

High School Earth and Space Science

Guidelines for Human Sexuality Education

Based on the understanding that human sexuality education is a right and responsibility of parents, teachers whose curricular material includes human sexuality content are obligated to work together with parents to ensure that parents know what is being taught to their children and how it is being covered.

If topics in High School Earth and Space Science address human sexuality education, please inform the parents of your students with the topic and timeline.

Please consult with your principal and/or pastor to determine the local directives on parental collaboration that are aligned with directives outlined in the May 4, 2011 letter from Bishop William Patrick Callahan. A copy of that letter can be found in the front pocket of this curriculum binder.

Standard A: Science Connections that reveal God’s creation

DIOCESAN REQUIREMENTS
CONCEPTS, SKILLS, & CATHOLIC FAITH CONNECTIONS
1. Identify the impact of human actions on our future environment on a global, national, regional, and local scale.
2. Predict the future consequences of the use of the earth’s energy sources (geothermal, hydroelectric, fossil fuels, nuclear, solar, wind).
3. Describe current theories of the origin of the Universe, including the Big Bang theory. Distinguish between the cause (God) and the process (scientific explanations) of creation and evolution.
4. Explain the design of the solar system.
5. Evaluate and debate the merits of space exploration.
6. Discuss current efforts to search for extraterrestrial life.

LOCAL LEVEL SCHOOL ELEMENTS					
Text Alignment	Quarter / Date Taught				
	1	2	3	4	Assessment

RELIGIOUS RESOURCES	COMMON CORE STANDARDS
<p>DRC: Catholic Social Teaching IV Second Tablet of the Law II B The Eighth Commandment - Truth as a common good</p> <p>DRC: Catholic Social Teaching IV Second Tablet of the Law II C The Tenth Commandment – We do not covet the goods of another</p> <p>www.usccb.org go to departments Environmental Justice Program</p>	<p>Earth and Space Science</p> <p>Core Idea 1: Humans are a small part of a vast Universe; planet Earth is part of the Solar System which is aprt of the Milky Way galaxy, which is one of hundreds of billions of galaxies in the Universe.</p> <p>A. The Universe B. Gravity, energy, and matter in the Universe C. Earth and the Solar System</p> <p>Core Idea 4: Human activities are constrained by and, in turn, affect all other processes at Earth’s surface.</p> <p>A. Natural hazards B. Natural resources C. Human impact on the Earth D. Global climate change</p>

DRC: Diocesan Religion Curriculum

CCC: Catechism of the Catholic Church

Standard B: The Nature of Science as created by God and discovered by man

DIOCESAN REQUIREMENTS	LOCAL LEVEL SCHOOL ELEMENTS					
CONCEPTS, SKILLS, & CATHOLIC FAITH CONNECTIONS	Text Alignment	Quarter / Date Taught				Assessment
		1	2	3	4	
1. Understand that although science can lead to new possibilities, the moral and ethical implications must be evaluated according to God’s law.						
2. Describe how knowledge of earth and space systems helps us better understand the natural world.						
3. Give examples of basic and applied research that has impacted our understanding of the Earth and the creation of predictive models (weather, oceanography).						
4. Understand how cultural views affect research and efforts to create an understanding of earth and space systems.						

RELIGIOUS RESOURCES	COMMON CORE STANDARDS
<p>DRC: Christian Morality IV Moral Judgment A, Conscience & Law. Conscience depends on the moral law</p> <p>DRC: Christian Morality IV Moral Judgment B, Components of Moral Choice. Components are the object, the intention and the circumstances</p> <p>DRC: Christian Morality IV Moral Judgment C, Proportional Goods and Evils. The end does not justify the means.</p> <p>CCC: 159 There is no discrepancy between faith and reason</p> <p>CCC: 340 Creatures (objects) exist in dependence on each other</p> <p>CCC: 2464 Misrepresenting the truth is forbidden</p> <p><i>Fides et Ratio</i> (Faith and Reason) – Pope John Paul II</p> <p>B: Matthew 16:1-3 Red sky in the morning, sailors take warning.</p>	<p>Earth and Space Science</p> <p>Core Idea 3: Earth’s surface continually changes from the cycling of water and rock driven by sunlight and gravity.</p> <ul style="list-style-type: none"> A. The roles of water in Earth’s surface processes B. Formation and alteration of rocks and landforms C. Weather and climate D. Biogeology <p>Core Idea 4: Human activities are constrained by and, in turn, affect all other processes at Earth’s surface.</p> <ul style="list-style-type: none"> A. Natural hazards B. Natural resources C. Human impact on the Earth D. Global climate change <p>Engineering and Technology</p> <p>Core Idea 2: Engineering design is a creative and iterative process for identifying and solving problems in the face of constraints.</p> <ul style="list-style-type: none"> A. Defining and researching technological problems B. Generating and evaluating solutions C. Optimizing and making tradeoffs

Standard C: Science Inquiry that reflects God’s created order

DIOCESAN REQUIREMENTS						LOCAL LEVEL SCHOOL ELEMENTS					
CONCEPTS, SKILLS, & CATHOLIC FAITH CONNECTIONS						Text Alignment	Quarter / Date Taught				
							1	2	3	4	Assessment
1. Formulate scientific questions based on current social issues, scientific literature, and observations of phenomena.											
2. Develop and articulate hypotheses based on theory and past experience.											
3. Recognize the best experimental approach to investigate a question (direct observation, controlled, computer modeling).											
4. Design experiments to test hypotheses that use responsible, ethical, and safe procedures.											
5. Use scientific tools and units of measurement competently and precisely.											
6. Collect, analyze, and present data through text, tables, and graphs.											
7. Draw conclusions from investigations and determine applications for further directions for research.											
8. Replace inaccurate models, explain, and cite evidence supporting new hypotheses.											
9. Respectfully critique own work and the work of others (classmates and published works) to evaluate scientific reasoning, experimental design and methods, and the validity of conclusions.											

RELIGIOUS RESOURCES	COMMON CORE STANDARDS
<p>DRC: Christian Morality IV Moral Judgment A Conscience & Law. Conscience depends on the moral law</p> <p>DRC: Christian Morality IV Moral Judgment B, Components of Moral Choice. Components are the object, the intention and the circumstances</p> <p>DRC: Christian Morality IV Moral Judgment C, Proportional Goods and Evils. The end does not justify the means.</p> <p>CCC: 159 There is no discrepancy between faith and reason</p> <p>CCC: 2464 Misrepresenting the truth is forbidden</p> <p><i>Fides et Ratio</i> (Faith and Reason) - John Paul II</p>	<p>Engineering and Technology</p> <p>Core Idea 2: Engineering design is a creative and iterative process for identifying and solving problems in the face of constraints.</p> <ul style="list-style-type: none"> A. Defining and researching technological problems B. Generating and evaluating solutions C. Optimizing and making tradeoffs <p>Core Idea 3: People are surrounded and supported by technological systems. Effectively using and improving these systems is essential for long-term survival and prosperity.</p> <ul style="list-style-type: none"> A. Identifying and modeling technological systems B. Life cycles and maintenance of technological systems C. Control and feedback

Grade: High School

Subject: Earth and Space Science

Standard D: Physical Science as created by God

DIOCESAN REQUIREMENTS
CONCEPTS, SKILLS, & CATHOLIC FAITH CONNECTIONS
1. Describe theories regarding the physical forces affecting the formation of the solar system (energy, chemistry, and physics).

LOCAL LEVEL SCHOOL ELEMENTS					
Text Alignment	Quarter / Date Taught				Assessment
	1	2	3	4	

RELIGIOUS RESOURCES

COMMON CORE STANDARDS
<p>Earth and Space Science Core Idea 1: Humans are a small part of a vast Universe; planet Earth is part of the Solar System which is aprt of the Milky Way galaxy, which is one of hundreds of billions of galaxies in the Universe.</p> <ul style="list-style-type: none"> A. The Universe B. Gravity, energy, and matter in the Universe C. Earth and the Solar System

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Standard E: Earth and Space Science as created by God

DIOCESAN REQUIREMENTS
CONCEPTS, SKILLS, & CATHOLIC FAITH CONNECTIONS
1. Explain theories regarding the origin and physical evolution of the Earth.
2. Describe internal and external energies that impact the Earth.
3. Explain geochemical cycles such as the carbon and water, and nitrogen cycles.
4. Describe the consequences of the use and overuse of the Earth's resources.

LOCAL LEVEL SCHOOL ELEMENTS					
Text Alignment	Quarter / Date Taught				
	1	2	3	4	Assessment

RELIGIOUS RESOURCES	COMMON CORE STANDARDS
<p>www.usccb.org click on departments Environmental Justice Program</p>	<p>Earth and Space Science Core Idea 2: Earth is a complex and dynamic 4.6 billion-year-old system of rock, water, air, and life. A. Continental drift, plate tectonics, and earth's internal heat B. Earth's materials C. Earth's history Core Idea 3: Earth's surface continually changes from the cycling of water and rock driven by sunlight and gravity. A. The roles of water in Earth's surface processes B. Formation and alteration of rocks and landforms C. Weather and climate D. Biogeology Core Idea 4: Human activities are constrained by and, in turn, affect all other processes at Earth's surface. A. Natural hazards B. Natural resources C. Human impact on the Earth D. Global climate change</p>

DRC: Diocesan Religion Curriculum

CCC: Catechism of the Catholic Church

Grade: High School

Subject: Earth and Space Science

Standard F: Life and Environmental Science as created by God

DIOCESAN REQUIREMENTS
CONCEPTS, SKILLS, & CATHOLIC FAITH CONNECTIONS
Not Applicable

LOCAL LEVEL SCHOOL ELEMENTS				
Text Alignment	Quarter / Date Taught			
	1	2	3	4

RELIGIOUS RESOURCES	COMMON CORE STANDARDS

DRC: Diocesan Religion Curriculum

CCC: Catechism of the Catholic Church

Standard G: Science Applications that reflect God’s goodness

DIOCESAN REQUIREMENTS	LOCAL LEVEL SCHOOL ELEMENTS				
CONCEPTS, SKILLS, & CATHOLIC FAITH CONNECTIONS	Text Alignment		Quarter / Date Taught		
	1	2	3	4	Assessment
1. Demonstrate an understanding of applications of earth and space science to real-life issues. 2. Analyze the impact (cost, benefit, effects) of past and current technological innovations on the Earth and the environment. 3. Evaluate data (considering sources of information), validity, and short & long term implications of solutions to a problem and advocate for the most reasonable solution(s). 4. Demonstrate awareness and understanding of current developments in the study of the Earth and space as well as related fields. 5. Explore careers in science and technology.					

RELIGIOUS RESOURCES	COMMON CORE STANDARDS
<p>www.usccb.org click on departments pick appropriate department</p>	<p>Earth and Space Science Core Idea 4: Human activities are constrained by and, in turn, affect all other processes at Earth’s surface.</p> <ul style="list-style-type: none"> A. Natural hazards B. Natural resources C. Human impact on the Earth D. Global climate change <p>Engineering and Technology Core Idea 2: Engineering design is a creative and iterative process for identifying and solving problems in the face of constraints.</p> <ul style="list-style-type: none"> A. Defining and researching technological problems B. Generating and evaluating solutions C. Optimizing and making tradeoffs <p>Core Idea 4: In today’s modern world everyone makes technological decisions that affect or are affected by technology on a daily basis. Consequently, it is essential for all citizens to understand the risks and responsibilities that accompany such decisions.</p> <ul style="list-style-type: none"> A. Interactions of technology and society B. Interactions of technology and environment C. Analyzing issues involving technology and society

Standard H: Personal, Social, and Moral Aspects of Science

DIOCESAN REQUIREMENTS
CONCEPTS, SKILLS, & CATHOLIC FAITH CONNECTIONS
<ol style="list-style-type: none"> 1. Show how science influences personal and social perspectives. 2. Show how non-scientific perspectives (social values, ethics, beliefs, and timeframes) influence policy decisions related to science. 3. Investigate current proposals or plans in resource management, waste disposal, and recycling and evaluate the costs, benefits, risks, and consequences to the environment and local communities. 4. Propose and evaluate (using models and/or explanations) scientific and technological solutions to a problem. 5. Discuss and debate the merits of space exploration, comparing the costs and the benefits. 6. Recognize and explore moral implications and issues in scientific inquiry and technology. 7. Promote God’s commandments as expressed through Catholic virtues and moral teaching – especially respect for life, the sanctity of human life, and stewardship. 8. Contact politicians to advocate for positions that promote and protect the welfare of mankind and creation.

LOCAL LEVEL SCHOOL ELEMENTS					
Text Alignment	Quarter / Date Taught				
	1	2	3	4	Assessment

RELIGIOUS RESOURCES
<p>www.usccb.org click on departments</p> <ul style="list-style-type: none"> • Catholic Campaign for Human Development • Environmental Justice Program • Science and Human Values • Justice, Peace, and Human Development <p>National Catholic Bioethics Center http://www.ncbcenter.org/NetCommunity// Ethics</p>

COMMON CORE STANDARDS
<p>Engineering and Technology Core Idea 2: Engineering design is a creative and iterative process for identifying and solving problems in the face of constraints.</p> <ol style="list-style-type: none"> A. Defining and researching technological problems B. Generating and evaluating solutions C. Optimizing and making tradeoffs <p>Core Idea 3: People are surrounded and supported by technological systems. Effectively using and improving these systems is essential for long-term survival and prosperity.</p> <ol style="list-style-type: none"> A. Identifying and modeling technological systems B. Life cycles and maintenance of technological systems C. Control and feedback <p>Core Idea 4: In today’s modern world everyone makes technological decisions that affect or are affected by technology on a daily basis. Consequently, it is essential for all citizens to understand the risks and responsibilities that accompany such decisions.</p> <ol style="list-style-type: none"> A. Interactions of technology and society B. Interactions of technology and environment C. Analyzing issues involving technology and society

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