

Diocese of Jefferson City Science Curriculum Guidelines
Grades PK-8
Updated June 2022
(Follow Grade Level Links Below to Access Each Strand)

“You are worthy, our Lord and God, to receive glory and honor and power, for you made the whole universe; by your will, when it did not exist, it was created.”

Revelations 4:11

The Diocese of Jefferson City Educational Office is pleased to present new curriculum standards outlining the academic expectations in the subject of Science. Curriculum standards express the skills and content students are expected to demonstrate within courses and across grade levels.. When a student has successfully completed a course or grade level, he or she will have demonstrated competence in the knowledge, skills, or attitudes required of that course and grade level. The goal is to provide a way for educators to focus on what they must teach and assess. Not all topics which will be covered in a grade level are listed within the document. In order for teachers to see the broader picture, they will need to look at the previous grade level objectives and the future grade level objectives. They also will complete work “unpacking the standard” for their grade level objectives and consider what skills and knowledge are necessary for students to be able to successfully master these standards independently. The curriculum works in a spiral manner with topics being covered across K-2, and again at a deeper level in 3-5, and again in 6-8. This is so that as they develop and mature in intelligence and in how they practice the faith, they grow in a deeper understanding of the objectives listed.

These curriculum standards have been developed in order to express the Catholic identity within our curriculum and to articulate the grade level expectations of our diocesan schools. It is our goal from a Catholic perspective, that in admiration of the greatness of God, the Creator (CCC 283) and in recognition of God freely creating all from nothing (CCC 296), students will:

- ❖ Use inquiry to develop an understanding of the sciences.
- ❖ Explain how creation is an outward sign of God’s love and goodness and therefore, is sacramental in nature.
- ❖ Express care and concern for all of God’s creation, including all stages of life for each human person as an image and likeness of God, as well as through environmental stewardship.
- ❖ Describe how science answers “how” things physically exist, while our faith in God provides answers to our “why” questions.
- ❖ Share how the unity of faith and reason allows us to know there exists no contradiction between the God of nature and the God of faith.
- ❖ Explore the responsibility of using science and technology for the common good of humanity and all of God’s creation.
- ❖ Gather information about the processes of conservation, preservation, overconsumption, and environmental stewardship in relation to humans caring for that which God has given to sustain us.
- ❖ Describe how science and technology should always be at the service of humanity and, ultimately, to God, and in harmony with His purpose.
- ❖ Display a sense of wonder and delight about the natural universe, and share how the beauty and goodness of God is reflected in nature.

Grade Levels	Strand	Topics Covered and Essential Questions
PK-K K-2 3-5 6th	Earth Science	Space: <i>What is the universe, and what is Earth's place in it?</i> History of the Earth: <i>How do people reconstruct and date events in Earth's planetary history?</i> Earth's Interior Systems: <i>How do Earth's major systems interact?</i> Earth's Surface Systems: <i>How do the properties and movements of water shape Earth's surface and affect its systems?</i> Weather and Climate: <i>What regulates weather and climate?</i> Human Impact: <i>How do the Earth's surface processes and human activities affect each other?</i>
PK-K K-2 3-5 7th	Life Science	Structures: <i>How do the structures of organisms enable life's functions?</i> Functions: <i>How do organisms grow and develop? How do organisms obtain and use matter and energy needed to live and grow?</i> Interactions: <i>How and why do organisms interact with the living and nonliving environments to obtain matter and energy? How are characteristics of one generation passed to the next?</i>
PK-K K-2 3-5 8th	Physical Science	Force and Motions: <i>How can one explain and predict interactions between objects and within systems of objects?</i> Structure and Properties of Matter: <i>How can one explain the structure, properties and interactions of matter?</i> Energy: <i>How is energy transferred and conserved?</i> Waves and Electromagnetic Radiation: <i>How are waves used to transfer energy and information?</i>
PK-K K-2 3-5 6-8	Health	Body Systems: <i>How do the structures of our bodies enable life's functions?</i> Nutrition: <i>What do I need to know to make good decisions to stay healthy?</i> Development: <i>How do our bodies grow and develop?</i> Injury, Illness, and Disease: <i>What can I do to avoid or reduce health risks?</i> Community: <i>How and where can I locate health resources?</i> Social Emotional: <i>What can I do to prevent and resolve conflict? How can communication enhance my personal health and develop positive relationships?</i>
PK-K K-2 3-5	Inquiry	<i>What tools are needed and how do I use them to obtain information?</i> <i>What is the process for developing potential design solutions?</i> <i>What are the criteria and constraints of a successful solution?</i>
PK-K K-2 3-5 6-8	Engineering and Technology	<i>How do engineers solve a problem?</i> <i>How are engineering, technology, science, and society interconnected?</i>