



## **Flavors of Fall Lesson Plan for Homeschool**

### Overview

Raddish is designed by a dedicated team of teachers and chefs who believe the kitchen classroom is the tastiest place to learn. We love watching learning come alive when kids mix math, stir science, and taste culture!

Paired with the materials found in your Flavors of Fall box, this lesson plan divides your box into 3 45-60 minute lessons you can use and adapt to support your homeschool study, pre-k – middle school. Depending on your timeframe and child's age and engagement, these can be taught together or separated for a longer lesson. Please refer to the curriculum provided in your box: recipe guides, activity card, and introduction card. Happy cooking! Happy learning!

### **Lesson 1: Pumpkin Crunch Breakfast Parfait and The Brain Needs Breakfast**

Activity Time: 60 minutes

#### **Learning Outcomes**

- Students will learn what the word breakfast means.
- Students will discuss what hunger means, how it feels in their body, and what it means to their brain.
- Students will share reasons why they might skip breakfast and propose solutions so that missing this important meal won't happen.
- Students will share what they normally have for breakfast and assess if it is a balanced meal by using the Food Plate model.
- Students will create a Breakfast Parfait Ingredient Swap chart.
- Students will make and share Pumpkin Crunch Breakfast Parfait.

#### **Materials**



- Recipe guide, ingredients, and tools listed within.
- Food Plate (one version can be found at <https://www.enasco.com/prod/images/products/D0/ACI220871.jpg>)
- An analog clock graphic. One with moveable arms is helpful.
- Breakfast Parfait Ingredient Swap Chart worksheet (included)
- Paper, crayons or markers etc.
- \*Optional magazines or grocery store flyers for pictures of food.

### Resources

- Food Plate Graphic: <https://www.enasco.com/prod/images/products/D0/ACI220871.jpg>
- How lack of food affects the brain: <http://www.livestrong.com/article/482050-how-does-not-eating-affect-the-brain/>
- Opinions & scientific studies on how eating breakfast affects school performance: <https://braindecoder.com/post/does-your-brain-need-breakfast-1585931504>

*Lesson Plan Adapted From [www.thinkbreakfast.com](http://www.thinkbreakfast.com)*

## I. Introduction-Breakfast or Not Breakfast That is the Question

Ask: Did you eat breakfast this morning?

- Have students record what they ate:
  - Younger students can draw a picture.
  - Older Students can list what they ate.
- Show students the Food Plate Graphic.
  - Ask: How many different food groups did you eat for breakfast?
  - Ask: Do you think it matters if you ate from just one category? Or all?
  - Discuss the importance of balanced eating so that the body can get all the nutrients it needs.
    - You should try and eat from three food categories.
    - You should limit sugar, especially at breakfast, because it leads to an energy crash before lunch.

Ask: What are some reasons you might skip breakfast?

- Examples: not enough time, not hungry when you first wake up, etc.
- Brainstorm solutions!
  - Examples: set alarm 20 minutes earlier, pack a breakfast to bring along
- Read the Benefits of Breakfast Section of the Pumpkin Crunch Breakfast Parfait Recipe Guide. Use the Food For Thought Questions to have a discussion.

## 2. Breakfast and Hunger

Ask: What does the word breakfast means?



- a. Breakfast means to “break the fast.” To fast means to not eat for a period of time.
- b. Ask students:
  - i. What time did you eat dinner last night?
  - ii. What time did you have breakfast this morning?
  - iii. How long did your body go without food? Show younger students the analog clock and teach them how to count the hours between meals.
  - iv. Were you hungry before you ate breakfast?
  - v. What if you didn’t eat until lunch time? How hungry would you be then? How many hours would your brain have gone without nutrients?

Ask: What does it mean to be or feel hungry?

- a. Hunger is the body’s message to the brain that more nutrients are needed for growth, maintenance, repair and energy. By the time you are beginning to feel hungry, the body’s energy stores are low and the ability to focus on tasks becomes more difficult.

### 3. Create Your Own Breakfast Parfait Menu

Have students use the Food Plate and the Breakfast Parfait Ingredient Swap Chart worksheet (included) to come up with a wide variety of ingredients that they can use to make delicious, nutritious and quick breakfast options and include 3 food groups in their meal!

### Extension Ideas

- Older students - Research whether skipping breakfast has a measurable effect on school performance. Explore the following resource: <https://braindecoder.com/post/does-your-brain-need-breakfast-1585931504>
- Younger students - Use art supplies or magazines and grocery flyers to create a collage of their favorite parfait combination.

### 4. Kitchen Prep

- a. Read the Pumpkin Crunch Breakfast Parfait recipe card together.
- b. Identify and gather ingredients.
- c. Gather tools.
- d. Discuss kitchen safety. Specifically, oven safety (Visit [Raddishkids.com/pages/safety](http://Raddishkids.com/pages/safety))

### 5. Prepare Pumpkin Crunch Breakfast Parfait

- a. Ask children to read or describe each step.
- b. Together, follow the steps in the recipe.
- c. Give each child a turn to measure, mix, and build.



- d. While the granola is baking students can display their Breakfast Parfait Ingredient Swap Chart and any art work they created.
- e. When the Pumpkin Crunch Breakfast Parfaits are ready, eat, taste and share! Show your friends and family your Breakfast Parfait Ingredient Swap Chart and see if they have any additions and/or have them share what their favorite combination would be.

## Lesson 2: Apple Cider Chicken and Newton's Laws of Motion

Activity Time: 45 minutes

### Learning Outcomes

- Students will learn about Sir Isaac Newton.
- Students will learn the terms *force*, *inertia* and *motion*.
- Students will conduct experiments to gain an understanding of Newton's First Law of Motion.
- Students will make Apple Cider Chicken to share with their friends and family.

### Materials

- Recipe guide, ingredients, and tools listed within.
- Newton's First Law of Motion Experiments worksheet (included)
- For Experiments (*you do not need all of these materials- see experiment worksheet for those that you choose to do*):
  - A ten-foot piece of rope
  - A soccer or basketball, tennis ball and other assorted ball for experimentation.
  - Coins
  - Plastic cups
  - Playing Cards
  - Printer Paper
  - A selection of small unbreakable objects

### Resources

- Experiments for First Law of Motion
  - <http://www.metrofamilymagazine.com/July-2012/Simple-Science-Experiments-Newtons-First-Law-of-Motion/>
  - <http://www.brighthubeducation.com/middle-school-science-lessons/35939-newtons-first-law-of-motion-science-lesson>
- Biography of Sir Isaac Newton  
[http://www.ducksters.com/biography/scientists/isaac\\_newton.php](http://www.ducksters.com/biography/scientists/isaac_newton.php)



- 3 Laws of Motion:
  - <http://www.hometrainingtools.com/a/newton-s-laws-of-motion-science-projects>
  - <http://www.physicsclassroom.com/class/newtlaws/Lesson-1/Inertia-and-Mass>
- Video- First Law of Motion (5:18) [https://www.youtube.com/watch?v=LEHR8YQNm\\_Q](https://www.youtube.com/watch?v=LEHR8YQNm_Q)
- Video- (More detail for older students) Newton's First Law of Motion (5:20) <https://www.youtube.com/watch?v=erghLWXDScl>
- Video- Biography of Sir Isaac Newton (1:32) <https://www.youtube.com/watch?v=UuFAfD7Krhk>

## I. Introduction

- a. Read Newton's Apple section of the Apple Cider Chicken Recipe Guide. Ask:
  - i. What did you learn about Sir Isaac Newton from the Recipe Guide?
  - ii. What do you know about gravity?
  - iii. Discuss the food for thought question.
  - iv. Do you know anything additional about Newton?
  - v. Do you think he was influential? Why or why not?
  - vi. Is there anything you are curious to learn about Newton?
- b. Learn more about Newton
  - i. Younger students - Choose interesting information to share about Sir Isaac Newton's life from the Biography of Sir Isaac Newton: [http://www.ducksters.com/biography/scientists/isaac\\_newton.php](http://www.ducksters.com/biography/scientists/isaac_newton.php).
  - ii. Older Students - Have students read the above biography themselves and watch the video watch the following video: <https://www.youtube.com/watch?v=UuFAfD7Krhk>
- c. Sir Isaac Newton not only described the Law of Gravity he also described three laws of motion. Today we are going to learn and explore his First Law of Motion.

## 2. Newton's First Law of Motion

An object at rest will remain at rest unless acted on by an unbalanced force. An object in motion continues in motion with the same speed and in the same direction unless acted upon by an unbalanced force. This law is often called "the law of inertia".

### What Does This Mean?

Motion - the act of an object changing position.

Force - a push or pull on an object.

Inertia - the resistance an object has to its state of motion.

Videos:

For younger students - [https://www.youtube.com/watch?v=LEHR8YQNm\\_Q](https://www.youtube.com/watch?v=LEHR8YQNm_Q)

For older students - <https://www.youtube.com/watch?v=erghLWXDScl>



### 3. Experiment with Newton's First Law of Motion

Use the worksheet "Experiments to Show Newton's First Law of Motion" (included) to choose experiments to do with your students.

### 4. Kitchen Prep

- a. Read the title page together.
- b. Identify and gather ingredients and tools.
- c. Read the **Featured Culinary Skill – How to Make a Pan Sauce** on the Apple Cider Chicken recipe guide.

### 5. Prepare Apple Cider Chicken

- a. Ask children to read or describe each step.
- b. Give each child a turn to cut, sear and make pan sauce.
- c. Once the Apple Cider Chicken is ready Eat, Taste and Share!
- d. While you are eating, teach your friends and family what you have learned about Sir Isaac Newton and his First Law of Motion. Teach them how to do some of the experiments you conducted to learn about the First Law of Motion.

## Lesson 3: Corn Bread with Maple Bacon Butter and Journey Bread- Food of Necessity for Native Americans

Activity time: 45-60 minutes

### Learning Outcomes

- Students will discuss what they know about Native Americans.
- Students will discuss where Native Americans got their food from.
- Students will brainstorm reasons why Native Americans traveled around the continent in the past and compare and contrast with reasons they travel today.
- Students will learn about Johnny Cakes.
- Students will plan a journey for their class or their family.
- Students will practice the skill of measuring dry ingredients
- Students will make Corn Bread with Maple Bacon Butter.

### Materials

- Recipe guide and ingredients and tools listed within.
- Journey planning supplies: (dependent on the trip)
  - Maps of your area



- Brochures of places students would like to visit
- Access to the internet for research of cost, travel time, opening hours, etc.

## Resources

- History of Lenape people and their Native Foods: <http://lenapeprograms.info>
- Basic Native Culture information: [www.ducksters.com](http://www.ducksters.com)
- History of Johnny Cakes: <https://whatscookingamerica.net/History/Johnnycakes.htm>

## I. Introduction-

- a. Read together the Colonial Corn Bread section of the Recipe Guide. Ask:
  - i. What does it mean to grind something? What tools would you need?
  - ii. Have you ever eaten cornbread? Where? When? Did you like it? Why or why not?
  - iii. Have you ever eaten other foods that use ground corn?
  - iv. What do you know about Native Americans?
  - v. What does it mean to be native to a place?
  - vi. Have you ever heard other things referred to as native? (like plants).

## 2. Native People and Food

- a. Ask: Where do you think Native Americans got their food from?
  - i. Depending on where a tribe lived, near the ocean, in the prairies, Native Indians got their food through four ways:
    - a. Hunting
    - b. Gathering
    - c. Farming
    - d. Fishing
  - ii. Ask: What foods do you think they procured in each of these ways?
  - iii. Ask: Where do you get your food from? Compare and contrast.
- b. Depending on where in North America they lived, Native Americans could not get fresh foods all year round.
  - i. Ask: What do you think they did to keep food for winter or when certain things were not growing or available? (Examples: dry, salt, smoke)
  - ii. Ask: What do you do to get food in the winter or when certain things are not growing or available?

## 3. Corn

One of the foods that was used by many Native American tribes was corn, which they called Maize.



There were many different varieties of corn grown, including popcorn, corn-on-the-cob, as well as corn for chowder, grits, hominy and corn pudding. Corn comes in a variety of colors - white, yellow, blue, red, multicolored and brown colors. Not all the corn was eaten fresh. They would grow enough extra food so they could store it and survive the winter.

Special “hard” corn was dried and pounded into corn meal for corn bread. Other corn was turned into hominy and grits; and others pounded fine into flour for bread and travel food.

No part of the corn plant went to waste. Corn husks were saved and used to make mats, baskets, moccasin liners (used as socks), and dolls. Corn cobs were dried and used as fuel for fires.

One of the foods that many Native Americans traveled with were called Journey Cakes. Also called Johnny Cakes, ashcake, battercake, corn cake, cornpone, hoecake, mush bread, pone, Shawnee cake, and jonikin. They are cornmeal flat bread, similar to a tortilla. The simplest recipes call for nothing but cornmeal, boiling water, and a little salt. The batter should be fairly thin so that when fried on a hot griddle, the batter is no more than a quarter of an inch thick. They were called Journey Cakes because they could be carried on long trips and baked as needed.

The settlers of New England learned how to make johnnycakes from the local Pawtuxet Indians, who showed the starving Pilgrims how to grind and use corn for eating. When the Pilgrims landed at Plymouth in 1620, most of their wheat brought from England had spoiled on the long voyage.

#### **4. Going on a Journey Then and Now**

Bring Chart Paper and markers so students can make a table to compare and contrast the travel of Native Americans of the past with the travel that they would do today.

Before Europeans came and settled in North America, Native Americans had no borders or state lines to cross. They travelled widely across the continent. Ask:

- a. Why do you think that they travelled? (for visiting, festivals, to find food, to trade)
- b. How do you think they got around? (some by boat, most by foot, some by horse)
- c. How do you think they fed their families while they traveled? (gathering, hunting, and stored/preserved foods)
- d. What do you think they brought with them?
- e. Ask these same four questions of the students and their own travel.

#### **5. Plan your own Journey**





- a. Tell the students that they will get to plan a journey for the class or their family to take. You set the parameters of the trip in advance. Such as distance, time available, finances, purpose etc.
- b. Provide the students with the Journey Planning Worksheet (included) and resources that they need to plan such as internet access, maps etc.
- c. Have students complete the Journey Planning Worksheet and present their plan to the class or their family. You could have a vote for best planned trip or use these as a basis for field trips throughout the year.

## 6. Kitchen Prep

- a. Read the title page together.
- b. Identify and gather ingredients and tools.
- c. Discuss kitchen safety, in particular oven Safety and refer to **Dry Measuring Skills** section of the recipe guide. (Visit [Raddishkids.com/pages/safety](http://Raddishkids.com/pages/safety))

## 7. Prepare Cornbread with Maple Bacon Butter

- a. Ask children to read or describe each step.
- b. Give each child a turn mincing, measuring and whipping.
- c. Once the Cornbread with Maple Bacon Butter is ready gather your family and friends together to Eat, Taste and Share!
- d. While your friends are enjoying the snack you can teach them about how Native Americans used corn in their daily lives. You can also share your ideas for a Journey in the future when you can prepare this recipe again to take with you!

## Breakfast Parfait Ingredient Swap Chart

Dairy	Fruit	Grain	Nuts/Seeds	Spice/Flavoring
Vanilla Yogurt	Dried Cranberry	Oats	Pumpkin Seeds	Pumpkin Pie Spice

Some ideas

- coconut yogurt
- cottage cheese
- greek yogurt
- soy yogurt

- blueberry
- melon
- banana
- grapefruit

- quinoa
- cheerios
- leftover cooked rice
- granola

- sesame seeds
- peanuts
- chia seeds
- nut butter

- vanilla
- lemon
- maple syrup
- cinnamon

# Newton's First Law of Motion Experiments

## **Students in Motion**

Created by: Kathy Foust

<http://www.brighthubeducation.com/middle-school-science-lessons/35939-newtons-first-law-of-motion-science-lesson>

### **Materials Needed:**

- A ten-foot piece of rope

### **Instructions:**

1. Ask for two student volunteers.
2. Ask students to each grab and opposite end of the rope.
3. Ask students to each pull the rope so that the rope is taut, but neither student is moving from their original position.
4. Explain to students that the velocity of the rope is zero because there is no motion in either direction, although there is force being applied in both directions.
5. Ask students to explain why the velocity is zero. Allow students to discuss possible conclusions. Once students have discussed possible conclusions, present them with the idea of balanced forces.
6. Explain that the rope is not in motion because the students were applying balanced forces, so each force cancels the other out.
7. Introduce Newton's First Law of Motion: An object will remain at rest or in uniform motion in a straight line unless acted on by an external unbalanced force.
8. Discuss the term *unbalanced force* with the students. Balanced forces apply the same amount of force to an object in opposite directions so that the object will not move in either direction. Unbalanced forces are forces that are unequal in some way so that motion is created by the stronger force.
9. Ask students to apply all of their force to the rope until one student is forced to move.
10. Once the student is forced to move, explain that the unbalanced force of the stronger student caused the motion of the rope, which in turn caused a motion of the other student.
11. Ask students to again pull the rope taut and lean slightly back.
12. Ask one student to release some of their force on the rope. The rope should go slack and the other student may even stumble back a step or two.
13. Explain that this is another method of unbalanced force. The student who stumbled back did so because when they were both pulling on the rope, the forces were balanced, but when the other student loosened their grip on the rope, the forces became unbalanced and the student stumbled back as a result.

# Ball Bounce Experiment

Created by: Steve Davala

<http://www.metrofamilymagazine.com/July-2012/Simple-Science-Experiments-Newton's-First-Law-of-Motion/>

## Materials:

- A basketball, soccer ball, or similar bouncy ball
- A smaller bouncy ball (like a tennis ball or a racquet ball).
- (Optional) An assortment of other balls for further experimenting.

## Instructions:

1. Start outside. First bounce the basketball and tennis ball side by side to compare their bounces. Start them off around chest height.
2. Make a hypothesis (a guess) about what will happen when you stack the small ball on top of the bigger one and then drop it.
3. Test your hypothesis. Try it a few times to ensure they are lined up correctly.

## Analysis:

The energy of motion from the bigger ball is transferred into the smaller one. Most of your attention is on the sky-rocketing smaller ball, but if you look at the basketball, it doesn't have much bounce at all!

## Experiment further:

Hopefully this will make you think of other things. Like what if you switched the two balls and dropped the smaller one on the bottom? What if you used two of the same sized ball? A golf ball on top? Think of other things!

# Penny on a Card Experiment

Created by: Steve Davala

## Materials:

- A small plastic cup
- A playing card
- A coin

## Instructions:

1. Put a playing card on top of the plastic cup.
2. Put a coin on top of the card.
3. With a sharp flick, hit the card out from under the coin! Or pull it really quickly toward you.
4. Observe as the coin drops into the cup.

## Analysis:

The coin has inertia, meaning it really wants to stay in one place. If you move the card slowly, it isn't fast enough to overcome that force. If you flick it quickly, the coin stays in one place and then drops into the cup. An object at rest will remain at rest. If you are brave, put the card on your finger and the coin on top... try to flick the card out until the coin stays on your finger. It can be done!

## Experiment further:

Use a sheet of printer paper with a few heavier (non-breakable) objects on it. See if you can quickly pull the paper out from under the objects.

Put your hand, palm side up, next to your ear. Put a coin on your elbow. In one swift motion, bring your hand straight forward and try to catch the coin before it drops. If you're fast enough, you will catch the coin before gravity has a chance to bring it down.

## Planning a Journey

Find out what parameters you have for planning your journey and then use the resources at your disposal to record your answers to the questions below, and create a proposal for your journey.

1. Where do you want to go? (park, state capital, museum, visit family)
2. What is the purpose of your journey? (visit, learning, fun)
3. Why would others want to go to this location?
4. How much time do you have for your journey?
5. How far away is your destination? (use a map and the scale)
  - a. Measure your trip in distance or time it takes.
  - b. What is the route you will take? Fastest or most scenic?
6. How will you travel there? (public transportation, car, walk, bike)
  - a. How much will that cost?
  - b. Can your whole group/family travel in that manner? i.e. does everyone ride a bike?
  - c. Figure out bus or train schedules etc.
7. Who will travel with you?
8. When will you go?
  - a. Time of day (morning, afterschool)
  - b. Time of week (weekday, weekend)
  - c. Time of year (winter, summer)
  - d. Holiday (Easter weekend, Winter Break)
9. What supplies do you need to bring?
  - a. Food
    - i. Do you need to keep anything cold?
    - ii. Will you bring a food gift for someone you are visiting?
    - iii. Does everyone like what you are bringing?
    - iv. Do you have enough for everyone?
  - b. Clothing
    - i. Do you need any special clothes? (bathing suits, running shoes, hats and gloves)
    - ii. How much do you need to bring? (one day, overnight)
  - c. Map or directions
  - d. Entertainment
    - i. Books
    - ii. Coloring materials, notebooks
    - iii. Electronic device
  - e. Tools
    - i. Shovel
    - ii. Umbrella
    - iii. Hammer
  - f. Other
10. Proposal
  - a. Written document.
  - b. Oral Presentation
  - c. Other