

Kindergarten | Science Power Standards

Physical Science

1. Students explain that objects are made of different types of materials with properties that can be observed and used to sort things into different groups.

Life Science

2. Students describe the unique structures of plants and animals and how these structures help meet their basic needs for life.
3. Students describe how the environmental conditions in a habitat affect plants and animals.
4. Students use the features and behaviors of living things to classify organisms into groups with similar features.

Processes, Systems, Inquiry, Application

5. Students describe the part-whole relationship in a system.
6. Students plan and carry out scientific investigations.
7. Students explain that materials are more suitable for some purposes than for others.

Kindergarten Proficiency Scales | Science

Power Standard 1: Students explain that objects are made of different types of materials with properties that can be observed and used to sort things into different groups.

Assessing and Reporting Strand: *Science/Physical*

Score Descriptor	Proficiency Scale
4 Exceeds Standard	<p>Complex content and thinking about content (not new content), including deeper, more conceptual applications that include in-depth inferences that go beyond what was explicitly taught in class.</p> <ul style="list-style-type: none"> Transfer sorting ability to objects other than wood and paper. Observe and describe the properties of other than wood and paper. Apply the properties of wood and paper to solve problems.
3 At Standard	<p>The standard/learning target: content, concepts, and/or processes/skills (simple or complex) which were explicitly taught in class.</p> <p>Students explain that objects are made of different types of materials with properties that can be observed and used to sort things into different groups.</p> <ul style="list-style-type: none"> • Observe and describe the properties of different kinds of wood and paper. • Compare different kinds of wood and paper to explain how they are alike and how they are different. • Sort various wood and paper materials into groups.
2 Approaching Standard	<p>Simpler content, details, procedures and processes, including foundational knowledge and vocabulary/concepts, which were explicitly taught in class.</p> <ul style="list-style-type: none"> Recall some of the properties of wood and paper. Sort some wood and/or paper into groups but unable to explain likes and differences.
1 Not At Standard	<p>With help, partial understanding of some of the simpler and complex details and processes.</p> <ul style="list-style-type: none"> With help, student can perform Score 2.0 and 3.0 expectations

First Grade | Science Power Standards

Physical Science

1. Students describe the properties of solids and liquids.

Earth and Space Science

2. Students explain how daily and seasonal weather changes can be observed, compared, and predicted.

Life Science

3. Students describe the basic structures and needs of plants.
4. Students describe the life cycle of plants.
5. Students use structures of living things to classify them into groups with similar features.

Processes, Systems, Inquiry, Application

6. Students describe the part-whole relationship in a system and explain the outcome when various objects are taken apart.
7. Students plan and carry out scientific investigations to explain answers to questions about the natural world.
8. Students use a variety of tools to solve problems.

First Grade Proficiency Scales | Science

Power Standard 1: Students describe the properties of solids and liquids.

Assessing and Reporting Strand: *Science/Physical*

Score Descriptor	Proficiency Scale
4 Exceeds Standard	<p>Complex content and thinking about content (not new content), including deeper, more conceptual applications that include in-depth inferences that go beyond what was explicitly taught in class.</p> <p>Design a way to evaluate whether a given substance is a solid or a liquid (experiment, method of observation).</p> <p>Compare and contrast the properties of solids and liquids.</p> <p>Choose the best substance for a specific task based on its properties and justify your choice.</p>
3 At Standard	<p>The standard/learning target: content, concepts, and/or processes/skills (simple or complex) which were explicitly taught in class.</p> <p>Describe the properties of solids and liquids.</p> <ul style="list-style-type: none"> • Describe the properties that distinguish solids from liquids. • Describe that liquids will take the shape of the container they occupy while solids keep their shape. • Explain how you know a given material is solid or liquid based on its properties. • Describe specific properties of a solid or liquid. • Predict the shape that a liquid will take in a variety of different containers. • Predict that frozen water will retain its shape when removed among containers of different shapes. • Sort substances based on those that are liquid and those that are solid.
2 Approaching Standard	<p>Simpler content, details, procedures and processes, including foundational knowledge and vocabulary/concepts, which were explicitly taught in class.</p> <p>Define "property" as it relates to solids and liquids.</p> <p>Label/name a given material as solid or liquid.</p> <p>Give examples of solids and liquids.</p>
1 Not At Standard	<p>With help, partial understanding of some of the simpler and complex details and processes.</p> <p>With help, student can perform Score 2.0 and 3.0 expectations.</p>

Second Grade | Science Power Standards

Physical Science

1. Students explain the relationship between forces and the motion of objects.
2. Students describe the properties of materials and use these properties to sort objects.

Earth and Space Science

3. Students distinguish between natural and human-made objects.

Life Science

4. Students describe the life cycle of various animals.
5. Students describe how ecosystems support life.

Processes, Systems, Inquiry, Application

6. Students explain how parts of a system are connected and work together.
7. Students use observations from scientific investigations and models to answer questions about the natural world
8. Students solve problems using tools.

Second Grade Proficiency Scales | Science

Power Standard 1: Students explain the relationship between forces and the motion of objects.

Assessing and Reporting Strand: *Science/Physical*

Score Descriptor	Proficiency Scale
4 Exceeds Standard	Complex content and thinking about content (not new content), including deeper, more conceptual applications that include in-depth inferences that go beyond what was explicitly taught in class. <ul style="list-style-type: none"> • Create a system (i.e. toy) that demonstrates how a force is needed to make an object move.
3 At Standard	<p>The standard/learning target: content, concepts, and/or processes/skills (simple or complex) which were explicitly taught in class.</p> Students explain the relationship between forces and the motion of objects. <ul style="list-style-type: none"> • Describe that the way to get an object to move is to give it a push or pull. • Demonstrate how objects fall toward the ground because of the pull of gravity. • Explain that a push or pull on an object is a force on that object (i.e. tops and zoomers). • Give an example to illustrate motion as a change in position over a period of time. • When asked to move the object farther, respond by pushing or pulling it more strongly.
2 Approaching Standard	<p>Simpler content, details, procedures and processes, including foundational knowledge and vocabulary/concepts, which were explicitly taught in class.</p> <ul style="list-style-type: none"> • Recall that a force is needed to make an object move. • Respond to a request to move an object by pushing or pulling it. • Label a force as either push or pull. • Identify gravity as a force that pulls objects to the ground. • State how the marble's placement on the ramp affects the distance traveled.
1 Not At Standard	<p>With help, partial understanding of some of the simpler and complex details and processes.</p>

Third Grade | Science Power Standards

Physical Science

1. Students describe sound and explain how sound is generated and travels.
2. Students describe different physical properties of materials and recognize that objects can be made from different types of materials.

Earth and Space Science

3. Students explain that rocks are composed of earth materials and can describe the properties of these materials.

Life Science

4. Students describe how all living things depend on each other and the nonliving resources in their ecosystem to survive and complete their life cycle.
5. Students describe structures and behaviors of plants and animals that allow them to survive.

Processes, Systems, Inquiry, Application

6. Students explain how parts of a system are connected and work together.
7. Students use observations from scientific investigations to answer questions about the natural world.
8. Students use tools and materials to produce successful solutions to problems.

Third Grade Proficiency Scales | Science

Power Standard 1: Students describe sound and explain how sound is generated and travels.

Assessing and Reporting Strand: *Science/Physical*

Score Descriptor	Proficiency Scale
4 Exceeds Standard	<p>Complex content and thinking about content (not new content), including deeper, more conceptual applications that include in-depth inferences that go beyond what was explicitly taught in class.</p> <p>Invent an instrument and explain how their instrument makes sound.</p> <p>Explain how sound energy is transferred.</p>
3 At Standard	<p>The standard/learning target: content, concepts, and/or processes/skills (simple or complex) which were explicitly taught in class.</p> <p>Students describe sound and explain how sound is generated and travels. Demonstrate how sound is generated by vibrations.</p> <ul style="list-style-type: none"> • Explain how sound travels from one place to another. • Explain how sound travels through solids, liquids, and gases. • Explain the properties of sound (e. g. pitch, volume). • Explain how changing an instrument can change the pitch of the sound. • Describe other forms of energy that can be transformed into sound energy.
	<p>Simpler content, details, procedures and processes, including foundational knowledge and vocabulary/concepts, which were explicitly taught in class.</p>
2 Approaching Standard	<p>Identify where the sound is generated.</p> <p>Recall that sound is generated by vibrations.</p> <p>Define pitch and volume.</p> <p>Identify sound as a form of energy.</p>
1 Not At Standard	<p>With help, partial understanding of some of the simpler and complex details and processes.</p> <p>With help, student can perform Score 2.0 and 3.0 expectations.</p>

Fourth Grade | Science Power Standards

Physical Science

1. Students explain that energy can be transferred from one location to another and transformed from one form to another.
2. Students explain the requirements of a circuit that allows an electrical device to work.

Earth and Space Science

3. Students explain the water cycle and processes involved in the water cycle.

Life Science

4. Students describe the interdependence of plants, animals and non-living resources in an ecosystem.

Processes, Systems, Inquiry, Application

5. Students explain a system in terms of its subsystems.
6. When given the research question, students plan, carry out, and communicate the results of a scientific investigation.
7. Students illustrate a simple model of a scientific concept and compare the model to the system represented.
8. When given a problem, students use technology to create and test solutions to the given problem.

Fourth Grade Proficiency Scales | Science

Power Standard 1: Students explain that energy can be transferred from one location to another and transformed from one form to another.

Assessing and Reporting Strand: *Science/Physical*

Score Descriptor	Proficiency Scale
4 Exceeds Standard	<p>Complex content and thinking about content (not new content), including deeper, more conceptual applications that include in-depth inferences that go beyond what was explicitly taught in class.</p> <p>Classify different forms of energy (e.g., heat, light, Motion, electricity) in a system.</p> <p>Design a diagram that shows one way that energy can be transferred from one place to another (e.g., electrical energy through a wire, light energy through space).</p> <p>Design a model which shows how energy is transformed from electrical energy to different kinds of energy in a circuit.</p>
3 At Standard	<p>The standard/learning target: content, concepts, and/or processes/skills (simple or complex) which were explicitly taught in class.</p> <p>Students explain that energy can be transferred from one location to another and transformed from one form to another.</p> <ul style="list-style-type: none"> • Identify different forms of energy (e.g., heat, light, Motion, electricity) in a system. • Draw and label diagrams showing several ways that energy can be transferred from one place to another (e.g., electrical energy through a wire, light energy through space). • Describe how electrical energy is transferred from one place to another. • Explain how energy is transformed from electrical energy to different kinds of energy in a circuit.
2 Approaching Standard	<p>Simpler content, details, procedures and processes, including foundational knowledge and vocabulary/concepts, which were explicitly taught in class.</p> <p>Identify some of the different forms of energy (e.g., heat, light, Motion, electricity) in a system.</p> <p>Match the diagram with the label showing ways that energy can be transferred from one place to another (e.g., electrical energy through a wire, light energy through space).</p> <p>Recalls that electrical energy is transferred from one place to another.</p> <p>Names forms of energy that electrical energy can be transformed into.</p>
1 Not At Standard	<p>With help, partial understanding of some of the simpler and complex details and processes.</p> <p>With help, student can perform Score 2.0 and 3.0 expectations</p>

Fifth Grade | Science Power Standards

Physical Science

1. Students explain that forces cause a change in motion and the strength of a force will affect how the object will move.
2. Students explain that energy can be transferred from one location to another and transformed from one form to another.

Earth and Space Science

3. Students explain how landforms are shaped.

Processes, Systems, Inquiry, Application

4. Students describe a system and the variables that might affect the system.
5. Students plan, carry out, and communicate the results and conclusions of a scientific investigation.
6. Students create a model of a scientific concept and explain how the model is similar and different from the idea being modeled.
7. Students use technological designs to create and test solutions to solve problems that affect humans.

Fifth Grade Proficiency Scales | Science

Power Standard 1: Students explain that forces cause a change in motion and the strength of a force will affect how the object will move.

Assessing and Reporting Strand: *Science/Physical*

Score Descriptor	Proficiency Scale
4 Exceeds Standard	<p>Complex content and thinking about content (not new content), including deeper, more conceptual applications that include in-depth inferences that go beyond what was explicitly taught in class.</p> <p>Demonstrate and explain the frictional force acting on an object with the use of a physical model.</p> <p>Apply the relationship between forces and motion to other forces they have not yet studied.</p>
3 At Standard	<p>The standard/learning target: content, concepts, and/or processes/skills (simple or complex) which were explicitly taught in class.</p> <p>Students explain that forces cause a change in motion and the strength of a force will affect how the object will move.</p> <ul style="list-style-type: none"> • Explain that forces cause a change in motion and the strength of a force will affect how the object will move. • Use examples to illustrate that a greater force can make an object move faster than a lesser force. • Compare the distances moved by an object (e.g. toy car) when given a small push and when given a big push.
2 Approaching Standard	<p>Simpler content, details, procedures and processes, including foundational knowledge and vocabulary/concepts, which were explicitly taught in class.</p> <p>Identify the force that starts something moving or changes its speed or direction of motion.</p> <p>Define a motion as a change in position over a period of time.</p> <p>Measure the distances moved by an object (e.g. toy car) when given a small push and when given a big push.</p>
1 Not At Standard	<p>With help, partial understanding of some of the simpler and complex details and processes.</p> <p>With help, student can perform Score 2.0 and 3.0 expectations.</p>

Sixth Grade | Science Power Standards

Physical Science

1. Students describe energy transfers and transformations, and explain that energy is always conserved.
2. Students explain the characteristics of light and how light allows objects to be seen.

Earth and Space Science

3. Students describe the rock cycle and explain the processes involved in the formation of rocks.
4. Students explain how current landforms we observe today provide evidence of past geological processes.

Life Science

5. Students describe the role of a cell and its parts in living organisms and explain how scientists use cells to classify living things.
6. Students explain how specific structures and adaptations of an organism help the organism survive and reproduce.

Processes, Systems, Inquiry, Application

7. Students describe systems and solve problems using systems thinking.
8. Students plan, carry out, analyze, and communicate the findings of a scientific investigation.
9. Students create a model of a scientific concept and explain the benefits and limitations of the model.

Sixth Grade Proficiency Scales | Science

Power Standard 1: Students describe energy transfers and transformations, and explain that energy is always conserved.

Assessing and Reporting Strand: *Science/Physical*

Score Descriptor	Proficiency Scale
<p>4 Exceeds Standard</p>	<p>Complex content and thinking about content (not new content), including deeper, more conceptual applications that include in-depth inferences that go beyond what was explicitly taught in class.</p> <p>Create a model showing several energy transformations.</p> <p>Apply their understanding of energy transfers and transformations to a new scenario.</p> <p>Evaluate a system/situation to determine if energy is conservation.</p>
<p>3 At Standard</p>	<p>The standard/learning target: content, concepts, and/or processes/skills (simple or complex) which were explicitly taught in class.</p> <p>Students describe energy transfers and transformations, and explain that energy is always conserved.</p> <ul style="list-style-type: none"> • Describe energy transformations from one form to another. • Describe energy transfers from one place to another. • Explain that energy is always conserved through transformations and transfers.
<p>2 Approaching Standard</p>	<p>Simpler content, details, procedures and processes, including foundational knowledge and vocabulary/concepts, which were explicitly taught in class.</p> <p>Recognize that energy can change from one form to another or from one place to another.</p> <p>Identify and label different forms of energy.</p> <p>Identify the location of energy transfers and transformations.</p>
<p>1 Not At Standard</p>	<p>With help, partial understanding of some of the simpler and complex details and processes.</p> <p>With help, student can perform Score 2.0 and 3.0 expectations.</p>