

## Report Profile Report

### Quail Valley Academy: Fourth Grade Mathematics

#### Estimation

##### **Estimate things such as distance, time, height, etc.**

- Explores the idea of work as a force being applied for a certain distance.
- Uses scale to calculate actual distances on maps and plans.
- Recalls how to use scale to calculate actual distances on maps and plans.
- Explores measurement of length and the importance of standard units.
- Interprets actual length from maps and plans.
- Compares the weight of objects using a balance scale.
- Uses a spring balance to measure the weight of objects.
- Recognizes units of length.
- Identifies methods of measuring weight.
- Recalls units of length.
- Recalls methods of measuring weight.
- Observes the length, area and volume relationships between different size cubes.
- Identifies how area and volume changes when the sides of a cube are doubled in length.
- Calculates the length of objects.
- Identifies appropriate units to measure length.

#### Whole Number Operations

##### **Choose the mathematical operation needed to correctly solve different types of problems.**

- Demonstrates an ability to perform simple addition.
- Demonstrates an ability to perform simple multiplication.
- Demonstrates an ability to perform simple addition and multiplication.
- Demonstrates an ability to perform simple addition and multiplication.
- Calculates the number of parts needed to build bridges.

##### **Properly write a math sentence to solve a problem.**

- Calculates the number of parts needed to build bridges.
- Demonstrates an ability to perform simple addition.
- Demonstrates an ability to perform simple multiplication.
- Demonstrates an ability to perform simple addition and multiplication.
- Demonstrates an ability to perform simple addition and multiplication.

##### **Appropriately use math vocabulary in speaking and writing.**

- Calculates the number of parts needed to build bridges.
- Demonstrates an ability to perform simple addition.
- Demonstrates an ability to perform simple multiplication.
- Demonstrates an ability to perform simple addition and multiplication.
- Demonstrates an ability to perform simple addition and multiplication.

#### Number Sense and Numeration

##### **Properly use math in real life situations.**

- Calculates the number of parts needed to build bridges.
- Demonstrates an ability to perform simple addition.
- Demonstrates an ability to perform simple multiplication.
- Demonstrates an ability to perform simple addition and multiplication.
- Demonstrates an ability to perform simple addition and multiplication.

**Demonstrate counting, grouping and place value concepts orally, graphically and with manipulatives.**

- Calculates the number of parts needed to build bridges.
- Calculates area by counting square units and using formula.
- Calculates volume by counting cubic units and using formula.
- Calculates area of shapes by counting squares.
- Calculates volume of objects by counting cubes and using formula.

**Statistics and Probability**

**Collect, organize and understand data**

- Recognizes systems used to communicate data.

**Create and solve problems where data collecting is needed.**

- Recognizes systems used to communicate data.

**Geometry and Spatial Sense**

**Create and identify different types of polygons.**

- Produces a report on the life and habitats found within a surveying square.
- Recognizes features and properties of triangles.
- Calculates area by counting square units and using formula.
- Identifies properties and types of triangles.
- Recalls the properties and types of triangles.
- Recognizes the properties of triangles.
- Calculates the angles of different types of triangle.
- Calculates area of shapes by counting squares.

**Recognize known shapes that have been flipped or turned.**

- Produces a report on the life and habitats found within a surveying square.
- Measures angles of rotation and recognizes acute and obtuse angles relative to the right angle.
- Calculates area by counting square units and using formula.
- Recognizes units and classification of angles.
- Recalls the measurement and types of angles.
- Observes the length, area and volume relationships between different size cubes.
- Identifies how area and volume changes when the sides of a cube are doubled in length.
- Calculates the angles of different types of triangle.
- Calculates area of shapes by counting squares.
- Calculates the area of shapes using formula.
- Calculates volume of objects by counting cubes and using formula.

**Learn new vocabulary words relating to geometry.**

- Produces a report on the life and habitats found within a surveying square.
- Measures angles of rotation and recognizes acute and obtuse angles relative to the right angle.
- Calculates area by counting square units and using formula.
- Recognizes units and classification of angles.
- Recalls the measurement and types of angles.
- Observes the length, area and volume relationships between different size cubes.
- Identifies how area and volume changes when the sides of a cube are doubled in length.
- Calculates the angles of different types of triangle.
- Calculates area of shapes by counting squares.
- Calculates the area of shapes using formula.
- Calculates volume of objects by counting cubes and using formula.

## **Fractions and Decimals**

### **Understand relevant mathematical properties. Add and subtract fractions with the same denominator.**

Demonstrates an ability to perform simple addition.

Demonstrates an ability to perform simple addition and multiplication.

Demonstrates an ability to perform simple addition and multiplication.

## **Measurement**

### **Measure accurately to the nearest 1/8" or millimeter.**

Works with units of measure.

Explores measurement of length and the importance of standard units.

Identifies appropriate units to measure length.

### **Estimate distance and volume and convert from one measurement to another (yards to feet, liters to millimeters).**

Works with units of measure.

Explores the idea of work as a force being applied for a certain distance.

Explores measurement of length and the importance of standard units.

Calculates volume by counting cubic units and using formula.

Uses scale to calculate actual distances on maps and plans.

Recognizes units of volume and calculates volume using formula.

Recalls how to use scale to calculate actual distances on maps and plans.

Recalls units of volume and calculates volume using formula.

Observes the length, area and volume relationships between different size cubes.

Identifies how area and volume changes when the sides of a cube are doubled in length.

Identifies appropriate units to measure length.

Calculates volume of objects by counting cubes and using formula.

Identifies units in which volume is measured.

### **Measure area, perimeter, temperature, and weight using the correct units.**

Works with units of measure.

Explores measurement of length and the importance of standard units.

Calculates area by counting square units and using formula.

Compares the weight of objects using a balance scale.

Uses a spring balance to measure the weight of objects.

Recognizes units of area and calculates area using formula.

Identifies methods of measuring weight.

Recalls units of area and calculates area using formula.

Recalls methods of measuring weight.

Observes the length, area and volume relationships between different size cubes.

Identifies how area and volume changes when the sides of a cube are doubled in length.

Identifies appropriate units to measure length.

Calculates area of shapes by counting squares.

Calculates the area of shapes using formula.

### **Use math tools and vocabulary to show understanding.**

Works with units of measure.

Investigates forces and how they are measured.

Investigates simple forces and how they are measured.

Identifies forces and how they are measured.

Identifies forces and how they are measured.

Explores measurement of length and the importance of standard units.  
Measures angles of rotation and recognizes acute and obtuse angles relative to the right angle.  
Uses a spring balance to measure the weight of objects.  
Identifies methods of measuring weight.  
Recalls the measurement and types of angles.  
Recalls methods of measuring weight.  
Identifies appropriate units to measure length.  
Identifies units in which volume is measured.

### **Whole Number Computation**

#### **Add, subtract, multiply and divide with larger numbers.**

Demonstrates an ability to perform simple addition.  
Demonstrates an ability to perform simple multiplication.  
Demonstrates an ability to perform simple addition and multiplication.  
Demonstrates an ability to perform simple addition and multiplication.

#### **Master multiplication facts.**

Demonstrates an ability to perform simple multiplication.  
Demonstrates an ability to perform simple addition and multiplication.  
Demonstrates an ability to perform simple addition and multiplication.

### **Patterns and Relationships**

#### **Use patterns and relationships as tools to solve problems.**

Discovers how the parts of a model vehicle are related to the parts of a real car.  
Measures angles of rotation and recognizes acute and obtuse angles relative to the right angle.  
Observes the length, area and volume relationships between different size cubes.  
Identifies how area and volume changes when the sides of a cube are doubled in length.  
Recognizes that climate can influence the design of houses.  
Identifies the parts of a plant and their function.  
Matches living things, environments and habitats.  
Explores measurement of length and the importance of standard units.

#### **Move from learning about patterns to learning by using patterns.**

Discovers how the parts of a model vehicle are related to the parts of a real car.  
Measures angles of rotation and recognizes acute and obtuse angles relative to the right angle.  
Observes the length, area and volume relationships between different size cubes.  
Identifies how area and volume changes when the sides of a cube are doubled in length.

#### **Speak and write about different patterns.**

Discovers how the parts of a model vehicle are related to the parts of a real car.  
Measures angles of rotation and recognizes acute and obtuse angles relative to the right angle.  
Observes the length, area and volume relationships between different size cubes.  
Identifies how area and volume changes when the sides of a cube are doubled in length.

## **Quail Valley Academy: Fourth Grade Science**

### **The Scientific Method**

#### **Design and conduct a simple experiment.**

- Explores how friction can be minimized using rollers and wheels.
- Explores the use of gears on vehicles.
- Explores powering vehicles on water.
- Explores the forces that can be used to overcome gravity.
- Explores moving vehicles on water.
- Explores how friction can be minimized using rollers and wheels.
- Designs and builds a vehicle consisting of a tractor unit pulling a loaded trailer.
- Designs and builds a working model of a freight terminal.
- Designs and builds an exhibition stand to meet a design brief.
- Explores the idea of work as a force being applied for a certain distance.
- Explores applications of the inclined plane.
- Explores the parts of an automobile and their function.
- Explores the effects of pollution on living things.
- Explores the early development of writing.
- Explores the basic principles of machines.

#### **Use time and order to record data.**

- Recognizes systems used to communicate data.
- Recognizes systems used to communicate data.

#### **Communicate methods and procedures orally and in writing.**

- Demonstrates an ability to interpret written text.
- Demonstrates an ability to interpret written text.
- Describes methods used to promote plant growth.
- Identifies methods and machines used in the farming cycle.
- Describes methods used to promote plant growth.
- Demonstrates an ability to interpret written text.
- Identifies methods and machines used in the farming cycle.
- Describes methods used to promote plant growth.
- Compares the written word to other simple forms of communication.
- Investigates visual communication systems.
- Interprets messages written in visual codes.
- Explores basic principles of radio wave communications using walkie-talkies.
- Investigates the basic principles of optical fiber communications.
- Investigates the stages of the communications process.
- Investigates methods of extraterrestrial communication.
- Designs a message to be communicated to an extraterrestrial lifeform.
- Compares writing with other basic forms of communication.
- Recognizes the principles of simple visual communication systems.
- Recognizes features of radio communication systems.
- Recognizes systems used to communicate data.
- Recognizes the stages of the communication process.
- Identifies methods of extraterrestrial communication.
- Demonstrates an ability to interpret written text.
- Compares writing with other basic forms of communication.
- Recognizes the basic principles of visual communication systems.

Recognizes features of radio communication systems.  
Recognizes systems used to communicate data.  
Recognizes the stages of the communications process.  
Identifies methods of extraterrestrial communication.  
Demonstrates an ability to interpret written text.  
Demonstrates an ability to interpret written text.  
Explores the early development of writing.  
Investigates the development of electronic communication systems.

**Use a variety of sources to obtain information.**

Demonstrates an ability to extract information from tables and charts.  
Discovers how the parts of a model vehicle are related to the parts of a real car.  
Discovers the parts of a real automobile and the size of the motive forces involved.  
Investigates the forces involved in moving a load over land.  
Investigates the forces acting on moving objects.  
Investigates buoyancy.  
Investigates frictional forces on water.  
Investigates aerodynamic lift.  
Investigates the effect of air resistance.  
Investigates the effect of forces in flight.  
Investigates the forces acting on moving objects.  
Investigates forces and how they are measured.  
Investigates the properties of frameworks.  
Investigates the factors which determine how beams bend.  
Investigates methods of strengthening bridges using pillars and a superstructure.  
Investigate how sound is produced and travels as a vibration.  
Investigates how the pitch of sounds can be changed.  
Investigates visual communication systems.  
Investigates applications of radio wave based communications.  
Investigates the basic principles of optical fiber communications.  
Investigates how pictures are sent back to Earth from space probes.  
Investigates the stages of the communications process.  
Investigates methods of extraterrestrial communication.  
Investigates simple forces and how they are measured.  
Investigates machines which use turning forces.  
Investigates the engines and motors used to power modern machines.  
Investigates the basic principle of the inclined plane.  
Investigates performance of multiple gear systems.  
Investigates the purpose of the different types of modern ship.  
Investigates the classification of plants and animals.  
Investigates how musical instruments produce sound.  
Investigates the development of electronic communication systems.  
Investigates the forces acting on objects.

**Earth and the Other Planets; the Solar System**

**Understand how gravity and sunlight affect the planets.**

Explores the forces that can be used to overcome gravity.  
Explores the forces that can be used to overcome gravity.

**Understand how the interaction of the hydrosphere, lithosphere, and atmosphere support the biosphere.**

- Investigates frictional forces on water.
- Explores powering vehicles on water.
- Compares the frictional force on land to the frictional force on water.
- Investigates the effect of air resistance.
- Explores moving vehicles on water.
- Investigates the effect of forces in flight.
- Recalls exploring moving vehicles on water.
- Recalls the effect of forces in flight.
- Matches living things, environments and habitats.

**Water**

**Examine the hydrosphere (water system, surface, and air).**

- Investigates frictional forces on water.
- Investigates buoyancy.
- Explores powering vehicles on water.
- Compares the frictional force on land to the frictional force on water.
- Investigates the effect of air resistance.
- Explores moving vehicles on water.
- Recalls exploring moving vehicles on water.
- Describes parts of the water cycle.

**Understand the properties of water.**

- Investigates frictional forces on water.
- Explores powering vehicles on water.
- Compares the frictional force on land to the frictional force on water.
- Explores moving vehicles on water.
- Recalls exploring moving vehicles on water.
- Describes parts of the water cycle.
- Matches living things, environments and habitats.

**Understand the need for water by all living things.**

- Investigates frictional forces on water.
- Explores powering vehicles on water.
- Compares the frictional force on land to the frictional force on water.
- Explores moving vehicles on water.
- Recalls exploring moving vehicles on water.
- Describes parts of the water cycle.
- Matches living things, environments and habitats.
- Explores the effects of pollution on living things.

**Volcanoes and Earthquakes**

**Investigate the lithosphere (solid crust of the earth) by exploring volcanoes, earthquakes and mountains, building with emphasis on how each affects life.**

- Identifies stages in the life cycle of a plant.
- Matches living things, environments and habitats.
- Produces a report on the life and habitats found within a surveying square.
- Investigates how pictures are sent back to Earth from space probes.
- Explores the effects of pollution on living things.

## **Flying**

**Explore the atmosphere, air pressure, and flight including adaptations of birds for flight and ways people have learned to fly.**

- Investigates aerodynamic lift.
- Investigates the effect of air resistance.
- Classifies the control surfaces of an airplane and their purpose.
- Investigates the effect of forces in flight.
- Recalls the effect of forces in flight.
- Recognizes the control surfaces of an airplane.
- Identifies the purpose of control surfaces on an airplane.

## **Weather**

**Understand interactions of the hydrosphere, lithosphere and atmosphere.**

- Investigates frictional forces on water.
- Compares the frictional force on land to the frictional force on water.
- Selects events in the farming cycle.
- Describes parts of the water cycle.

**Understand relationships of earth position in space to weather and climate.**

- Recognizes that climate can influence the design of houses.

## **Rain Forests**

**Understand how changes in one part of earth affect the larger system.**

- Selects events in the farming cycle.
- Identifies stages in the life cycle of a plant.
- Identifies that living things can be classified into kingdoms.
- Classifies living things by what they eat using a key.
- Describes parts of the water cycle.
- Matches living things, environments and habitats.
- Identifies methods and machines used in the farming cycle.
- Identifies that living things can be classified into kingdoms.
- Describes stages involved in the germination of seeds.
- Identifies the parts of a plant and their function.
- Identifies processes of photosynthesis in plants.
- Identifies that living things can be classified into kingdoms.
- Describes methods used to promote plant growth.
- Identifies environments and habitats.
- Describes food chains and natural selection.
- Produces a report on the life and habitats found within a surveying square.
- Explores the effects of pollution on living things.

## Quail Valley Academy: Fifth Grade Mathematics

### Geometry

#### Use geometry to describe the real world.

- Works with units of measure.
- Investigates forces and how they are measured.
- Produces a report on the life and habitats found within a surveying square.
- Investigates simple forces and how they are measured.
- Investigates the basic principle of the inclined plane.
- Explores applications of the inclined plane.
- Identifies forces and how they are measured.
- Recalls the basic principles and application of the inclined plane.
- Explores measurement of length and the importance of standard units.
- Measures angles of rotation and recognizes acute and obtuse angles relative to the right angle.
- Recognizes features and properties of triangles.
- Calculates area by counting square units and using formula.
- Calculates volume by counting cubic units and using formula.
- Uses a spring balance to measure the weight of objects.
- Recognizes units and classification of angles.
- Recognizes units of length.
- Identifies properties and types of triangles.
- Uses scale to calculate actual distances on maps and plans.
- Recognizes units of area and calculates area using formula.
- Recognizes units of volume and calculates volume using formula.
- Identifies methods of measuring weight.
- Recalls units of length.
- Recalls the measurement and types of angles.
- Recalls the properties and types of triangles.
- Recalls how to use scale to calculate actual distances on maps and plans.
- Recalls units of area and calculates area using formula.
- Recalls units of volume and calculates volume using formula.
- Recalls methods of measuring weight.
- Observes the length, area and volume relationships between different size cubes.
- Identifies how area and volume changes when the sides of a cube are doubled in length.
- Calculates the length of objects.
- Identifies appropriate units to measure length.
- Recognizes the properties of triangles.
- Calculates the angles of different types of triangle.
- Calculates area of shapes by counting squares.
- Calculates the area of shapes using formula.
- Calculates volume of objects by counting cubes and using formula.
- Identifies units in which volume is measured.

#### Use geometry symbols for terms like line, ray, angle, etc.

- Produces a report on the life and habitats found within a surveying square.
- Investigates the basic principle of the inclined plane.
- Explores applications of the inclined plane.
- Recognizes the basic principles and application of the inclined plane.
- Recalls the basic principles and application of the inclined plane.

Measures angles of rotation and recognizes acute and obtuse angles relative to the right angle.  
Calculates area by counting square units and using formula.  
Recognizes units and classification of angles.  
Recalls the measurement and types of angles.  
Recognizes the properties of triangles.  
Calculates the angles of different types of triangle.  
Calculates area of shapes by counting squares.

**Determine the measure of the third angle in a triangle when given the first two.**

Recognizes features and properties of triangles.  
Identifies properties and types of triangles.  
Recalls the properties and types of triangles.  
Recognizes the properties of triangles.  
Calculates the angles of different types of triangle.

**Use geometry to solve problems.**

Works with units of measure.  
Investigates forces and how they are measured.  
Investigates simple forces and how they are measured.  
Identifies forces and how they are measured.  
Identifies forces and how they are measured.  
Explores measurement of length and the importance of standard units.  
Interprets actual length from maps and plans.  
Calculates area by counting square units and using formula.  
Calculates volume by counting cubic units and using formula.  
Compares the weight of objects using a balance scale.  
Uses a spring balance to measure the weight of objects.  
Recognizes units of length.  
Recognizes units and classification of angles.  
Recognizes units of area and calculates area using formula.  
Recognizes units of volume and calculates volume using formula.  
Identifies methods of measuring weight.  
Recalls units of length.  
Recalls the measurement and types of angles.  
Recalls units of area and calculates area using formula.  
Recalls units of volume and calculates volume using formula.  
Recalls methods of measuring weight.  
Observes the length, area and volume relationships between different size cubes.  
Identifies how area and volume changes when the sides of a cube are doubled in length.  
Calculates the length of objects.  
Identifies appropriate units to measure length.  
Calculates volume of objects by counting cubes and using formula.  
Identifies units in which volume is measured.

**Statistics and Probability**

**Collect, organize and describe data.**

Recognizes systems used to communicate data.  
Recognizes systems used to communicate data.

**Predict, perform and record results for probability experiments.**

Demonstrates an ability to perform simple addition.

Demonstrates an ability to perform simple multiplication.  
Investigates performance of multiple gear systems.  
Demonstrates an ability to perform simple addition and multiplication.  
Demonstrates an ability to perform simple addition and multiplication.

## **Algebra**

### **Use math rules to simplify problems.**

Demonstrates an ability to perform simple addition.  
Demonstrates an ability to perform simple multiplication.  
Demonstrates an ability to perform simple addition and multiplication.  
Demonstrates an ability to perform simple addition and multiplication.

### **Locate ordered pairs on a grid.**

Demonstrates an ability to extract information from tables and charts.

## **Measurement**

### **Choose appropriate units of measure for different types of problems.**

Works with units of measure.  
Investigates forces and how they are measured.  
Investigates simple forces and how they are measured.  
Identifies forces and how they are measured.  
Identifies forces and how they are measured.  
Explores measurement of length and the importance of standard units.  
Interprets actual length from maps and plans.  
Calculates area by counting square units and using formula.  
Recognizes units of length.  
Recognizes units and classification of angles.  
Uses a spring balance to measure the weight of objects.  
Calculates volume by counting cubic units and using formula.  
Recognizes units of area and calculates area using formula.  
Recognizes units of volume and calculates volume using formula.  
Recalls units of length.  
Recalls the measurement and types of angles.  
Recalls units of area and calculates area using formula.  
Recalls units of volume and calculates volume using formula.  
Recalls methods of measuring weight.  
Observes the length, area and volume relationships between different size cubes.  
Identifies how area and volume changes when the sides of a cube are doubled in length.  
Calculates the length of objects.  
Identifies appropriate units to measure length.  
Identifies units in which volume is measured.  
Calculates volume of objects by counting cubes and using formula.

### **Calculate elapsed time, perimeter, circumference and area using formulas when necessary.**

Calculates area by counting square units and using formula.  
Calculates volume by counting cubic units and using formula.  
Recognizes units of area and calculates area using formula.  
Recognizes units of volume and calculates volume using formula.  
Recalls units of area and calculates area using formula.  
Recalls units of volume and calculates volume using formula.  
Observes the length, area and volume relationships between different size cubes.

Identifies how area and volume changes when the sides of a cube are doubled in length.  
Calculates area of shapes by counting squares.  
Calculates the area of shapes using formula.  
Calculates volume of objects by counting cubes and using formula.

**Convert units of measure (miles to inches, meters to kilometers).**

Works with units of measure.  
Investigates forces and how they are measured.  
Investigates simple forces and how they are measured.  
Identifies forces and how they are measured.  
Identifies forces and how they are measured.  
Explores measurement of length and the importance of standard units.  
Calculates area by counting square units and using formula.  
Calculates volume by counting cubic units and using formula.  
Uses a spring balance to measure the weight of objects.  
Recognizes units of length.  
Recognizes units and classification of angles.  
Recognizes units of area and calculates area using formula.  
Recognizes units of volume and calculates volume using formula.  
Recalls units of length.  
Recalls the measurement and types of angles.  
Recalls units of area and calculates area using formula.  
Recalls units of volume and calculates volume using formula.  
Identifies appropriate units to measure length.  
Identifies units in which volume is measured.

**Using a protractor, measure and create different types of angles.**

Measures angles of rotation and recognizes acute and obtuse angles relative to the right angle.  
Recognizes features and properties of triangles.  
Recognizes units and classification of angles.  
Identifies properties and types of triangles.  
Recalls the measurement and types of angles.  
Recalls the properties and types of triangles.  
Recognizes the properties of triangles.  
Calculates the angles of different types of triangle.

**Patterns and Functions**

**Solve problems using patterns and functions.**

Identifies the parts of a plant and their function.  
Identifies the parts of a plant and their function.  
Identifies the parts of a plant and their function.  
Identifies the basic parts and function of a lever.  
Explores the parts of an automobile and their function.  
Explores the parts of a space shuttle and their function.  
Identifies basic parts of a suspension bridge and their function.

**Identify and graph points.**

Demonstrates an ability to extract information from tables and charts.

**Number Systems and Number Theory**

**Determine if an answer is reasonable.**

Calculates the number of parts needed to build bridges.

**Identify and/or list prime and composite numbers.**

Calculates the number of parts needed to build bridges.

**Number and Number Relationships**

**Classify and sort objects by their attributes.**

Investigates the forces acting on moving objects.

Classifies the control surfaces of an airplane and their purpose.

Classifies the parts of the space shuttle and their purposes.

Classifies the parts of the space shuttle and their purposes.

Investigates the forces acting on moving objects.

Recalls the forces acting on moving objects.

Identifies that living things can be classified into kingdoms.

Classifies living things by what they eat using a key.

Identifies that living things can be classified into kingdoms.

Identifies that living things can be classified into kingdoms.

Compares the weight of objects using a balance scale.

Uses a spring balance to measure the weight of objects.

Recognizes units and classification of angles.

Investigates the classification of plants and animals.

Investigates the forces acting on objects.

Calculates the length of objects.

Calculates volume of objects by counting cubes and using formula.

## **Quail Valley Academy: Fifth Grade Science**

### **The Scientific Method**

#### **Use timelines; extend use of standard measurement.**

- Works with units of measure.
- Investigates forces and how they are measured.
- Investigates simple forces and how they are measured.
- Identifies forces and how they are measured.
- Identifies forces and how they are measured.
- Explores measurement of length and the importance of standard units.
- Uses a spring balance to measure the weight of objects.
- Identifies methods of measuring weight.
- Recalls the measurement and types of angles.
- Recalls methods of measuring weight.
- Identifies appropriate units to measure length.
- Identifies units in which volume is measured.

#### **Summarize research information with assistance.**

- Demonstrates an ability to extract information from tables and charts.

### **The Structure of Matter**

#### **Examine scale and structure of matter and cell's function (modeling systems and interactions).**

- Identifies the parts of a plant and their function.
- Identifies stages in the life cycle of a plant.
- Identifies the parts of a plant and their function.
- Identifies the scale factor in diagrams.

### **The Study of Machines**

#### **Discover ways in which machines help people do work (machine's design and safety).**

- Identifies the machines used by farmers to sow seeds.
- Examines machines used in the farming cycle.
- Identifies methods and machines used in the farming cycle.
- Identifies methods and machines used in the farming cycle.
- Investigates machines which use turning forces.
- Investigates simple forces and how they are measured.
- Explores the basic principles of levers.
- Identifies the basic parts and function of a lever.
- Identifies the basic principles of gears.
- Experiments with simple gear trains.
- Investigates the engines and motors used to power modern machines.
- Explores the idea of work as a force being applied for a certain distance.
- Investigates the basic principle of the inclined plane.
- Explores applications of the inclined plane.
- Investigates performance of multiple gear systems.
- Recognizes features of gear systems.
- Builds and develops a model fairground ride.
- Designs and builds a working model of a machine for raising ore from a mine to a waiting truck.
- Designs and builds a vehicle consisting of a tractor unit pulling a loaded trailer.
- Designs and builds a working model of a freight terminal.
- Explores the basic principles of machines.
- Investigates the forces acting on objects.

## **Motion**

**Investigate how laws affect the motion of objects and systems that move the human body.**

Explores the forces that can be used to overcome gravity.

Explores the forces that can be used to overcome gravity.

## **Sources of Energy**

**Explore sources of energy on Earth and ways in which energy changes form and how it affects living things.**

Matches living things, environments and habitats.

Identifies that living things can be classified into kingdoms.

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Explores the effects of pollution on living things.

## **Electricity**

**Explore electrical energy and how it influences people's everyday lives.**

Investigates the development of electronic communication systems.

## **Plants**

**Examine different ways in which plants communicate, grow and their benefit to people.**

Identifies the parts of a plant and their function.

Identifies stages in the life cycle of a plant.

Identifies processes of photosynthesis in plants.

Describes methods used to promote plant growth.

Describes processes of natural selection in plants and animals.

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Identifies processes of photosynthesis in plants.

Describes methods used to promote plant growth.

Investigates the classification of plants and animals.

## **Weather**

**Understand interactions of the hydrosphere, lithosphere and atmosphere.**

Investigates frictional forces on water.

Compares the frictional force on land to the frictional force on water.

Investigates the effect of air resistance.

Classifies the control surfaces of an airplane and their purpose.

Recognizes that climate can influence the design of houses.

Describes parts of the water cycle.

Matches living things, environments and habitats.

Recognizes how the design of houses is affected by the climate.

**Understand relationships of earth position in space to weather and climate.**

Recognizes that climate can influence the design of houses.

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