

PHYSICAL SCIENCE
Matter and its Interactions
Faith supporting Reason <ul style="list-style-type: none"> Surrounded by Gods' loving embrace and energy God is surrounding us everyday. Everything God created is full of Matter
Catholics making contribution to the topic <ul style="list-style-type: none"> Alessandro Volta, Charles Coulomb, William Thompson Kelvin and Henri Victor Regnault
Science outcomes <ol style="list-style-type: none"> Plan and conduct an investigation to describe and classify different kinds of materials by their observable properties. Analyze data obtained from testing different materials to determine which materials have the properties that are best suited for an intended purpose. Make observations to construct an evidence-based account of how an object made of a small set of pieces can be disassembled and made into a new object. Construct an argument with evidence that some changes caused by heating or cooling can be reversed and some cannot.
Engineering - Experiments - Extension Activities <ul style="list-style-type: none"> Sink verses floating activity Difference in Solid, liquid, and Gas – make Root Beer Floats. The ice cream is the solid and the pop is the liquid. When you add them together you have a gas.
Crosscutting Concepts <ul style="list-style-type: none"> Religion- Moses and parting of the Red Sea. Explain how Moses could part the sea by moving the liquid water. Also add Noah's Arc and how Noah and relate to Math. Noah had to know dimensions of the arc and the force of the water in order to protect the animals. ELA- Write and explain the difference between solid, liquid, and gas by using a Venn Diagram. Make a flip chart comparing the properties Math- Volume, shape (which holds more), measurement. Example: start with popcorn kernels and find the weight and mass of the kernels. Show how much space it takes up in the container. Talk about when you pop it, you are creating a gas. After it is popped again talk about the differences in weight, mass, and how much space the popped corn takes up. P.E.- Difference in throwing types of balloons: solid – frozen balloon, liquid – water balloon, and gas – normal balloon Social Studies- Various locations have different states of matter. Examples: Antarctica has solid environments, Rain Forests have liquid environments, and areas with volcanoes would have a gaseous environment. Other

LIFE SCIENCE

Ecosystems: Interactions, Energy, and Dynamics

Faith supporting Reason

- God gives man the talent and choices to care for his creation

Catholics making contribution to the topic

- Issac Newton, James Britten, Stephan Endlicher, Antoine Laurent de Jussieu, and Pierre Duhem

Science outcomes

1. Plan and conduct an investigation to determine if plants need sunlight and water to grow.
2. Develop a simple model that mimics the function of an animal in dispersing seeds or pollinating plants.

Engineering - Experiments - Extension Activities

- Use the scientific method to show the life cycle of a plant. Plant it, water it, watch it grow
- Make a diorama of an animal dispersing send or pollinating (example would be a bee in relation to a flower)

Crosscutting Concepts

- Religion- Relate seeds dispersing to the mustard seed story. Explain how even the smallest seed can grow and grow to its fullest. Also use the story of the Sower. In the Bible, the sower dropped seeds on the path. Birds picked them up and ate them. Other seeds fell where there was not much soil and they sprang up quickly. However, the new plants were burned by the hot sun and quickly died. Other seeds fell among thorns and the thorns choked them. The seeds that fell on good soil brought fourth grain. Matthew 13
- ELA- Create-an-Animal project. Pretend students are zoologists who have just discovered a new anima species. Ad every good scientist does they need to document the finding. Students should design a fact sheet highlighting this new animal discovery. Students should include: animals name, basic needs, how the needs are met, where it lives, an a picture of the animal in its natural habitat. The fact sheet should also include text features like labels, captions, maps, bold words, sub headings, and more,
- Math- With your growing plant you can measure the growth and graph the changes
- P.E.- Relate moving and randomness of seeds to Dodgeball. In dodgeball you don't know who will still be in the game when it is time to throw. The players move all around and it is hard to get a direct hit. Seeds are dispersed randomly by moving of the earth.
- Social Studies- Various locations have different seeds and flowers. Talk about state flowers and what grows better where
- Other

LIFE SCIENCE

Biological Evolution: Unity and Diversity

Faith supporting Reason

- We are all Gods' children and he loves us the same

Catholics making contribution to the topic

- Gregor Mendel, Leonardo da Vinci, Paula Gonzalez and Jean-Baptiste Lamarck

Science outcomes

1. Make observations of plants and animals to compare the diversity of life in different habitats.

Engineering - Experiments - Extension Activities

- Watch three different animals around the world and compare and contrast their habitats. After watching for several days, design or make your own habitat using what you observed through these web cams.
- Sandiegozoo.kids
- Nationalzoo.com

Crosscutting Concepts

- Religion- Relate to bible and how Jesus healed and cared for people with leprosy even though most people saw them as a disgrace.
- ELA- Create a World Habitat Mobile. Each student should get an information card for each habitat studied. The information cards should include: location characteristics, weather, types of animals, and types of plants and trees. Students should color a picture of the habitat on the back. Habitats could include: grassland, ocean, desert, rainforest, and tundra. Put the pieces together to form a mobile.
- Math- Relate to weather and temperature
- P.E.- Relate to Social Studies and play different sports from different areas.
- Social Studies- Connect with PE and discuss different sports played in different areas. Also talk about how you can adapt to a certain location. Example: Jamaica has a bobsled team.
- Other

EARTH AND SPACE SCIENCE	
Earth's Place in the Universe	
Faith supporting Reason	
<ul style="list-style-type: none"> • The universe and everything composed comes from above 	
Catholics making contribution to the topic	
<ul style="list-style-type: none"> • Gaspard-Gustave Coriolis, Giovanni Domenico Gassini, Leonardo da Vinci, Nicholas Copernicus and Johannes Kepler 	
Science outcomes	
<ol style="list-style-type: none"> 1. Use information from several sources to provide evidence that Earth events can occur quickly or slowly. 	
Engineering - Experiments - Extension Activities	
<ul style="list-style-type: none"> • Make observations for several nights of what you see in the night sky 	
Crosscutting Concepts	
<ul style="list-style-type: none"> • Religion- Use the bible story of the three kings using the bright star to find the baby Jesus • ELA- Draw out a constellation and write facts about it. Write a story about an alien after reading the book "Space Case" by James Marshall. • Math- Patterns • P.E.- Different sports to play in different seasons. • Social Studies- Create a booklet about the different places you could visit in space • Other- Use Oreos and create the phases of the moon with the icing. 	

EARTH AND SPACE SCIENCE
Earth's Systems
Faith supporting Reason <ul style="list-style-type: none"> • Trust in Gods' reasons for things and trust in Him
Catholics making contribution to the topic <ul style="list-style-type: none"> • Gaspard-Gustave Coriolis, Giovanni Domenico Gassini, Leonardo da Vinci, Nicholas Copernicus and Johannes Kepler
Science outcomes <ol style="list-style-type: none"> 1. Compare multiple solutions designed to slow or prevent wind or water from changing the shape of the land. 2. Develop a model to represent the shapes and kinds of land and bodies of water in an area. 3. Obtain information to identify where water is found on Earth and that it can be solid or liquid.
Engineering - Experiments - Extension Activities <ul style="list-style-type: none"> • Study the components of a compost and how to build one • Study the planets • Shadows
Crosscutting Concepts <ul style="list-style-type: none"> • Religion- Use the story of Jesus walking on water and trusting. The disciples were having a rough time out on the water when they saw Jesus. Moses walked out to Him and after learning to trust the storm stopped and all were safe. • ELA- Compare and contrast various weather conditions examples include: tornados, tsunami, rain, snow, mudslides, and avalanches • Math- Graph weather conditions and predict what weather will happen next • P.E.- Play Around the World by making it a running game. Do different balance beam activities by trusting others to get you across. • Social Studies- Make a poster about how to reduce everyday things. Recycle cans or put out a bird feeder. • Other- talk about the importance of recycling and pollution

ENGINEERING
Engineering Design
Faith supporting Reason <ul style="list-style-type: none"> • Everything God created is for a reason. He made it special. We are designed to be like him.
Catholics making contribution to the topic <ul style="list-style-type: none"> • Andre-Marie Ampere and Michael Faraday
Science outcomes <ol style="list-style-type: none"> 1. Ask questions, make observations, and gather information about a situation people want to change to define a simple problem that can be solved through the development of a new or improved object or tool. 2. Develop a simple sketch, drawing, or physical model to illustrate how the shape of an object helps it function as needed to solve a given problem. 3. Analyze data from tests of two objects designed to solve the same problem to compare the strengths and weaknesses of how each performs.
Engineering - Experiments - Extension Activities <ul style="list-style-type: none"> • Create and design an oven to cook marshmallows for smores (use pizza boxes, foil, plastic wrap, and newspaper with the sun's heat) • Use household items (popsicle sticks or clothespins) to design a boat or bridge that can hold a certain amount of weight
Crosscutting Concepts <ul style="list-style-type: none"> • Religion- Act out different problems and have the right way and the wrong way to solve the problem. Explain why one way worked and the other one did not. Ask the question what would God want you to do. • ELA- Write and describe what your oven and boat (from above) did {What worked well and what didn't} • Math- Measurements to make your boat and structure to hold the items. For the oven you could also check the temperature. • P.E.- Trust Walk – lead blind-folded partner around the gym allowing them to trust their partner that they will be led in the right direction. Raft – get from one mat to the other without touching the floor. If someone on the team touches the floor, they need to start over. Teachingideas.co.uk Jump the River – use two jumps to make the river and try to jump over the “river”. If a child touches the ground in between, they are out. • Social Studies- Wants and needs and goods and services. Look up the history of fire ovens. Simple machines to complex machines. • Other