

**Second Grade
2016 Science Standards Resource Guide**

Physical Science				
2016 Indiana Academic Standards	Clarifying Statements	Vocabulary	Crosscutting Concept	Disciplinary Core Idea
2.PS.1 Plan and conduct an investigation to describe and classify different kinds of materials by their observable properties.	(1) Observations could include color, texture, hardness, and flexibility. (2) Patterns could include the similar properties that different materials share.	physical property – characteristics that can be observed or measured solid – a substance that keeps its size and shape liquid – a substance that takes the shape of its container gas – a substance that is like air and has no fixed shape	Patterns	PS1.A: Structure and Properties of Matter
2.PS.2 Predict the result of combining solids and liquids in pairs. Mix, observe, gather, record, and discuss evidence of whether the result may have different properties than the original materials.		matter – anything that has mass and takes up space physical property – characteristics that can be observed or measured mixture – something being combined solution – substances that have been mixed together volume – the amount of space an object occupies dissolve – to become broken up or absorbed by something	Energy and Matter	PS1.A: Structure and Properties of Matter PS1.B: Chemical Reactions

**Second Grade
2016 Science Standards Resource Guide**

<p>2.PS.3 Construct an argument with evidence that some changes caused by heating and cooling can be reversed and some cannot.</p>	<p>(1) Examples of reversible changes could include materials such as water and butter at different temperatures. (2) Examples of irreversible changes could include cooking an egg, freezing a plant leaf, and heating paper.</p>	<p>physical property – characteristics that can be observed or measured volume – the amount of space an object occupies temperature – how hot or cold something is thermometer – an instrument used for measuring temperature evaporate – to change from a liquid to a gas solid – a substance that keeps its size and shape liquid – a substance that takes the shape of its container gas – a substance that is like air and has no fixed shape</p>	<p>Cause and Effect</p>	<p>PS1.B: Chemical Reactions</p>
<p>2.PS.4 Analyze data obtained from testing different materials to determine which materials have the properties that are best suited for an intended purpose.</p>	<p>(1) Examples of properties could include strength, flexibility, hardness, texture, and absorbency.</p>		<p>Cause and Effect</p>	<p>PS1.A: Structure and Properties of Matter</p>

**Second Grade
2016 Science Standards Resource Guide**

Earth and Space Science				
2016 Indiana Academic Standards	Clarifying Statements	Vocabulary	Crosscutting Concepts	Disciplinary Core Idea
2.ESS.1 Record detailed weather observations, including cloud cover, cloud type, and type of precipitation on a daily basis over a period of weeks and correlate observations to the time of year. Chart and graph collected data.		precipitation – falling products of condensation in the atmosphere, as rain, snow, or hail	Patterns Stability and Change	ESS2.C: The Roles of Water in Earth’s Surface Processes ESS2.D: Weather and Climate
2.ESS.2 Investigate the severe weather of the region and its impact on the community, looking at forecasting to prepare for, and respond to, severe weather.	(1) Emphasis is on local forms of severe weather.	tornado – a localized, violently destructive windstorm occurring on land thunderstorm – a transient storm of lightning and thunder, usually with rain and gusty winds	Patterns Systems and System Models	ESS2.D: Weather and Climate ESS3.B: Natural Hazards
2.ESS.3 Investigate how wind or water change the shape of the land and design solutions for prevention.	(1) Examples of solutions could include different designs of dikes and windbreaks to hold back wind and water and different designs for shrubs, grass, and trees to hold back land.	erosion – the process of eroding or being eroded by wind, water, or other natural agents weathering – the various mechanical and chemical processes that cause exposed rock to decompose	Stability and Change	ESS2.A: Earth Materials and Systems

Second Grade
2016 Science Standards Resource Guide

2.ESS.4 Obtain information to identify where water is found on Earth and that it can be solid or liquid.			Patterns	ESS2.C: The Roles of Water in Earth's Surface Processes
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**Second Grade
2016 Science Standards Resource Guide**

Life Science				
2016 Indiana Academic Standards	Clarifying Statements	Vocabulary	Crosscutting Concepts	Disciplinary Core Ideas
2.LS.1 Determine patterns and behavior (adaptations) of parents and offspring which help offspring to survive.	(1) Examples of patterns could include features that plants or animals share. (2) Examples of observations could include that leaves from the same kind of plant are the same shape but can differ in size and that a particular breed of dog looks like its parents but is not exactly the same.	adaptation – any alteration in the structure or function of an organism or any of its parts that results from natural selection and by which the organism becomes better fitted to survive and multiple in its environment	Patterns	LS3.A: Inheritance of Traits LS3.B: Variation of Traits
2.LS.2 Compare and contrast details of body plans and structures within the life cycles of plants and animals.			Structure and Function	LS1.A: Structure and Function LS1.B: Growth and Development
2.LS.3 Classify living organisms according to variations in specific physical features (i.e. body coverings, appendages) and describe how those features may provide an advantage for survival in different environments.		competition – the struggle among organisms, both of the same and of different species, for food, space, and other vital requirements	Structure and Function	LS3.B: Variation of Traits

**Second Grade
2016 Science Standards Resource Guide**

Engineering				
2016 Indiana Academic Standards	Clarifying Statements	Vocabulary	Crosscutting Concepts	Disciplinary Core Ideas
K-2.E.1 Pose questions, make observations, and obtain information about a situation people want to change. Use this data to define a simple problem that can be solved through the construction of a new or improved object or tool.	<p style="text-align: center;"><i>Collaborate across K-2 grade levels to ensure that the standard is adequately instructed over the course of three years.</i></p> <p>(1) Explore situations that people would want to change through questions, observations, and information. (2) Use data that is age-appropriate to define a simple problem. (3) Construct a new or improve an object or tool.</p>	<p>observation – action or process of observing something or someone carefully or in order to gain information situation – a set of circumstances in which one finds oneself data – facts and statistics collected together for reference and analysis construction – to build or form by putting together parts</p>		ETS1.A: Defining and Delimiting an Engineering Problem
K-2.E.2 Develop a simple sketch, drawing, or physical model to illustrate and investigate how the shape of an object helps it function as needed to solve an identified problem.	<p style="text-align: center;"><i>Collaborate across K-2 grade levels to ensure that the standard is adequately instructed over the course of three years.</i></p> <p>(1) Explore how the shape of an object helps it function to solve a problem.</p>	<p>sketch – a rough design, plan, or draft drawing – graphic representation physical model – physical copy of an object</p>	Structure and Function	ETS1.B: Developing Possible Solutions ETS1.C: Optimizing the Design Solution
K-2.E.3 Analyze data from the investigation of two objects constructed to solve the same problem to compare the strengths and weaknesses of how each performs.	<p style="text-align: center;"><i>Collaborate across K-2 grade levels to ensure that the standard is adequately instructed over the course of three years.</i></p> <p>(1) Look at age-appropriate data of two objects (2) Compare strengths and weaknesses</p>	<p>data – facts and statistics collected together for reference and analysis perform – carry out, accomplish, or fulfill an action, task, or function</p>		ETS1.B: Developing Possible Solutions ETS1.C: Optimizing the Design Solution