



**Curriculum Map  
Grade 5 Science  
Saugus Public Schools  
Saugus, MA 01906**

\*Grade 4 and 5 Curriculum Maps are designed as 2 week Modules

**\*Module 1**

***Massachusetts Performance Standards***

**Physical Science1: Differentiate** between properties of objects (eg. Size, shape, weight) and properties of materials (e.g. Colors, textures, hardness)

**Technology Engineering 1.1: Identify** Materials used to accomplish a design task based on a specific property, e.g., strength, hardness and flexibility

**UNIT E: Properties of Matter and Energy**

Properties and Structure of Matter  
Physical Properties  
Chapter 12 Lesson 1 pages E2-E13

**Objectives (Students will...)**

- **Identify** and recognize the importance of mass, weight, density and volume
- **Compare** objects using various properties of matter.

**Essential Question**

What is difference between the mass and weight of an object?  
What is volume of an object?

**Teacher Resources**

- Macmillan McGraw-Hill Science Textbook Grade 5 (2005)
- Activity Resources pages 168-172
- Reading in Science Resources pages 271-276
- Reading Aid Transparency E1

**Media and Technology Resources**

- CD-ROM Science Newsroom

**Evaluation/Activities**

**Lecture/Demonstration:** Each concept/topic will be introduced by the teacher using any resources that are available.

**Class work:** To be done on each topic/concept as needed for understanding.

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**Lab Activity 1: Explore Activity Textbook pg E5**

**Using balance scales, find the mass of an object.**

**Using appropriate tools, find the volume of an object.**

**Lesson Completion Date:**

**Technology Used/ Date Used:**

**Completed By:**

**Comments:**

**\*Module 2**

***Performance Standards***

**Physical Science 2: Compare** and **contrast** solids, liquids and gases based on the basic properties of each of these states of matter.

**Physical Science 3: Describe** how water can be changed from one state to another by adding or taking away heat.

**UNIT E: Properties of Matter and Energy**

Properties and Structure of Matter  
Physical Properties  
Solids, Liquids, and Gases  
Chapter 12 Lesson 1 pages E10 & E11  
Chapter 12 Lesson 3 pages E34-E43

**Objectives (Students will...)**

- **Recognize** matter exists as a solid a liquid or a gas.

**Essential Question**

How are solids, liquids and gasses different?

**Teacher Resources**

- Macmillan McGraw-Hill Science Textbook Grade 5 (2005)
- Activity Resources pages178-182
- Reading in Science Resources pages 283-288
- Grade level Science Chilled to the Bone
- Reading Aid Transparency E3

**Media Resources**

**Evaluation/Activities**

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**Homework:** To be given daily on each introduced topic as determined by the teacher.  
**Review:** All weekly concepts.  
**Quiz:** Assessments given as warranted by the curriculum.

**Lesson Completion Date:**

**Technology Used/ Date Used:**

**Completed By:**

**Comments:**

**\*Module 3**

***Massachusetts Performance Standards***

**Physical Science 5:** Give examples of how energy can be transferred from one form to another.

**Technology Engineering 1.1:** Identify materials used to accomplish a design task based on a specific property, e.g., strength, hardness and flexibility.

**UNIT E: Properties of Matter and Energy**

Forms of Matter and Energy  
Matter and Energy  
Chapter 13-Lesson 7 pages E90-E99

**Objectives (Students will...)**

- **Recognize** that energy has different forms.

**Essential Question**

What kinds of energy are there?  
How can energy be transferred from a battery?  
What are three ways heat can move?

**Teacher Resources**

- Macmillan McGraw-Hill Science Textbook Grade 5 (2005)
- Activity Resources pages 201-205
- Reading in Science Resources pages 313-318
- Reading Aid Transparency E7
- Visual Aid Transparency 30

**Media and Technology Resources**

**Evaluation/Activities**

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**Lab Activity: page E91**

**Lesson Completion Date:**

**Technology Used/ Date Used:**

**Completed By:**

**Comments:**

**\*Module 4**

***Massachusetts Performance Standards***

**Earth Space Science 6: Explain** how air temperature, moisture, wind speed and direction and precipitation make up the weather in a particular place and time.

**Technology Engineering 2.2: Describe** different ways in which a problem can be represented, e.g., sketches, diagrams, graphic organizers, and lists.

**UNIT D: Astronomy, Weather and Climate**

Weather  
Atmosphere and Air Temperature  
Chapter 10 Lesson 3 pages D28-D35  
Chapter 10 Lesson 6 pages D52-D61

**Objectives (Students will...)**

- **Identify** conditions that make up the weather.
- **Identify** factors that make up temperature on earth.

**Essential Question**

What six conditions make up weather?  
What causes wind?

**Teacher Resources**

- Macmillan McGraw-Hill Science Textbook Grade 5 (2005)
- Activity Resources pages 130-134, 145-149
- Reading in Science Resources pages 215-220, 233-238
- Reading Aid Transparency D3 &D6

**Media and Technology Resources**

**Evaluation/Activities**

**Lecture/Demonstration:** Each concept/topic will be introduced by the teacher using any resources that are available.

**Class work:** To be done on each topic/concept as needed for understanding.

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**Activity: Exploring Main Idea (Teacher's Edition page D33)**

**Explore Activity: D53**

**Lesson Completion Date:**

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**Completed By:**

**Comments:**

## \*Module 5

### *Performance Standards*

**Earth Space Science 10: Describe** how water on earth cycles in different forms and in different locations, including underground and in the atmosphere.

**Physical Science 3: Describe** how water can be changed from one state to another by adding or taking away heat.

**Technology Engineering 1.2 Identify and explain** the appropriate materials and tools (e.g., hammer, screwdriver, pliers, tape measure, screws, nails, and other mechanical fasteners) to construct a given prototype safely.

**Technology Engineering 2.2 Describe** different ways in which a problem can be represented, e.g., sketches, diagrams, graphic organizers, and lists.

## **UNIT B: Living Things and Their Environments UNIT D: Astronomy, Weather and Climate**

Ecosystems  
Cycles of Life  
Air, Water, and Energy  
Earth's Fresh water  
Weather  
Water Vapor and Humidity  
Chapter 6 Lesson 4 (pgs.B49-B51)  
Chapter 8 Lesson 6 (pagesC74-C75)  
Chapter 10 Lesson 4 (pagesD36-D41)

### **Objectives (Students will...)**

- Be able to **diagram** the water cycle.
- **Understand** how water changes states as a result of heating and cooling.

### **Essential Question**

How does water change from a solid to a liquid and from a liquid to a gas?  
What are evaporation, condensation and precipitation?  
What causes evaporation, condensation and precipitation?

### **Teacher Resources**

- Macmillan McGraw-Hill Science Textbook Grade 5 (2005)
- Activity Resources pages 62-66, 135-139
- Reading in Science Resources pages 109-114, 221-226

### **Media Resources**

### **Evaluation/Activities**

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**Lab Activity: Explore Activity page D43**  
**Explore Activity page D37**  
**Explore Activity page B49**  
**Design and build a terrarium to represent the water cycle.**  
**Water Video**

### **Lesson Completion Date:**

### **Technology Used/ Date Used:**

### **Completed By:**

### **Comments:**

**\*Module 6**

***Performance Standards***

**Earth Space Science 7: Distinguish** among the various forms of precipitation (rain, snow, sleet and hail), making connections to the weather in a particular place and time.

**Technology Engineering 2.2: Describe** different ways in which a problem can be represented, e.g., sketches, diagrams, graphic organizers, and lists.

**UNIT D: Astronomy, Weather and Climate**

Weather  
Clouds and Precipitation  
Chapter 10 Lesson 5 pages D42-D49

**Objectives (Students will...)**

- **Identify** the four types of precipitation.
- **Identify** how temperature affects various forms of precipitation.

**Essential Question**

What is the difference between sleet and hail?  
What causes precipitation?

**Teacher Resources**

- Macmillan McGraw-Hill Science Textbook Grade 5 (2005)
- Activity Resources pages 140-144
- Reading in Science Resources pages 227-232
- Reading Aid Transparency D5
- Visual Aid Transparency 22,23

**Media Resources**

**Evaluation/Activities**

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**Review:** All weekly concepts.  
**Quiz:** Assessments given as warranted by the curriculum.  
  
**Explore Activity page D43**

**Lesson Completion Date:**

**Technology Used/ Date Used:**

**Completed By:**

**Comments:**

**\*Module 7**

***Massachusetts Performance Standards***

**Earth Space Science 8: Describe** how global patterns such as jet stream and water currents influence local weather in measurable terms such as temperature, wind direction and speed, and precipitation.

**Technology Engineering 2.2: Describe** different ways in which a problem can be represented, e.g., sketches, diagrams, graphic organizers, and lists.

**UNIT D: Astronomy, Weather and Climate**

Weather Patterns and Climate  
Air masses and Fronts  
Chapter 11 Lesson 7 pages D68-D73

**Objectives (Students will...)**

- **Explain** how air masses produce different kinds of weather.

**Essential Question**

How do cold fronts and warm fronts affect the weather?

**Teacher Resources**

- Macmillan McGraw-Hill Science Textbook Grade 5 (2005)
- Activity Resources pages 150-155
- Reading in Science Resources pages 245-250
- Reading Aid Transparency D7
- Visual Aid Transparency 24
- **Optional** Chapter 11 Lesson 8 Storms

**Media and Technology Resources**

**Evaluation/Activities**

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**Review:** All weekly concepts will be reviewed and connections to concepts should be made by the students.

**Quiz:** Formal assessments will be given as warranted by the curriculum.

**Lesson Completion Date:**

**Technology Used/ Date Used:**

**Completed By:**

**Comments:**

**\*Module 8**

***Performance Standards***

**Earth Space Science 9: Differentiate** between weather and climate.

**Earth Space Science 11: Give** examples of how cycling of water in and out of the atmosphere has an effect on climate.

**Technology Engineering 2.4: Compare** natural systems with mechanical systems that are designed to serve similar purposes, e.g., a bird's wings as Compared to an airplane's wings.

**UNIT D: Astronomy, Weather and Climate**

Weather Patterns and Climate  
Climate  
Chapter 11 Lesson 9 pages D82-D91

**Objectives (Students Will...)**

- **Identify** factors that make up and determine climate.

**Essential Question**

How is climate different from weather?  
What factors determine climate?

**Teacher Resources**

- Macmillan McGraw-Hill Science Textbook Grade 5 (2005)
- Activity Resources pages 162-166
- Reading in Science Resources pages 257-262
- Reading Aid Transparency D9

**Media Resources**

**Evaluation/Activities**

**Class work:** To be done on each topic/concept as needed for understanding.  
**Homework:** To be given daily on each introduced topic as determined by the teacher.  
**Review:** All weekly concepts.  
**Quiz:** Assessments given as warranted by the curriculum.

**Explore Activity page D83**

**Lesson Completion Date:**

**Technology Used/ Date Used:**

**Completed By:**

**Comments:**

**\*Module 9**

***Performance Standards***

**Earth Space Science 6: Explain** how air temperature, moisture, wind speed and direction and precipitation make up the weather in a particular place and time.

**Earth Space Science 11: Give** examples of how cycling of water in and out of the atmosphere has an effect on climate.

**UNIT D: Astronomy, Weather and Climate**

Weather Patterns and Climate  
Severe Storms  
Chapter 11 Lesson 8 pages D74-D81

**Objectives (Students will...)**

- **Identify** how wind and moisture affect weather patterns.

**Essential Question**

What is the difference between a tornado and a hurricane?

**Teacher Resources**

- Macmillan McGraw-Hill Science Textbook Grade 5 (2005)
- Activity Resources pages 156-161
- Reading in Science Resources pages 251-256
- Reading Aid Transparency D8
- Visual Aid Transparency 25 & 26

**Media and Technology Resources**

**Evaluation/Activities**

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**Class work:** To be done on each topic/concept as needed for understanding.

**Homework:** To be given daily on each introduced topic as determined by the teacher.

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**Quiz:** Formal assessments will be given as warranted by the curriculum.

**Lab Activity: page D77**

**Lesson Completion Date:**

**Technology Used/ Date Used:**

**Completed By:**

**Comments:**

**\*Module 10**

**Performance Standards**

**Life Science 11: Describe** how energy derived from the sun is used by plants to produce sugars (photosynthesis) and is transferred within a food chain from producers (plants) to consumers to decomposers.

**UNIT A: Characteristics of Living Things**  
**UNIT C: Earth and Its Resources**

Plant Structure and Function  
Roots, Stems and Leaves  
Air, Water ,and Energy  
Earth's Atmosphere  
Chapter 2 Lesson 3 pages A34-A37  
Chapter 8 Lesson 5 pages C62 &C63

**Objectives (Students Will...)**

- Understand the process of photosynthesis.
- Understand the importance of photosynthesis to all life on earth.

**Essential Question**

What do plants need to perform photosynthesis?  
What is produced by the plant as a result of photosynthesis?  
How does photosynthesis affect all life forms?

**Teacher Resources**

- Macmillan McGraw-Hill Science Textbook Grade 5 (2005)

**Media Resources**

**Evaluation/Activities**

Class work: To be done on each topic/concept as needed for understanding.  
Homework: To be given daily on each introduced topic as determined by the teacher.  
Review: All weekly concepts.  
Quiz: Assessments given as warranted by the curriculum.

**Lesson Completion Date:**

**Technology Used/ Date Used:**

**Completed By:**

**Comments:**

## \*Module 11

### Performance Standards

**Life Science 11: Describe** how energy derived from the sun is used by plants to produce sugars (photosynthesis) and is transferred within a food chain from producers (plants) to consumers to decomposers.

### UNIT B: Living Things and Their Environments

Interactions of Living Things  
Chapter 5 Lesson 2 pages B15-B31

#### Objectives (Students will...)

- **Know** the difference between a food chain and a food web.
- **Identify** the difference between producers, consumers and decomposers.

#### Essential Question

What makes up a food chain?  
Why are plants called producers?  
How is the energy from the sun transferred through a food chain?

#### Teacher Resources

- Macmillan McGraw-Hill Science Textbook Grade 5 (2005)
- Activity Resources pages 51-56
- Reading in Science Resources pages 91-96
- Reading Aid Transparency B2
- Visual Aid Transparency 8

#### Media and Technology Resources

#### Evaluation/Activities

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**Construct a food web.**

**Decomposer pots.**

**Transpiration Bottle**

**Lesson Completion Date:**

**Technology Used/ Date Used:**

**Completed By:**

**Comments:**

## \*Module 12

### *Performance Standards*

**Life Science 10:** Give examples of how organisms can cause changes in their environment to ensure survival. Explain how some of these changes may affect the ecosystem.

**Technology Engineering 2.1:** Identify a problem that reflects the need for shelter, storage or convenience.

**Technology Engineering 2.2:** Describe different ways in which a problem can be represented, e.g., sketches, diagrams, graphic organizers, and lists.

## UNIT B: Living Things and Their Environments

Interactions of Living Things  
How Populations Survive  
Ecosystems  
How Ecosystems Change  
Chapter 5 Lesson 3 pages B32-B41  
Chapter 6 Lesson 6 pages B78-B91

### Objectives

- **Recognize** how environmental changes affect organisms and ecosystems.

### Essential Question

What are some environmental changes that affect ecosystems?  
How are organisms affected by changes in the environment?  
How do humans affect the ecosystem?

### Teacher Resources

- Macmillan McGraw-Hill Science Textbook Grade 5 (2005)
- Activity Resources pages 57-61
- Reading in Science Resources pages 97-102
- Reading Aid Transparency B3
- Grade level science books “The Eagles are Back”.

### Media Resources

### Evaluation/Activities

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**Homework:** To be given daily on each introduced topic as determined by the teacher.  
**Review:** All weekly concepts.  
**Quiz:** Assessments given as warranted by the curriculum.

**Quick Lab page B35**  
**Explore Activity page B33**

**Lesson Completion Date:**

**Technology Used/ Date Used:**

**Completed By:**

**Comments:**

## \*Module 13

### *Performance Standards*

**Earth Space Science 13: Recognize** that earth is part of a system called the solar system that includes the sun (a star), planets and many moons. The earth is the third planet from the sun in our solar system.

**Earth Space Science 14: Recognize** that the earth revolves around (orbits) the sun in a year's time and that the earth rotates on its axis once approximately every 24 hours. Make connections between the rotation of the earth and day/night, and the apparent movement of the sun, moon, and stars across the sky.

### **UNIT D: Astronomy, Weather and Climate**

Astronomy  
Earth and Its Neighbors  
Chapter 9 Lesson 1 pagesD4-D9

#### **Objectives (Students will...)**

- **Know** the difference between rotation and revolution.
- **Know** that revolution causes day and night.
- **Identify** key objects in the solar system, (ex. sun, moon, planet, and stars) and their characteristics.

#### **Essential Question**

What is rotation?  
What is revolution?  
What affect does the sun have on earth?

#### **Teacher Resources**

- Macmillan McGraw-Hill Science Textbook Grade 5 (2005) Edition
- Activity Resources pages 120-124
- Reading in Science Resources pages 197-202
- Reading Aid Transparency D1
- Visual Aid Transparency 17

#### **Media and Technology Resources**

#### **Evaluation/Activities**

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**Explore Activity: D5**

**Explore Activity D15**

**Lesson Completion Date:**

**Technology Used/ Date Used:**

**Completed By:**

**Comments:**

## \*Module 14

### *Performance Standards*

**Earth Space Science 13: Recognize** that earth is part of a system called the solar system that includes the sun (a star), planets and many moons. The earth is the third planet from the sun in our solar system.

**Earth Space Science 15: Describe** the changes in the observable shape of the moon over the course of a month.

**Technology Engineering 2.2: Describe** different ways in which a problem can be represented, e.g., sketches, diagrams, graphic organizers, and lists.

**Technology Engineering 2.3: Identify** relevant design features for building a prototype of a solution to a given problem.

### **UNIT D: Astronomy, Weather and Climate**

Astronomy  
The Solar System  
Chapter 9 Lesson 2 pages D14-D21

#### **Objectives**

- **Identify** and **describe** the phases of the moon.
- **Recognize** earth's position in the solar system.

#### **Essential Question**

What are names of the moon phases?  
How long does it take the moon to complete a cycle?  
How does earth compare with the other planets?

#### **Teacher Resources**

- Macmillan McGraw-Hill Science Textbook Grade 5 (2005)
- Activity Resources pages 120-124, 125-129
- Reading Aid Transparency D1 & D2
- Visual Aid Transparency 17

#### **Media Resources**

#### **Evaluation/Activities**

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**Quiz:** Assessments given as warranted by the curriculum.

**Explore Activity page D15**

**Lesson Completion Date:**

**Technology Used/ Date Used:**

**Completed By:**

**Comments:**

**\*Module 15**

***Performance Standards***

**Earth Space Science 1: Give** a simple explanation of what a mineral is and some examples, e.g., quartz, mica.

**Earth Space Science 2: Identify** the physical properties of minerals (hardness, color, luster, cleavage, and streak) and explain how minerals can be tested for these different physical properties,

**Earth Space Science 3: Identify** 3 categories of rocks (metamorphic, igneous, and sedimentary) based on how they are formed, and explain the natural and physical processes that create these rocks.

**UNIT C: Earth and Its Resources**

**UNIT: MCAS Review**

Landforms, Rocks, and Minerals  
Minerals of the Earth's Crust  
Landforms  
Chapter 7 Lesson 3 pages C30-39  
Chapter 7 Lesson 4 pages C40-C49

**Objectives (Students will...)**

- **Identify** the physical properties of minerals.
- **Identify** the 3 categories of rocks.
- **Give** a simple explanation of what a mineral is.

**Essential Question**

What is a metamorphic, sedimentary and igneous rock?  
What are the 5 physical properties of a mineral?

**Teacher Resources**

- Macmillan McGraw-Hill Science Textbook Grade 5 (2005)
- Reading Aid Transparency C3 & C4
- Visual Aid Transparency 18
- National Geographic Student Magazine
- Activity Resources pages 89-94, 95-99
- Reading in the Science Resources 147-152, 153-158

**Media and Technology Resources**

**Evaluation/Activities**

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**Lesson Completion Date:**

**Technology Used/ Date Used:**

**Completed By:**

**Comments:**

## \*Module 16

### Performance Standards

**Physical Science 6: Recognize** that electricity and circuits requires a complete loop through which electrical current can pass...

**Physical Science 8: Explain** how electromagnets can be made.

**Physical Science 9: Recognize** that magnets have poles that repel and attract each other.

**Physical Science 10: Identify and classify** objects and materials that object will attract.

**Technology Engineering 1.1: Identify** Materials used to accomplish a design task based on a specific property, e.g., strength, hardness and flexibility

**Technology Engineering 1.2 Identify and explain** the appropriate materials and tools (e.g., hammer, screwdriver, pliers, tape measure, screws, nails, and other mechanical fasteners) to construct a given prototype safely.

**Technology Engineering 1.3: Identify and explain** the difference between simple and complex machine e.g., hand can-opener that includes multiple gears, wheel, wedge, gear and lever.

### UNIT E: Properties of Matter and Energy UNIT: MCAS Review

Properties and Structure of Matter  
Physical Properties  
Forms of Matter and Energy  
Matter and Energy  
Newton's Law's of Motion  
Chapter 12 Lesson 1 page E15  
Chapter 13 Lesson 7 page E92 & E93  
Chapter 14 Lesson 2 pages F26-F31

#### Objectives (Students Will...)

- **Recognize** that magnets have north and south poles.
- **Identify** objects that a magnet will and will not attract.
- **Recognize** a completed electrical circuit.

#### Essential Question

Why do magnets sometimes repel instead of attract to each other?  
What material do you need to build an electrical circuit?

#### Teacher Resources

- Supplemental materials provided by teacher.
- Activity Resources pages 211-215
- Reading in the Science Resources pages 333-338
- [www.edheads.com](http://www.edheads.com)

#### Media Resources

#### Evaluation/Activities

Class work: To be done on each topic/concept as needed for understanding.  
Homework: To be given daily on each introduced topic as determined by the teacher.  
Review: All weekly concepts.  
Quiz: Assessments given as warranted by the curriculum.

**MCAS SCIENCE EXAM**

**Lesson Completion Date:**

**Technology Used/ Date Used:**

**Completed By:**

**Comments:**

**\*Post MCAS Module**

**Performance Standards**

**Technology Engineering 1.1: Identify** Materials used to accomplish a design task based on a specific property, e.g., strength, hardness and flexibility

**Technology Engineering 1.2 Identify and explain** the appropriate materials and tools (e.g., hammer, screwdriver, pliers, tape measure, screws, nails, and other mechanical fasteners) to construct a given prototype safely.

**Technology Engineering 2.1: Identify** a problem that reflects the need for shelter, storage or convenience.

**Technology Engineering 2.2: Describe** different ways in which a problem can be represented, e.g., sketches, diagrams, graphic organizers, and lists.

**Technology Engineering 2.3: Identify** relevant design features for building a prototype of a solution to a given problem.

**Technology Engineering 2.4: Compare** natural systems with mechanical systems that are designed to serve similar purposes, e.g., a bird's wings as compared to an airplane's wings.

**UNIT: Technology & Engineering and Design**

**District Created Resources**

**Objectives (Students will...)**

- Given a set of criteria students will **solve** a problem and/or create a design.
- **Estimate** and **measure** distances.

**Essential Question**

Why is building a prototype necessary when solving a problem or creating a design?

**Suggested Activities**

- Puff Mobiles
- Egg Drop

**Media and Technology Resources**

**Evaluation/Activities**

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**Lesson Completion Date:**

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**Completed By:**

**Comments:**

