

3rd Grade NYSSLS/NGSS Aligned Curriculum 2019-2020

3. Forces and Interactions.

| Standard | Performance Expectations | Clarification | Disciplinary Core Idea | Mystery Science And other resources | Catholic Identity |
|----------|--|---|---|--|---|
| 3-PS2-1. | Plan and conduct an investigation to provide evidence of the effects of balanced and unbalanced forces on the motion of an object. | Examples could include an unbalanced force on one side of an object can make it start moving; and, balanced forces (including friction) acting on a stationary object from both sides will not produce any motion at all. Assessment Boundary: Assessment is limited to one variable at a time: number, size, or direction of forces. | PS2.A: Forces and Motion Each force acts on one particular object and has both strength and a direction. An object at rest typically has multiple forces acting on it, but they add to give zero net force on the object. Forces that do not sum to zero can cause changes in the object's speed or direction of motion. (Boundary: Qualitative and conceptual, but not quantitative addition of forces are used at this level.) (3-PS2-1) | MS: Invisible Forces (5-10 weeks) This introductory forces unit will give students a new understanding of the invisible pushes and pulls that operate in the world around them. They will realize that understanding forces will let them do surprising things — from building a sturdy bridge from paper to using the pull of a rubber band to send a cardboard “hopper” flying. What students learn in this unit will connect to the world around them, leading them to think about such things as the force of friction as they slide down a playground slide or the invisible force that makes magnets cling to the | United States Catholic Catechism for Adults - Appreciation and respect for the laws of nature |
| 3-PS2-2. | Make observations and/or measurements of an object's motion to provide evidence that a pattern can be used to predict future motion. | Examples of motion with a predictable pattern could include a child swinging in a swing, a ball rolling back and forth in a bowl, and two children on a see-saw. Assessment does not include technical terms such as period and frequency. | The patterns of an object's motion in various situations can be observed and measured; when that past motion exhibits a regular pattern, future motion can be predicted from it. (Boundary: Technical terms, such as magnitude, velocity, momentum, and vector quantity, are not introduced at this level, but the concept that some quantities need both size and direction to be described is developed.) (3-PS2-2) | | |
| 3-PS2-3. | Ask questions to determine cause and effect relationships of electric or | Examples of an electric force could include the force on hair from an electrically charged | | | |

3rd Grade NYSSLS/NGSS Aligned Curriculum 2019-2020

| | | | | | |
|-----------------|--|---|--|--|--|
| | <p>magnetic interactions between two objects not in contact with each other.</p> | <p>balloon and the electrical forces between a charged rod and pieces of paper; examples of a magnetic force could include the force between two permanent magnets, the force between an electromagnet and steel paperclips, and the force exerted by one magnet versus the force exerted by two magnets. Examples of cause and effect relationships could include how the distance between objects affects strength of the force and how the orientation of magnets affects the direction of the magnetic force.</p> | <p>PS2.B: Types of Interactions Objects in contact exert forces on each other. (3-PS2-1)</p> <p>Electric and magnetic forces between a pair of objects do not require that the objects be in contact. The sizes of the forces in each situation depend on the properties of the objects and their distances apart and, for forces between two magnets, on their orientation relative to each other. (3-PS2-3), (3-PS2-4)</p> | <p>refrigerator. Hands-on activities focus on engineering, investigation, and discovery.</p> | |
| <p>3-PS2-4.</p> | <p>Define a simple design problem that can be solved by applying scientific ideas about magnets.</p> | <p>Examples of problems could include constructing a latch to keep a door shut and creating a device to keep two moving objects from touching each other.</p> | | | |

3rd Grade NYSSLS/NGSS Aligned Curriculum 2019-2020

3. Interdependent Relationships in Ecosystems

| Standard | Performance Expectations | Clarification | Disciplinary Core Idea | Mystery Science And other resources | Catholic Identity |
|----------|---|---|---|---|--|
| 3-LS2-1. | Construct an argument that some animals form groups that help members survive. | Examples of groups could include a herd of cattle, a swarm of bees, a flock of geese, a pod of whales, etc. | LS2.C: Ecosystem Dynamics, Functioning, and Resilience □ When the environment changes in ways that affect a place’s physical characteristics, temperature, or availability of resources, some organisms survive and reproduce, others move to new locations, yet others move into the transformed environment, and some die. | MS: Animals Through Time (8-16 weeks) In this unit students will develop an appreciation for how animals and the places they live (their habitats) are not constant—they have changed over time. | Gn 1 -God’s Creation |
| 3-LS4-1. | Analyze and interpret data from fossils to provide evidence of the organisms and the environments in which they lived long ago. | Examples of data could include type, size, and distributions of fossil organisms. Examples of fossils and environments could include marine fossils found on dry land, tropical plant fossils found in Arctic areas, and fossils of extinct organisms. Assessment Boundary: Assessment is limited to major fossil types and relative ages. | LS2.D: Social Interactions and Group Behavior (NYSED) Being part of a group helps some animals obtain food, defend themselves, and survive. Groups may serve different functions and vary dramatically in size. (Note: Moved from K–2) (3-LS2-1) | Fossils give us a window to the animals and habitats of the past. Selective breeding shows us not only how some animals of the past became domesticated but allows us to imagine how they might look in the future. | National Directory for Catechesis - Protect all life and care for God’s Creation. St. Francis of Assisi is the patron saint of animals. |
| 3-LS4-3. | Construct an argument with evidence that in a particular habitat some organisms can survive well, some survive less well, and some cannot survive at all. | Examples of evidence could include needs and characteristics of the organisms and habitats involved. The organisms and their habitat make up a system in which the parts depend on each other. | LS4.A: Evidence of Common Ancestry and Diversity □ Some kinds of plants and animals that once lived on Earth are no longer found anywhere. (Note: Moved from K–2) (3-LS4-1) | | A sign used by early Christians was a fish. In greek, the letters for “Jesus Christ, Son of God, the Savior” |

3rd Grade NYSSLS/NGSS Aligned Curriculum 2019-2020

| | | | | | |
|----------|--|---|--|--|--|
| 3-LS4-4. | Make a claim about the merit of a solution to a problem caused when the environment changes and the types of plants and animals that live there may change.* | Examples of environmental changes could include both natural and human-influenced changes in land characteristics, water distribution, temperature, food, and other organisms. Assessment Boundary: Assessment is limited to a single environmental change. | <p>Fossils provide evidence about the types of organisms that lived long ago and also about the nature of their environments. (3-LS4-1)</p> <p>LS4.C: Adaptation For any particular environment, some kinds of organisms survive well, some survive less well, and some cannot survive at all. (3-LS4-3)</p> <p>LS4.D: Biodiversity and Humans Populations live in a variety of habitats, and change in those habitats affects the organisms living there. (3-LS4-4)</p> | | <p>spell FISH.</p> <p>Laudato Si Encyclical Letter of Pope Francis - Protect all living things and the environment.</p> <p>Our responsibility to the Earth and all creation.</p> |
|----------|--|---|--|--|--|

3rd Grade NYSSLS/NGSS Aligned Curriculum 2019-2020

| 3. Inheritance and Variation of Traits: Life Cycles and Traits | | | | | |
|---|--|--|---|---|---|
| Standard | Performance Expectations | Clarification | Disciplinary Core Idea | Mystery Science And other resources | Catholic Identity |
| 3-LS1-1. | Develop models to describe that organisms have unique and diverse life cycles but all have in common birth, growth, reproduction, and death. | Changes organisms go through during their life form a pattern. Assessment Boundary: Assessment of plant life cycles is limited to those of flowering plants. | LS1.B: Growth and Development of Organisms -Reproduction is essential to the continued existence of every kind of organism. Plants and animals have unique and diverse life cycles. (3-LS1-1) | MS: Power of Flowers (4-8 weeks) This unit develops the idea that by studying how plants reproduce and pass on their traits, we human beings have figured out how to make food plants even more useful to us. | Gn 1 -God's Creation National Directory for Catechesis - Protect all life and care for God's creation. |
| 3-LS3-1. | Analyze and interpret data to provide evidence that plants and animals have traits inherited from parents and that variation of these traits exists in a group of similar organisms. | Patterns are the similarities and differences in traits shared between offspring and their parents, or among siblings. Emphasis is on organisms other than humans. | LS3.A: Inheritance of Traits -Many characteristics of organisms are inherited from their parents. (3-LS3-1) -Other characteristics result from individuals' interactions with the environment, which can range from diet to learning. (3-LS3-2) -(NYSED) Some characteristics result from the interactions of both inheritance and the effect of the environment. (3-LS3-2) | Students first discover how plants reproduce by exploring the process of pollination and fruiting. Then students are introduced to the process of plant domestication (selection of traits based on inheritance and variation). | Psalm 139:14 - "I am the vine, you are the branches..." Natural laws are established by God. |
| 3-LS3-2. | Use evidence to support the explanation that traits can be influenced by the environment. | Examples of the environment affecting a trait could include normally tall plants grown with insufficient water are stunted; and, a pet dog that is given too much food and little exercise may | LS3.B: Variation of Traits -Different organisms vary in how they look and function because they have different inherited information. (3-LS3-1) | | |

3rd Grade NYSSLS/NGSS Aligned Curriculum 2019-2020

| | | | | | |
|----------|---|---|---|--|--|
| | | become overweight. | -The environment also affects the traits that an organism develops. (3-LS3-2) | | |
| 3-LS4-2. | Use evidence to construct an explanation for how the variations in characteristics among individuals of the same species may provide advantages in surviving, finding mates, and reproducing. | Examples of cause and effect relationships could include plants that have larger thorns than other plants may be less likely to be eaten by predators; and, animals that have better camouflage coloration than other animals may be more likely to survive and therefore more likely to produce offspring. | LS4.B: Natural Selection -Sometimes the differences in characteristics between individuals of the same species provide advantages in surviving, finding mates, and reproducing. (3-LS4-2) | | |

3rd Grade NYSSLS/NGSS Aligned Curriculum 2019-2020

3. Weather and Climate

| Standard | Performance Expectations | Clarification | Disciplinary Core Idea | Mystery Science And other resources | Catholic Identity |
|-----------|---|--|---|--|--|
| 3-ESS2-1. | Represent data in tables and graphical displays to describe typical weather conditions expected during a particular season. | Examples of data could include average temperature, precipitation, and wind direction. Assessment Boundary: Assessment of graphical displays is limited to pictographs and bar graphs. | ESS2.D: Weather and Climate - Scientists record patterns of the weather across different times and areas so that they can make predictions about what kind of weather might happen next. (3-ESS2-1) -Climate describes a range of an area's typical weather conditions and the extent to which those conditions vary over years. (3-ESS2-2) | MS: Stormy Skies (4-8 weeks) This unit develops the idea that by paying careful attention to clouds, wind, and other weather clues around us, we can predict the daily weather and make sense of why places on earth look and feel the way they do. | National Directory for Catechesis Catholic Social Teaching -To provide aid to people in areas affected by natural disasters |
| 3-ESS2-2. | Obtain and combine information to describe climates in different regions of the world. | Emphasis should be on various climates in different regions rather than on localized weather conditions. | -(NYSED) Earth's processes continuously cycle water, contributing to weather and climate. (3-ESS2-3) | | 1 Kings 19: 11-13 |
| 3-ESS3-1. | Make a claim about the merit of a design solution that reduces the impacts of a weather-related hazard. | Examples of design solutions to weather-related hazards could include barriers to prevent flooding, wind resistant roofs, and lightning rods. | ESS3.B: Natural Hazards -A variety of natural hazards result from natural processes. | | -Biblical comfort from earthquakes and other natural disasters |
| 3-ESS2-3. | Plan and conduct an investigation to determine the connections between weather and water processes in Earth systems. | Emphasis should be on the processes that connect the water cycle and weather patterns. | Humans cannot eliminate natural hazards but can take steps to reduce their impacts. (3-ESS3-1) (Note: This Disciplinary Core Idea is also addressed by 4-ESS3-2.) | | |