Apples Everywhere 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 Apples Everywhere box, this lesson plan divides your box into 3 45-90 minute lessons you can use and adapt to support your homeschool study for younger students (pre-K – 3rd grade) and older students (4th – 8th grade). 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 cards, skill card, and introduction card. Happy cooking! Happy learning!

Lesson 1: Apple Hand Pies and Turning Delicious Data into Bar Graphs and Pictographs

Activity Time: 45 minutes

Learning Outcomes

- Both younger and older students will participate in an apple taste test.
- Both younger and older students will develop their palates and their vocabulary, using adjectives to describe apples.
- Students will learn the difference between a tally chart and a graph.
- Young students will practice counting skills while recording data in a tally chart.
- Younger students will learn what a pictograph is and create their own.
- Older students will create a scaled bar graph to represent a data set with several categories.
- Older students will learn the terms for various parts of a bar graph: table, label, bar, grid line, category.
- Both younger and older students will solve questions such as "how many more/less", "how many all together", "which has the most/least" using pictographs or bar graphs.

- Students will interview, classmates, friends and/or family members to find out their favorite kind of apple.
- Students will make and share Apple Hand Pies.

Materials

- Recipe guide, ingredients, and tools listed within.
- Apples of different kinds. (Granny Smith, Red Delicious, Fuji etc.)
- Blank paper for tally charts
- Skill Card- Chopping
- Graph paper (print your own at home: www.incompetech.com/graphpaper/square.html)
- Pens, markers, crayons
- Ruler
- Optional – Good story books for teaching graphs, tallying, and data collection.
    - Tally O'Malley by Stuart Murphy (K-2nd Grade)
    - Less Than Zero by Stuart Murphy (2nd-3rd Grade)
    - Tiger Math by Ann Whitehead Nagda (2nd-5th Grade)
    - Family Reunion by Bonnie Bader (1-3rd Grade)

- Websites consulted to create this lesson
    - www.the-best-childrens-books.org
    - www.mathisfun.com/data/tally-marks.html
    - www.theschoolrun.com/pictograph

1. Introduction

a. Display a selection of apples for students to investigate.
    i. Ask students what they notice about the apples?
    ii. Have students use all of their senses to describe the apples. Consult Apple Adjectives blurb in recipe guide for descriptive words.

b. Fun Bites- Apple Taste Test section of the recipe guide
    i. Using the Apple Tasting Chart on the recipe guide, make a chart for each apple for your students. (Older Students can create their own.)
    ii. Follow the instructions for the Apple Taste Test. Refer to the Skill Card for Chopping when appropriate.
    iii. Have each child share what their favorite apple was and why. Encourage them to use the adjectives they have learned.

c. Ask, "now we know that _____'s favorite apple is _____ because it is _____ (adjective) and _____'s favorite apple is _____ _____ (adjective). How can we find out what is the most popular apple in our class/family?"

2. What are: Tally Charts, Pictographs and Bar Graphs?

Tally Chart

A tally chart is used to collect data quickly and efficiently. Filling in a chart with marks representing numbers is easier than writing out words or numerals and the data is collected in sub-groups of five, making it easy to analyze quickly.

a. Explain how to make tally marks. Make one straight line (I) for each number up to four (IIII) then the fifth line crosses through them all to make five (𝍸). Then start the next group of five to keep counting.
b. Have students practice making tally marks in a chart. Some examples might be the color of cars on your street, tins in the cupboard (small, medium, large or fruit, vegetable, protein).

Example: **What is your favorite thing about Halloween?**

Carve pumpkin	𝍸 I	**6**
Dress up	𝍸 I	**6**
Trick or treating	𝍸 𝍸	**10**
Haunted house	I	**1**
Eat candy	𝍸 𝍸 II	**12**

c. Have students interpret the graph's data:
    i. What was the thing people like to do the least? Most?
    ii. How many people answered the question?
    iii. What two things did people like to do the same amount?

Now that you have your data in a Tally Chart how do you display the information so that you can make more comparisons?

Pictograph

A pictograph is a way of showing data using images. For younger students use one picture to represent one answer. Older students could use one picture to represent five, ten or any other multiple depending on their ability.

Example:

What is your favorite fruit?

FRUIT	NUMBER OF CHILDREN WHO CHOSE IT
PEAR	
WATERMELON	
ORANGE	
APPLE	
BANANA	

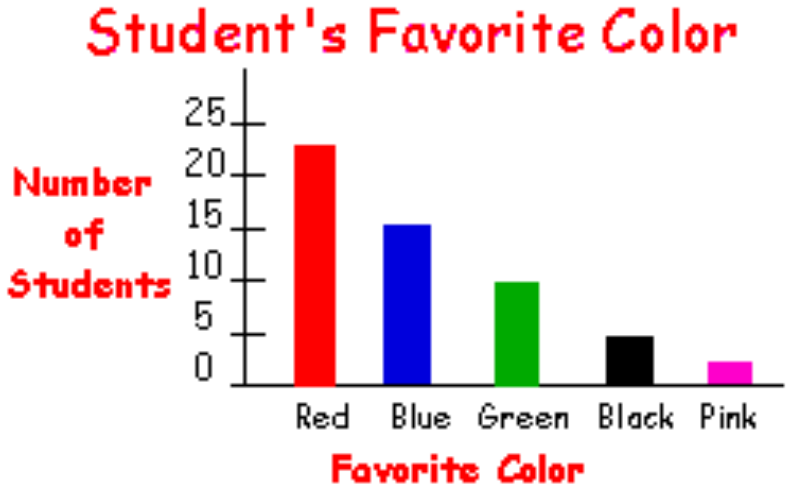
www.theschoolrun.com/pictograph

a. Have students answer questions about the graph.
   iv. What was the favorite fruit?
   v. How many children like pears?
   vi. How many children completed the question all together?

Bar Graphs

A bar graph is useful for comparing facts. The bars provide a visual display for comparing quantities in different categories. Bar graphs help us to see relationships quickly. Each part of a bar graph has a purpose.

Title	The title tells us what the graph is about
Labels	The labels tell us what kinds of facts are listed.
Bars	The bars show the facts.
Grid lines	Grid lines are used to create the scale.
Categories	Each bar shows a quantity for a particular category.



www.enchantedlearning.com

a. Have students answer questions about the graph.
    a. What is the title? (Student's Favorite Color)
    b. What are the labels on the vertical axis? (Number of Students) Horizontal axis? (Favorite Color)
    c. What did the red bar tell you? (more than 20 student's like red) Pink bar? (less than 5 student's like pink)
    d. What is the scale of the graph? (From 0 to 25. In increments of 5)
    e. What were the 5 categories on the graph? (red, blue, green, black, pink)

3. Collecting Data

a. Have students create a tally chart for collecting information about people's favorite apples.

Example:

WHAT IS YOUR FAVORITE KIND OF APPLE?

APPLE	TALLY	NUMBER
Granny Smith		
Macintosh		
Red Delicious		

b. Have students interview, family, friends, neighbors etc. Decide how many people they should ask. A minimum of 10 for young children would be good for graphing purposes.
c. You can first do a role play where you practice having them introduce themselves, explain what they are doing, and ask the question.

4. Create and Analyze the Graph

Younger Students

a. Create a pictograph using the data collected from the tally chart.
b. Create the graph on a large piece of paper so that students can either draw an apple to represent each tally mark or glue/tape on an apple picture.
c. Have students analyze their graph.
    i. What kind of apple did people like the most? The least?
    ii. How many people liked _____ apple?
    iii. How many people did you ask all together?
    iv. How many people liked green apples?
    v. How many like red apples? Etc.
    vi. What other conclusions can be made?

Older Students

a. Using the data collected from the tally chart, create a bar graph.
b. Create the graph on graph paper.
c. Make sure to use all five parts of a bar graph.

Use this check list to help- fill in the information in the right column.

Title	
Labels	
Bars	
Grid lines	
Categories	

d. Have students analyze their graph.
    i. What kind of apple did people like the most? The least?
    ii. How many people liked _____ apple?
    iii. How many people did you ask all together?
    iv. How many people liked green apples?
    v. How many like red apples? Etc.
        i. What other conclusions can be made?

5. Kitchen Prep

a. Read the Apple Hand Pies recipe card together.

b. Identify and gather ingredients.
c. Gather tools.
d. Discuss kitchen safety, specifically, oven safety (Visit Raddishkids.com/pages/safety)

6. Prepare Apple Hand Pies!

a. Ask children to read or describe each step.
b. Together, follow the steps in the recipe.
c. While the Apple Hand Pies are baking, display your pictographs and bar graphs where you will be sharing your apple creation.
d. Gather your friends and family. Describe to them what you learned about people's favorite apples by showing them your graphs.
e. When the Apple Hand Pies are ready, eat, taste and share!

Lesson 2: Apple Chicken Curry and How Far Does Your Apple Travel?

Activity Time: 90 minutes

Learning Outcomes

- Students will discuss where their food comes from.
- Students will learn the terms local and global, specifically as they apply to food.
- Students will learn some reasons why eating locally is good for them, for their community and for the environment.
- Older students can independently map and calculate the distances that their food travels and estimate the impact on the environment.
- Students will make Apple Chicken Curry to share with their family.

Optional Learning Outcomes

- Students will compare what is available at a grocery store compared to a farmer's market.
- Students will interview the produce manager at their grocery store and a seller of produce at a farmer's market.

Materials

- Recipe guide, ingredients, and tools listed within.
- World map or atlas.
- Fruit or vegetables that have stickers on them that indicate where they were grown.
- Epicurious Map of Food that is in season right now in your state! www.epicurious.com/archive/seasonalcooking/farmtotable/seasonalingredientmap
- Optional

- Stuff- The Secret Lives of Everyday Things by John C. Ryan and Alan Thein Durning.

- Websites consulted to create this lesson
  - www.naturallysavvy.com
  - www.epicurious.com/archive/seasonalcooking/farmtotable/seasonalingredientmap
  - www.snaped.fns.usda.gov/nutrition-through-seasons/seasonal-produce

1. Introduction

a. Place a tray of produce on the table.
   i. Have students examine the produce.
   ii. Ask them what they notice. Point out labels and help younger students to read.
   iii. Provide students with a map and challenge/help them to locate from where the food has come.
   iv. Older students can use maps and the internet to determine and chart the nuber of miles each item has traveled.
   v. Conclude: have these foods travelled far? Why or why not?
   vi. Does it matter how far food travels en route to our table? Why?

2. Discussion: Eating Locally

a. **What does it mean to eat locally?**
   i. The definition of local varies widely. For some, it means a small area including a city and its surroundings. For others, it specifies food that was grown or produced within an area with a radius of 100 or 150 miles. For still others, it means eating food that is grown or produced within a day's drive (400 mile radius).
   ii. A person that prefers to eat locally is sometimes called a *locavore*.
   iii. Imagine you live in New York City and you are eating strawberries in the summer. Where might they come from? How did they get there? Now imagine eating strawberries in February. Do they taste the same as the summer? Did they travel farther?

b. **Consider the journey from farm to fork:**
   i. Grower grows strawberries
   ii. Pickers pick and sort
   iii. Packers pack berries
   iv. Shipper brings to distribution center
   v. Shipper ships to a local warehouse in your town
   vi. Grocery distributor delivers to store
   vii. Consumer shops at store
   viii. Consumer brings berries home and eventually eats it

c. **Are there benefits to eating locally? Challenges?**

i. Brainstorm why it might be good to eat food that was grown nearby. Use the chart below to support your conversation. Why might it be difficult to always eat food that has been locally grown? (Weather, selection, geography, cost, etc.)

d. **Ways to encourage and teach the benefits eating locally and seasonally**

- Take students to farmer's markets or local farms and allow them to meet those who cultivate the produce.
- Have students eat foods that are in season and write about what they taste and look like. Then at another time of year have them eat the food when it is out of season and compare how it tastes and what it looks like.
- Have students explore labels on food containers and track how far it has traveled.
- Have students' create interview questions for farmers at the farmers market and grocery store produce manager. Have students compare the answers and share what they learned with their class and their family.
- Have Older Students read from Stuff- The Secret Lives of Everyday Things by John C. Ryan and Alan Thein Durning. There is a chapter about all of the resources that go into getting an order of fries from a fast food restaurant.

- **Local food is often fresher, tastes better, and is more nutritious.** Food at farmers markets has usually been picked within 24 hours of your purchase. It has its full and real flavor. The freshness also affects the nutritional value of food which declines over time. Fresh food will last longer after you buy it.

- **Local food often has less impact on the environment**. If you live in Iowa and are eating an apple from New Zealand, it has traveled thousands of miles to get to your plate. During its trip your apple "consumed" fossil fuel, releasing pollutants that contribute to global climate change. Refrigeration of food on this long trip would add even more to the fossil fuels and resulting pollutants. Eating locally grown food helps eliminate the need for all the long distance fuel-burning transportation.

- **Local food means more money for the local economy**. Instead of handing money over to a big corporation that probably have its workers and headquarters in another city or country you can help your local farmer and economy.

- **Local food may cost the consumer less.** When the farmer does not need to spend as much money on transporting, processing, refrigerating and marketing their food to you they can lower their costs for you to buy the product.

- **Local Food Promotes Food Safety.** Food with less distance to travel has less chance for harmful contamination or spoiling in transit.

- **Local Food Is Also Seasonal Food.** Food that is grown locally follows the natural season that you are in. This encourages you to eat a greater variety of nutritious food.

3. Kitchen Prep

a. Read the title page together.
b. Identify and gather ingredients and tools.
c. Discuss kitchen safety, in particular stove top safety, keep elbows high when stirring. (Visit Raddishkids.com/pages/safety)

4. Prepare Apple Curry

a. Ask children to read or describe each step.
b. Give each child a turn measuring, slicing, etc.
c. Where did your apples come from? How far did they travel? Does this affect their flavor?
d. Once the Apple Curry is ready eat, taste and share!

Lesson 3: Dutch Apple Pancake and
Every Fruit and Vegetable Has a Season
Activity time: 45 minutes

Learning Outcomes

- All students will learn about seasons and why we have them.
- Younger Students will describe what their garden or local park looks like in each season.
- Students will learn that fruit and vegetable plants change with each season.
- Older students will choose a fruit or vegetable and map it's lifecycle during the four seasons.
- Students will make Dutch Apple Pancakes.

Materials

- Recipe guide, ingredients and tools listed within.
- Blank Plant Lifecycle Worksheet (such as those found with a Google image search.)
- Optional
    - Let's Learn About the Four Seasons- Spring, Summer, Fall and Winter (3:26) www.youtube.com/watch?v=D6yQ8-M8rmU
    - Lifecycle of a Pumpkin (2:37) https://www.youtube.com/watch?t=2&v=tU-GwFHQZI8
    - Books about the lifecycle of plants
        - Oh say Can you Seed? All About Flowering Plants - A Cat in the Hat book by Bonnie Worth
        - Red Leaf, Yellow Leaf by Lois Ehlert
        - A Tree Is a Plant by Clyde Robert Bulla and Stacey Schuett
        - A Fruit is a Suitcase for Seeds by Jean Richards and Anca Hariton\

Sites consulted for this lesson plan

- www.the-best-childrens-books.org
- www.epicurious.com/archive/seasonalcooking/farmtotable/seasonalingredientmap
- www.timeanddate.com/astronomy/seasons-causes.html
- www.morehead.unc.edu/Shows/EMS/seasons.htm

1. **Introduction**
   a. Ask your students what a season is? How many are there? Why do seasons happen? What do you do differently in each season? What do animals do differently in each season? What do plants do differently in each season?

2. **The Science of Seasons**
   You can show the video Let's Learn about the Four Seasons- Spring, Summer, Fall and Winter www.youtube.com/watch?v=D6yQ8-M8rmU.

Seasons

- The year is divided into four seasons: winter, summer, spring, and autumn. Each season lasts three months. Winter is the coldest, summer is the hottest, and spring and autumn are in between.
- The seasons have a lot of impact on what happens on the earth. For example, in winter some animals hibernate and others migrate to warmer places.
- Seasons are caused by the earth's changing position to the sun. The earth travels around the sun once every year. As the earth goes around the sun the amount of sunlight each place on the planet gets everyday changes. This change creates the seasons.
- The earth is tilted. This has two affects: the angle of the sun to the earth and the length of the days. For half of the year the North Pole is pointed towards the sun (northern part of the planet gets more light) for the other half of the year the South Pole is pointed towards the sun (southern part of the planet gets more light). This causes half the year to have summer and the other half winter, and why North America's seasons are opposite to Australia's.

Younger Students

e. Invite students to observe what their garden or neighborhood park looks like right now.
f. What season are you in?
g. Draw a picture that shows your garden or park in this season and label it with the name of the season.
h. Have students imagine what it will look like in another season. Describe it and draw it. Repeat for remaining seasons.
i. What season do the students like the best? Why?
j. Are there different foods you eat in different seasons? Do you have a favorite "food season"? (ex: "I like fall the best because it is the best time of year for apples and winter squash.)

Older Students

a. Make a video or book about why the seasons change.
b. Are there different foods you eat in different seasons? Do you have a favorite "food season"? (ex: "I like fall the best because it is the best time of year for apples and winter squash.)

3. How Are Plants Affected by Seasons

a. Read the Fun Bites- Life Cycle of an Apple with students. Note how all parts of the cycle are necessary for the apple to grow. See if students can decide what part of the cycle happens in each season before reviewing the insert box about Seasonality.

Younger Students

a. Watch a video and song about the Lifecycle of a Pumpkin (2:37)
https://www.youtube.com/watch?t=2&v=tU-GwFHQZI8

Older Students

a. **Choose a food bearing plant you would like to study**
   i. Using books, the internet, and observation if possible, research the lifecycle of that plant.
   ii. Looking at the plant's lifecycle and the environment that it grows in decide which part of the cycle fits into each of the four seasons. Refer back to seasonality on the Fun Bites page of the recipe guide. Recall the reason the earth experiences seasons. Why do you think that each part of the lifecycle happens in that season?
   iii. Draw the life cycle of the plant and indicate which part of the cycle fits into each of the four seasons.

Optional

b. Look at the Epicurious website map of what is in season in your state right now. Plan a meal using ingredients that are fresh, local and in season. www.epicurious.com/archive/seasonalcooking/farmtotable/seasonalingredientmap

4. Kitchen Prep

a. Read the title page together.
b. Identify and gather ingredients and tools.
c. Discuss kitchen safety, in particular stove top safety. (Visit Raddishkids.com/pages/safety)

5. Prepare Dutch Apple Pancake

a. Ask children to read or describe each step.

b. Give each child a turn, peeling, slicing, etc.
c. While you are waiting for your Dutch Apple Pancake to bake, hang your pictures of the seasons (Younger Students) and/or your complete Seasonal Plant Lifecycle diagrams (Older Students) for a gallery viewing.
d. Gather together with your friends and family to enjoy the Dutch Apple Pancake. Eat, taste and share!