| **Physical Science** | | | | |
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| **2016 Indiana Academic Standards** | **Clarifying Statements** | **Vocabulary** | **Crosscutting Concept** | **Disciplinary Core Idea** |
| **3.PS.1** Plan and conduct an investigation to provide evidence of the effects of balanced and unbalanced forces on the motion of an object. | **(1)** Examples could include that an unbalanced force on one side of a ball can make it start moving and that balanced forces pushing on a box from both sides will not produce any motion at all. |  | Cause and Effect | PS2.A: Forces and Motion  PS2.B:  Types of Interactions |
| **3.PS.2** Identify types of simple machines and their uses. Investigate and build simple machines to understand how they are used. |  | **pulley** – uses grooved wheels and a rope to raise, lower, or move a load  **lever** – a stiff bar that rests on a support called a fulcrum which lifts or moves loads  **wedge** – an object with at least one slanting side ending in a sharp edge  **wheel and axle** – a wheel with a rod, called an axle, through its center lifts or moves loads  **inclined plane** – a slanting surface connecting a lower lever to a higher level  **screw** – an inclined plane wrapped around a pole which holds things together or lifts materials | Systems and System Models | PS2.A: Forces and Motion |
| **3.PS.3** Generate sound energy using a variety of materials and techniques, and recognize that it passes through solids, liquids, and gases (i.e. air). |  |  | Energy and Matter | PS3.A: Definitions of Energy  PS4.A: Wave Properties |
| **3.PS.4** Investigate and recognize properties of sound that include pitch, loudness (amplitude), and vibration as determined by the physical properties of the object making the sound. |  |  | Energy and Matter | PS3.A: Definitions of Energy  PS4.A: Wave Properties |

| **Earth and Space Science** | | | | |
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| **2016 Indiana Academic Standards** | **Clarifying Statements** | **Vocabulary** | **Crosscutting Concepts** | **Disciplinary Core Idea** |
| **3.ESS.1** Obtain and combine information to determine seasonal weather patterns across the different regions of the United States. | **(1)** Examples of data could include average temperature, precipitation, and wind direction. |  | Patterns | ESS2.D: Weather and Climate |
| **3.ESS.2** Develop solutions that could be implemented to reduce the impact of weather related hazards. | **(1)** Examples of solutions to weather related hazards could include barriers to prevent flooding, wind-resistant roofs, and lightning rods. | **tornado** – violently rotating column of air that spins while in contact with both the Earth and clouds  **thunderstorm** – a storm with thunder and lightning and typically also heavy rain or hail  **hurricane** – a storm with a violent wind, particular a tropical cyclone in the Caribbean  **flood** – an overflowing of a large amount of water beyond its normal confines, especially over what is normally dry land  **landslide** – the sliding down of a mass of earth or rock from a mountain or cliff | Cause and Effect | ESS2.D: Weather and Climate  ESS3.B: Natural Hazards |
| **3.ESS.3** Observe the detailed characteristics of rocks and minerals. Identify and classify rocks as being composed of different combinations of minerals. |  | **igneous** – having solidified from lava or magma  **sedimentary** – formed from sediment deposited by water or air  **metamorphic** – undergone transformation by heat, pressure, or other natural agencies | Structure and Function | ESS2.A: Earth’s Materials and Systems |
| **3.ESS.4** Determine how fossils are formed, discovered, layered over time, and used to provide evidence of the organisms and the environments in which they lived long ago. | **(1)** Examples of data could include type, size, and distributions of fossil organisms.  **(2)** Examples of fossils and environments could include marine fossils found on dry land, tropical plant fossils found in Artic areas, and fossils of extinct organisms. | **fossil** – the remains or impression of a prehistoric organism preserved in petrified form or as a mold or cast in rock | Cause and Effect  Structure and Function | ESS1.C:  The History of Planet Earth  LS4.A:  Evidence of Common Ancestry and Diversity |

| **Life Science** | | | | |
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| **2016 Indiana Academic Standards** | **Clarifying Statements** | **Vocabulary** | **Crosscutting Concepts** | **Disciplinary Core Ideas** |
| **3.LS.1** Analyze evidence that plants and animals have traits inherited from parents and that variation of these traits exists in a group of similar organisms. | **(1)** Patterns are the similarities and differences in traits shared between offspring and their parents, or among siblings.  **(2)** Emphasis is on organisms other than humans. | **inherited** – derive (a quality, characteristic, or predisposition) genetically from one’s parents or ancestors  **traits** – a distinguishing quality or characteristic | Patterns | LS3.A: Inheritance of Traits  LS3.B: Variation of Traits |
| **3.LS.2** Plan and conduct an investigation to determine the basic needs of plants to grow, develop, and reproduce. |  |  | Structure and Function |  |
| **3.LS.3** Construct an argument that plants and animals have internal and external structures that function to support survival, growth, behavior, and reproduction. |  |  | Structure and Function  Stability and Change | LS1.A: Structure and Function  LS1.B: Growth and Development of Organisms |
| **3.LS.4** Construct an argument that some animals form groups that help members survive. |  |  | Cause and Effect | LS2.D:  Social Interactions and Group Behavior |

| **Engineering** | | | | |
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| **2016 Indiana Academic Standards** | **Clarifying Statements** | **Vocabulary** | **Crosscutting Concepts** | **Disciplinary Core Ideas** |
| **3-5.E.1** Identify a simple problem with the design of an object that reflects a need or a want. Include criteria for success and constraints on materials, time, or cost. |  |  | Scale, Proportion, and Quantity  Systems and System Models | ETS1.A: Defining and Delimiting an Engineering Problem |
| **3-5.E.2** Construct and compare multiple plausible solutions to a problem based on how well each is likely to meet the criteria and constraints of the problem. |  |  |  | ETS1.B: Developing Possible Solutions  ETS1.C: Optimizing the Design Solution |
| **3-5.E.3** Construct and perform fair investigations in which variables are controlled and failure points are considered to identify aspects of a model or prototype that can be improved. |  | **prototype** – the original or model on which something is based or formed | Systems and System Models |  |