| **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 |
| **2.PS.3** Construct an argument with evidence that some changes caused by heating and cooling can be reversed and some cannot. | **(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. | **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 | Cause and Effect | PS1.B:  Chemical Reactions |
| **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. | **(1)** Examples of properties could include strength, flexibility, hardness, texture, and absorbency. |  | Cause and Effect | PS1.A:  Structure and Properties of Matter |

| **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 |
| **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 |

| **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 |

| **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. | *Collaborate across K-2 grade levels to ensure that the standard is adequately instructed over the course of three years.*  **(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. | **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 |  | 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. | *Collaborate across K-2 grade levels to ensure that the standard is adequately instructed over the course of three years.*  **(1)** Explore how the shape of an object helps it function to solve a problem. | **sketch** – a rough design, plan, or draft  **drawing** – graphic representation  **physical model** – physical copy of an object | 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. | *Collaborate across K-2 grade levels to ensure that the standard is adequately instructed over the course of three years.*  **(1)** Look at age-appropriate data of two objects  **(2)** Compare strengths and weaknesses | **data** – facts and statistics collected together for reference and analysis  **perform** – carry out, accomplish, or fulfill an action, task, or function |  | ETS1.B: Developing Possible Solutions  ETS1.C: Optimizing the Design Solution |