antioxidants.

## Standards Met

**6-MS-LS1** Planning and carrying out investigations that use multiple variables and provide evidence that meet the goals of an investigation.

- Conduct an investigation to produce data to serve as the basis for evidence that meet the goals of an investigation.

**C.10.** Writing literary and informational texts to present, describe, and explain ideas and information, using appropriate technology.

**W.4.4.** Produce clear and coherent writing in which the development and organization are appropriate to task, purpose, and audience.

## Overview of Fruits and Vegetables

**Did you know?** Fruits and veggies are a great source of vitamins and minerals!

Fruits and vegetables provide us with vitamins, minerals, fiber and other powerful nutrients that help us stay full for longer and avoid overeating. Fruits and vegetables are also rich in antioxidants, which are substances that prevent or delay cellular damage in our body and that help reduce the risk of chronic diseases such as diabetes, heart disease and cancer. Examples of antioxidants are: Beta-carotene, lutein, lycopene, and vitamins A, C and E. We can find antioxidants in lemons, blueberries, strawberries, carrots, broccoli and avocado.

**For more information about antioxidants, watch the following videos:**

[www.youtube.com/watch?v=5SZ2cLtaKPC](http://www.youtube.com/watch?v=5SZ2cLtaKPC)

[www.youtube.com/watch?v=1pa9762jAgo](http://www.youtube.com/watch?v=1pa9762jAgo)

Exactly how many fruits and vegetables should we have in a day? Just remember the “5-A-Day” rule. Eat five servings of fruits and vegetables a day – the color way! Eating a variety of colorful fruits and vegetables will help us stay healthy and energetic.

It is important to encourage young students to increase their intake of fruits and veggies and help them understand the long-term benefits of doing so.

**For more information on fruits and veggies, go to:**

[www.mentorprojectfiu.com](http://www.mentorprojectfiu.com)



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# Make The Connection

## Materials

- Worksheet: "Guess What?" for Grades 3-5
- One (1) banana and juice of one (1) lemon

Videos: The apple experiment - [www.youtube.com/watch?v=ulOPC\\_FWmQM](http://www.youtube.com/watch?v=ulOPC_FWmQM)

Why does an apple turn brown? - [www.youtube.com/watch?v=D82xej2Xhb0](http://www.youtube.com/watch?v=D82xej2Xhb0)

Using the worksheet titled "**Guess What?**" for Grades 3-5, help your students understand the importance of consuming 5 fruits and/or vegetables a day.

Engage students in a discussion about fruits and vegetables. Ask them to name at least 5 fruits and/or vegetables. Then, you can ask students how many fruits and vegetables they eat in a day and whether they know of any compounds present in fruits and vegetables that help us stay strong and healthy.

1

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After the discussion, briefly talk to students about the benefits and the importance of consuming fruits and vegetables. You should talk about how they contain powerful components such as vitamins, minerals, fiber and antioxidants that help us grow stronger and healthier.

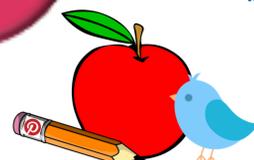
Next, introduce your students to the **scientific method**. Explain how the scientific method is a series of steps that every investigator follows to determine whether a hypothesis, or educated guess, is true or not. The first step of the scientific method is to determine the **problem** or question that is to be addressed. Second, formulate a **hypothesis** or educated guess of the answer to the original question. Third, define and carry out the **procedures** to find out whether or not the hypothesis is true. These procedures include a series of steps that often involve detailed research from validated scientific sources, experiments, etc. Then, collect the **data** from the investigation, and organize it and interpret it as part of the **results**.

Lastly, draw your **conclusions** based on whether you proved or accepted the hypothesis, or whether you disproved or rejected the hypothesis. An alternative conclusion could be that you were unable to accept or reject the hypothesis. However, it is important to provide a reason or possible explanation as to why you reached such conclusion.

Lastly, play the videos titled "The apple experiment" and "Why does an apple turn brown?" in class to help students understand antioxidants more in depth. After watching the videos, students should be able to understand that lemon (and other fruits) acts as an antioxidant, protecting the apple from browning.

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Lastly, do an overview of the "**Guess What?**" worksheet for Grades 3-5. Explain the activity and clarify any questions the students may have.



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

# Guess What?

3-5

## In-class Activity:

### Creating a Hypothesis:

1) Imagine you have a banana and you cut it in half. To one half of the banana, you will add lemon juice. To the other half, you won't add anything. Let both halves stand for 1 hour.

2) a) Make a hypothesis or "educated guess" on what will happen to the banana without the lemon juice.

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b) Why do you think this will happen?

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3) a) Make a hypothesis or "educated guess" on what will happen to the banana with the lemon juice.

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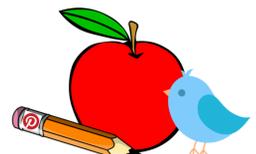
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b) Why do you think this will happen? \_\_\_\_\_

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# Guess What?

3-5

## Home Activity:

### Performing the Experiment:

- 1) Perform the experiment: Take a banana and cut it in half. To one half of the banana, you will add the lemon juice. To the other half, you won't add anything. Let both halves stand for 1 hour. Describe what you see:

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- 2) Conduct research to find out whether or not your hypotheses were true (research about antioxidants, their function, and which fruits and vegetables contain them)

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- 3) What method(s) did you use to find your data? (Books, internet, etc.)

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- 4) After your research, do you accept or reject your hypotheses?

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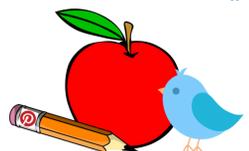
- 5) Conclusion (What did you learn about fruits and vegetables? What other questions do you have?):

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- 6) Bring pictures of your experiment to class.



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# Guess What?

3-5

## ANSWER KEY

### In-class Activity:

#### Creating a Hypothesis:

1) Imagine you have a banana and you cut it in half. To one half of the banana, you will add lemon juice. To the other half, you won't add anything. Let both halves stand for 1 hour.

2) a) Make a hypothesis or "educated guess" on what will happen to the banana without the lemon juice.

The banana will turn brown.

b) Why do you think this will happen?

The banana will be exposed to oxygen and the oxygen will react with the banana, causing its oxidation.

3) a) Make a hypothesis or "educated guess" on what will happen to the banana with the lemon juice.

The banana with lemon juice will not turn brown.

b) Why do you think this will happen?

The banana is protected by the antioxidant present in the lemon juice, which prevents the oxidation reaction that occurs between the banana and oxygen.



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

# Guess What?

3-5

## Home Activity:

## ANSWER KEY

### Performing the Experiment:

- 1) Perform the experiment: Take a banana and cut it in half. To one half of the banana, you will add the lemon juice. To the other half, you won't add anything. Let both halves stand for 1 hour. Describe what you see:

The half of the banana that had lemon juice maintained its original color. On the other hand, the half of the banana without the lemon juice turned brown.

- 2) Conduct research to find out whether or not your hypotheses were true (research about antioxidants, their function, and which fruits and vegetables contain them)

Antioxidants are substances present in fruits and vegetables that protect our body from cellular damage. Some fruits and vegetables that contain antioxidants are: lemons, oranges, blueberries, broccoli, spinach, green peppers, etc.

- 3) What method(s) did you use to find your data? (Books, internet, etc.)

Internet, science books, etc.

- 4) After your research, do you accept or reject your hypotheses?

I accept my hypotheses.

- 5) Conclusion (What did you learn about fruits and vegetables? What other questions do you have?):

I learned that fruits and vegetables have substances that protect my body, such as antioxidants, which help me grow strong and healthy.

- 6) Bring pictures of your experiment to class.



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