

# Pumpkin Logic Puzzle

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**Common Core State Standards:** This lesson is correlated to the following CCSS, as well as the Arizona Additions to the CCSS.

**Mathematical Practices (MP):** Problem solving, reasoning and proof, communication, representation, and connections; adaptive reasoning, strategic competence, conceptual understanding, procedural fluency, and productive disposition.

<b>First Grade:</b>	1.MP.1
<b>Second Grade:</b>	2.MP.1
<b>Third Grade:</b>	3.MP.1
<b>Fourth Grade:</b>	4.MP.1
<b>Fifth Grade:</b>	5MP.1
<b>Sixth Grade:</b>	6.MP.1

**Student Learning Objectives:** Instruction in this lesson should result in students achieving the following objectives:

1. Locate information from a chart.
2. Use logical thinking to answer questions.

## Materials needed:

- ✓ Math Lesson 1 Student Worksheet – Pumpkin Logic Puzzle

## Terms:

- *Produced* - create: grow: cultivate by growing.

**Interest Approach:** Use an interest approach that will prepare the students for the lesson. Teachers often develop approaches for their unique class and students situations. Possible interest approaches are listed in the interests approach section of this guide.

**Teaching Strategies:** Instruct the students to apply logical thinking to solve a puzzle. Have the students complete **Math Lesson 1 Student Worksheet- Pumpkin Logic Puzzle**.

**Review/Summary:** Use the student learning objectives to summarize the lesson. Have students explain the content associated with each objective. Student responses can be used in determining which objectives need to be reviewed or taught from a different angle. Use observations as the basis for reteaching areas where student mastery may need improvement.

**Application:** Use the student worksheets to reinforce the concepts of the lesson. Classroom discussion of the objectives and student questions will assist in applying concepts.

**Evaluation:** Focus the evaluation of student achievement on mastery of the objectives as stated in the lesson. A written test can also be used to assess student achievement of the objectives.

# Pumpkin Riddle

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**Common Core State Standards:** This lesson is correlated to the following CCSS, as well as the Arizona Additions to the CCSS.

**Operations and Algebraic Thinking (OA):** Understand and apply properties of operations and the relationship between addition and subtraction; represent and solve problems involving multiplication and division; solve problems involving the four operations, and identify and explain patterns in arithmetic; gain familiarity with factors and multiples; generate and analyze patterns; write and interpret numerical expressions; and understand ratio concepts and use ratio reasoning to solve problems.

**Number and Operations in Base Ten (NBT):** Understand place value; extend counting sequences; use place value understanding and properties of operations to perform multi-digit arithmetic; and perform operations with multi-digit whole numbers and with decimals to hundredths.

**Number System (NS):** Apply and extend previous understandings of multiplication and division to divide fractions by fractions; compute fluently with multi-digit numbers and find common factors and multiples; and apply and extend previous understandings of numbers to the system of rational numbers.

**Mathematical Practices (MP):** Problem solving, reasoning and proof, communication, representation, and connections; adaptive reasoning, strategic competence, conceptual understanding, procedural fluency, and productive disposition.

<b>Kindergarten:</b>	K.OA.5, K.MP.2, K.MP.7, K.MP.8
<b>First Grade:</b>	1.OA.6, 1.MP. 2, 1.MP.7, 1.MP.8
<b>Second Grade:</b>	2.OA.2, 2.MP. 2, 2.MP.7, 2.MP.8
<b>Third Grade:</b>	3.OA.7, 3.MP. 2, 3.MP.7, 3.MP.8
<b>Fourth Grade:</b>	4.NBT.4, 4. NBT.6, 4.MP. 2, 4.MP.3, 4.MP.4, 4.MP.5, 4.MP.7, 1.MP.8
<b>Fifth Grade:</b>	5.NBT.5, 5.NBT.6, 5.MP.2, 5.MP.6, 5.MP.7, 5.MP.8
<b>Sixth Grade:</b>	6.NS.2, 6.MP.2, 6.MP.7, 6.MP..8

**Student Learning Objectives:** Instruction in this lesson should result in students achieving the following objectives:

1. Demonstrate computation skills to answer problems.

**Materials needed:**

- ✓ Math Lesson 2 Student Worksheet –Pumpkin Riddle

**Terms:**

- No specific terms were identified for this lesson.

**Interest Approach:** Use an interest approach that will prepare the students for the lesson. Teachers often develop approaches for their unique class and student situations. Possible interest approaches are listed in the interest approach section of this guide.

**Teaching Strategies:** Have the students complete *Math Lesson #2 Student Worksheet – Pumpkin Riddle*.

**Review/Summary:** Use the student learning objectives to summarize the lesson. Have students explain the content associated with each objective. Student responses can be used in determining which objectives need to be reviewed or taught from a different angle. Use observations as the basis for reteaching areas where student mastery may need improvement.

**Application:** Use the student worksheet to reinforce the concepts of the lesson. Classroom discussion of the objectives and student questions will also assist in applying concepts.

**Evaluation:** Focus the evaluation of student achievement on mastery of the objectives as stated in the lesson. A written test can also be used to assess student achievement of the objectives.

# Pumpkin Word Problems

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**Common Core State Standards:** This lesson is correlated to the following CCSS, as well as the Arizona Additions to the CCSS.

**Operations and Algebraic Thinking (OA):** Understand and apply properties of operations and the relationship between addition and subtraction; represent and solve problems involving multiplication and division; solve problems involving the four operations, and identify and explain patterns in arithmetic; gain familiarity with factors and multiples; generate and analyze patterns; write and interpret numerical expressions; and understand ratio concepts and use ratio reasoning to solve problems.

**Number and Operations in Base Ten (NBT):** Understand place value; extend counting sequences; use place value understanding and properties of operations to perform multi-digit arithmetic; and perform operations with multi-digit whole numbers and with decimals to hundredths.

**Mathematical Practices (MP):** Problem solving, reasoning and proof, communication, representation, and connections; adaptive reasoning, strategic competence, conceptual understanding, procedural fluency, and productive disposition.

<b>Kindergarten:</b>	K.OA.2, K.MP.1, K.MP.2 K.MP.3 K.MP.4 K.MP.5
<b>First Grade:</b>	1.AO.6 1.MP.2, 1.MP.7, 1.MP.8
<b>Second Grade:</b>	2.OA.2, 2.MP.2, 2.MP.7, 2.MP.8
<b>Third Grade:</b>	3.OA.7, 3.NBT.2, 3.MP.2, 3.MP.7, 3.MP.8
<b>Fourth Grade:</b>	4.NBT.4, 4.NBT.6, 4.MP.2, 4.MP.3, 4.MP.4, 4.MP.5, 4.MP.7, 4.MP.8

**Student Learning Objectives:** Instruction in this lesson should result in students achieving the following objectives:

1. Students will use mathematical strategies to solve word problems.

## Materials needed:

- ✓ Math Lesson 3 Student Worksheet – Pumpkin Word Problems

## Terms:

- Employee
- Pumpkin Vine

**Teaching Strategies:** Have the students complete *Word Problems Worksheet*.

**Review/Summary:** Use the student learning objectives to summarize the lesson. Have students explain the content associated with the lesson. Student responses can be used in determining which objectives need to be reviewed or taught from a different angle. Use observations as the basis for reteaching areas where student mastery may need improvement.

**Application:** Use the student worksheet to reinforce the concept of the lesson. Classroom discussion of the objectives and student questions will also assist in applying concepts.

**Evaluation:** Focus on the evaluation of student achievement on mastery of the objectives as stated in the lesson. A written test can also be used to assess the student achievement of the objectives. The post-test will evaluate students' gained knowledge.

# Pumpkins by the Pound

Taken from Oklahoma Ag in the Classroom



**Common Core State Standards:** This lesson is correlated to the following CCSS, as well as the Arizona Additions to the CCSS.

**Measurement and Data (MD):** Describe and compare measurable attributes; classify objects and count the number of objects in categories; measure and estimate lengths indirectly and by iterating length units; tell and write time; represent and interpret data; work with money; Solve problems involving measurement and estimation of intervals of time, liquid volumes, and masses of objects; understand concepts of area and relate area to multiplication and to addition; recognize perimeter as an attribute of plane figures and distinguish between linear and area measures; solve problems involving measurement and conversion of measurements from a larger unit to a smaller unit; and understand concepts of angle and measure angles.

**Mathematical Practices (MP):** Problem solving, reasoning and proof, communication, representation, and connections; adaptive reasoning, strategic competence, conceptual understanding, procedural fluency, and productive disposition.

<b>Kindergarten:</b>	K.MD.1, K.MP.1
<b>First Grade:</b>	1.MD.4, 1.MP.2, 1.MP.3, 1.MP.4, 1.MP.5, 1.MP.6
<b>Second Grade:</b>	2.MD.2, 2.MP.2, 2.MP.3, 2.MP.4, 2.MP.5, 2.MP.6
<b>Third Grade:</b>	3.MD.4, 3.MP.1, 3.MP.4, 3.MP.6

## Materials needed:

- ✓ Math Lesson 4 Student Worksheet – Pumpkins by the Pound
- ✓ Tape Measure
- ✓ Scales (supplied by teacher)
- ✓ 6 pumpkins of varying size (supplied by teacher)

## Terms:

- No specific terms were identified in this lesson.

**Teaching Strategies:** Have the students work as a class, independently or in small groups. Have 6 students weigh themselves on a bathroom scale. Record their weights. Have the same students stand on the scale with one of the pumpkins. Have students subtract weight of student with pumpkin by the weight of the student to find the weight of the pumpkin. Have students record pumpkin weights on student worksheet. Have students work in pairs, groups, or individually to determine the diameter and height of the pumpkin. Record findings on the worksheet and answer the questions.

**Review/Summary:** Use the student learning objectives to summarize the lesson. Have students explain the content associated with the lesson. Student responses can be used in determining which objectives need to be reviewed or taught from a different angle. Use observations as the basis for reteaching areas where student mastery may need improvement.

**Application:** Use the student worksheet to reinforce the concept of the lesson. Classroom discussion of the objectives and student questions will also assist in applying concepts.

**Evaluation:** Focus on the evaluation of student achievement on mastery of the objectives as stated in the lesson. A written test can also be used to assess the student achievement of the objectives. The post-test will evaluate students' gained knowledge



# Show What You Know

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**Common Core State Standards:** This lesson is correlated to the following CCSS, as well as the Arizona Additions to the CCSS.

- 1. Reading Standards: Foundational Skills (RF):** Students will demonstrate an understanding and working knowledge of concepts of print, the alphabetic principle, and other basic conventions of the English writing system.
- 2. Reading Standards for Literature (RL):** Students gain adequate exposure to a range of texts and tasks.

**Kindergarten:** K.RF.4, K.RL.1

**First Grade:** 1.RF.4, 1.RL.1

**Second Grade:** 2.RF.4, 2.RL.1

**Third Grade:** 3.RF.4, 3.RL.1

**Student Learning Objectives:** Instruction in this lesson should result in students achieving the following objective:

- 1.** Identify pumpkin terms.
- 2.** Students will use reading strategies to identify information found in the text to answer questions.

## Materials Needed:

- ✓ Illinois Farm Bureau Pumpkin AgMag
- ✓ [www.agintheclassroom.org](http://www.agintheclassroom.org)
- ✓ English Language arts Lesson 1 Students worksheet –pre and post test for each child

## Terms

- **Acre** - a unit of measurement for land. Approximately the size of a football field.
- **Cross-Pollination** – The transfer of pollen from the anther of the flower of one plant to the flowers of a different plant.
- **Jack-o-lantern** - A lantern made from a hollowed pumpkin with a carved face, usually displayed on Halloween.
- **Pollination** - To transfer pollen from an anther to the stigma of a flower. When a male pollen grain is introduced to the female part of the flower, enabling fertilization to take place.
- **Variety** – Different types of pumpkins.

**Teaching Strategies:** Have the students complete ELA Lesson 1 Student Worksheet to ascertain their knowledge of pumpkins. After the worksheet is graded, students will read the Pumpkin AgMag to help them answer the remaining questions.

**Review/Summary:** Use the student learning objectives to summarize the lesson. Have students explain the content associated with the lesson. Student responses can be used in determining which objectives need to be reviewed or taught from a different angle. Use observations as the basis for reteaching areas where student mastery may need improvement.

**Application:** Use the student worksheet to reinforce the concept of the lesson. Classroom discussion of the objectives and student questions will also assist in applying concepts.

**Evaluation:** Focus on the evaluation of student achievement on mastery of the objectives as stated in the lesson. A written test can also be used to assess the student achievement of the objectives. The post-test will evaluate students' gained knowledge.

# The Nutritious Pumpkin

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**Common Core State Standards:** This lesson is correlated to the following CCSS, as well as the Arizona Additions to the CCSS.

- 1. Reading Standards for Informational Text (RI):** Students will gain adequate exposure to a range of texts and tasks and demonstrate an understanding in: key ideas and detail, craft and structure, integration of knowledge and ideas, range of reading and level to text complexity.
- 2. Speaking and Listening Standards (SL):** Students will demonstrate an understanding in; comprehension and collaboration, and presentation of knowledge and ideas

<b>Kindergarten:</b>	K.RI.1, K.SL.1
<b>First Grade:</b>	1.RI.1, 1.SL.1
<b>Second Grade:</b>	2.RI.1, 2.SL.1
<b>Third Grade:</b>	3.RI.1, 3.SL.1

**Student Learning Objectives:** Instruction in this lesson should result in students achieving the following objective:

- 1.** Read and interpret a nutrition label
- 2.** Show knowledge of the nutritional elements of a pumpkin

## Materials Needed:

- ✓ ELA Lesson 2 Student Worksheet
- ✓ Copy of nutrition labels

## Terms:

- No specific terms were identified for this lesson.

**Teaching Strategies:** Depending upon the knowledge of the students, the teacher may have to introduce a nutrition label and discuss some of the information provided on the label. Then assign the reading ELA Lesson 2 Student Information Sheet to be done in groups, individually, or as a class. After reading the information, the student will complete the ELA Lesson 2 Student Worksheet.

**Review/Summary:** Use the student learning objectives to summarize the lesson. Have students explain the content associated with each objective. Student responses can be used in determining which objectives need to be reviewed or taught from a different angle. Use observations as the basis for reteaching areas where student mastery may need improvement.

**Application:** Use the student worksheet to reinforce concepts of the lesson. Classroom discussion of the objectives and student questions will also assist in applying concepts.

**Evaluation:** Focus the evaluation of student achievement on mastery of the objectives as stated in the lesson. A written test can also be used to assess student achievement of the objectives.

# Anatomy of a Pumpkin

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**Common Core State Standards:** This lesson is correlated to the following CCSS, as well as the Arizona Additions to the CCSS.

1. **Reading Standards for Literature (RL):** Students gain adequate exposure to a range of texts and tasks.
2. **Reading Standards for Informational Text (RI):** Students will gain adequate exposure to a range of texts and tasks and demonstrate an understanding in: key ideas and detail, craft and structure, integration of knowledge and ideas, range of reading and level to text complexity

**Kindergarten:** K.RL.1, K.RI.1

**First Grade:** 1.RL.1, 1.RI.1

**Second Grade:** 2.RL.1, 2.RI.1

**Third Grade:** 3.RL.1, 3.RI.1

**Student Learning Objectives:** Instruction in this lesson should result in students achieving the following objective:

1. Understand vocabulary as it relates to pumpkins.
2. Show knowledge of the anatomy of a pumpkin.

## Materials Needed:

- ✓ Vocabulary Cards

## Terms:

- **Blossom** – a flower
- **Candle** – a waxy object that you light inside a pumpkin
- **Carve** – to cut the eyes, nose and mouth on a pumpkin
- **Green Pumpkin** – grows from the pumpkin flower
- **Harvest**- to pick
- **Jack-o-lantern** – a pumpkin with a face
- **Patch**- a pumpkin garden or field
- **Pulp**- mushy inside part of a pumpkin
- **Pumpkin pie**- a pumpkin dessert
- **Ribs**- lines on the outside of a pumpkin

- **Seed-** small object is oval shaped and found inside the pumpkin
- **Shovel-** tool used to dig
- **Skin-** the outside part of a pumpkin
- **Soil-** dirt
- **Sprout-** a tiny plant; the beginning stages of a plant
- **Vine-** a plant that grows along the ground
- **Weed-** to take plants or weeds out of the garden that you do not want

**Teaching Strategies:** Talk about the anatomy of a pumpkin. Then have the class divide into groups and match the vocabulary words with their definitions. Once all of the definitions are paired with their meanings have the students write a story using 10 of the vocabulary words.

**Review/Summary:** Use the student learning objectives to summarize the lesson. Have students explain the content associated with each objective. Student responses can be used in determining which objectives need to be reviewed or taught from a different angle. Use observations as the basis for reteaching areas where student mastery may need improvement.

**Application:** Use the student worksheet to reinforce concepts of the lesson. Classroom discussion of the objectives and student questions will also assist in applying concepts.

**Evaluation:** Focus the evaluation of student achievement on mastery of the objectives as stated in the lesson. A written test can also be used to assess student achievement of the objectives.

# Pumpkins vs. Oranges

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**Common Core State Standards:** This lesson is correlated to the following CCSS, as well as the Arizona Additions to the CCSS.

- 1. Speaking and Listening Standards (SL):** Students will demonstrate an understanding in; comprehension and collaboration, and presentation of knowledge and ideas

**Kindergarten:** K.SL.1

**First Grade:** 1.SL.1

**Second Grade:** 2.SL.1

**Third Grade:** 3.SL.1

**Fourth Grade:** 4.SL.1

**Fifth Grade:** 5.SL.1

**Sixth Grade:** 6.SL.1

## Materials needed:

- ✓ Language Arts Lesson 4 Student Worksheet – Venn Diagrams
- ✓ Pumpkins and Oranges

## Terms:

- No specific terms were identified in this lesson.

**Teaching Strategies:** Pass around the orange and pumpkin and the orange and pumpkin seeds. On the board have student's identify the similarities and differences in the orange and pumpkin. Have students fill in their Venn diagram with the appropriate answers.

**Review/Summary:** Use the student learning objectives to summarize the lesson. Have students explain the content associated with the lesson. Student responses can be used in determining which objectives need to be reviewed or taught from a different angle. Use observations as the basis for reteaching areas where student mastery may need improvement.

**Application:** Use the student worksheet to reinforce the concept of the lesson. Classroom discussion of the objectives and student questions will also assist in applying concepts.

**Evaluation:** Focus on the evaluation of student achievement on mastery of the objectives as stated in the lesson. A written test can also be used to assess the student achievement of the objectives. The post-test will evaluate students' gained knowledge



# Life Cycle of a Pumpkin

Taken from Illinois Ag in the Classroom

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**Arizona State Learning Standards:** This lesson is correlated to the following State Learning Standard.

1. **Life Science:** Understand the fundamental concepts of principles and interconnections of the life, physical and earth/space sciences.

**Arizona State Objectives:** This lesson addresses the following objectives: (Strand, Concept, Performance objective)

<b>Kindergarten:</b>	4.2
<b>First Grade:</b>	4.2
<b>Second Grade:</b>	4.2
<b>Third Grade:</b>	4.2.2

**Student Learning Objectives:** Instruction in this lesson should result in students achieving the following objectives:

1. Understanding the lifecycle of a pumpkin.

## Materials needed:

- ✓ Life Cycle of a Pumpkin Book
- ✓ Pumpkin Circle Book
- ✓ Life Cycle of a pumpkin Teacher Worksheet
- ✓ Sample Pumpkin Chain craft
- ✓ Construction paper parts
- ✓ Orange paper plates
- ✓ Yarn
- ✓ Scissors
- ✓ Markers (not included in the kit)
- ✓ Stapler (not included in the kit)

## Terms:

- **Pollination** - To transfer pollen from an anther to the stigma of a flower. When a male pollen grain is introduced to the female part of the flower, enabling fertilization to take place.

➤ **Blossom** - bloom: produce or yield flowers.

**Teaching Strategies:** Read Pumpkin Circle to your class and then have the students create the Pumpkin Life Cycle Chain to ascertain their knowledge of pumpkins.

**Review/Summary:** Use the student learning objectives to summarize the lesson. Have the students explain the content associated with the lesson. Student responses can be used in determining which objectives need to be reviewed or taught from a different angle. Use observations as the basis for reteaching areas where student mastery may need improvement.

**Application:** Classroom discussion of the objectives and student questions will assist in applying concepts.

**Evaluation:** Focus on the evaluation of student achievement on mastery of the objectives as stated in the lesson. A written test can also be used to assess the student achievement of the objectives.

# Science Questions

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**Arizona State Learning Standards:** This lesson is correlated to the following State Learning Standard.

1. **Inquiry Process:** establishes the basis for students' learning in science. Students use scientific processes, questioning, planning and conducting investigations, using appropriate tools and techniques to gather data, thinking critically and logically about relationships between evidence and explanations, and communicating results.

**Arizona State Objectives:** This lesson addresses the following objectives: (Strand, Concept, Performance objective)

<b>Kindergarten:</b>	1.1.1, 1.1.2, 1.1.3, 1.4.1
<b>First Grade:</b>	1.1.1, 1.1.2, 1.1.3, 1.4.1
<b>Second Grade:</b>	1.1.2, 1.3.2, 1.3.3
<b>Third Grade:</b>	1.3.3, 1.3.5

**Student Learning Objectives:** Instruction in this lesson should result in students achieving the following objectives:

1. Observe pumpkins and perform experiments to answer questions.

## Materials needed:

- ✓ Pumpkins of different sizes and colors
- ✓ Student Worksheet

## Terms:

- No terms were identified in this lesson.

**Teaching Strategies:** Have the students answer the student worksheet questions as they observe the different pumpkins.

**Review/Summary:** Use the student learning objectives to summarize the lesson. Have the students explain the content associated with the lesson. Student responses can be used in determining which objectives need to be reviewed or taught from a different angle. Use observations as the basis for reteaching areas where student mastery may need improvement.

**Application:** Classroom discussion of the objectives and student questions will assist in applying concepts.

**Evaluation:** Focus on the evaluation of student achievement on mastery of the objectives as stated in the lesson. A written test can also be used to assess the student achievement of the objectives.

# Sink or Float?

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**Arizona State Learning Standards:** This lesson is correlated to the following State Learning Standard.

1. **Inquiry Process:** establishes the basis for students' learning in science. Students use scientific processes, questioning, planning and conducting investigations, using appropriate tools and techniques to gather data, thinking critically and logically about relationships between evidence and explanations, and communicating results.

**Arizona State Objectives:** This lesson addresses the following objectives: (Strand, Concept, Performance objective)

<b>Kindergarten:</b>	1.1.1, 1.1.2, 1.1.3, 1.4.1
<b>First Grade:</b>	1.1.1, 1.1.2, 1.1.3, 1.4.1
<b>Second Grade:</b>	1.1.2, 1.3.2, 1.3.3
<b>Third Grade:</b>	1.1.1, 1.3.3, 1.3.5

**Student Learning Objectives:** Instruction in this lesson should result in students achieving the following objectives:

1. Observe pumpkins and perform experiments to answer questions.

## Materials needed:

- ✓ Pumpkins of different sizes and colors
- ✓ Student Worksheet

## Terms:

- No terms were identified in this lesson.

**Teaching Strategies:** Have your students predict whether pumpkins will sink or float. Does the size of the pumpkin matter? Have the students answer the student worksheet questions as they observe the different pumpkins.

**Review/Summary:** Use the student learning objectives to summarize the lesson. Have the students explain the content associated with the lesson. Student responses can be used in determining which objectives need to be reviewed or taught from a different angle. Use observations as the basis for reteaching areas where student mastery may need improvement.

**Application:** Classroom discussion of the objectives and student questions will assist in applying concepts.

**Evaluation:** Focus on the evaluation of student achievement on mastery of the objectives as stated in the lesson. A written test can also be used to assess the student achievement of the objectives.