

SCIENCE

Fourth Grade



Fourth Grade Science Curriculum Overview

The [Indiana Academic Standards](#) define what students should know, understand, and be able to do at grade level beginning in kindergarten and progressing through grade twelve. These standards serve as the foundation to our curriculum in Noblesville Schools but are not a curriculum on their own. The Indiana Academic Standards are supported through grade-level curriculum maps and a selection of curriculum materials to support these maps. These curriculum maps and materials are aligned to the Indiana Academic standards while also meeting the needs of all learners. Therefore, the Noblesville Schools' curriculum is constantly undergoing periodic and systematic analysis and revision.

Indiana academic standards for science are organized around four content areas- physical science, life science, earth and space science and engineering. The content area standards and the types of learning experiences they provide to students in fourth grade are described below.

In fourth grade, science is explored through analyzing evidence, constructing arguments and developing and implementing solutions to problems. Students will also learn through the scientific process and the design process. Engineering standards are explored throughout the school year as a part of the Project Lead the Way curriculum and integrated into other science units.

On the pages that follow, age-appropriate concepts are listed for each standard. Skills for thinking, inquiry and participation are integrated throughout.

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The [Grade 4 Indiana Academic Standards for Science](#) serve as the foundation to our curriculum for science instruction in Noblesville Schools. These standards are supported through grade-level curriculum maps and materials for all learners.

Units of Study

Table 1: Fourth Grade Science Units of Study

Science Units of Study	Timeframe	Learning Outcomes Learners will...	Reflective Questions that may be included within the unit:	Lesson Examples
Unit 1: Life Science	Quarter 1	<ol style="list-style-type: none"> 1. Observe, analyze and interpret the similarities and differences in traits of offspring and parents. 2. Use evidence to support an explanation about how changes in environments affect plants' and animals' survival, reproduction, movement or life expectancy. 3. Construct an argument using evidence about plants and animals internal and external structures that function to support survival, growth, behavior, and reproduction in different ecosystems. 	<ol style="list-style-type: none"> 1. How do the offspring of plants and animals have similarities and differences from their parents, and how do those variations allow offspring to reproduce and survive? 2. How can we construct an argument that internal and external structures support survival, growth, behavior, and reproduction of plants and animals? 3. How do changes in the environment affect the survival and reproduction, movement, or the death of plants and animals? 	Coming 2022-23 school year

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Science Units of Study	Timeframe	Learning Outcomes Learners will...	Reflective Questions that may be included within the unit:	Lesson Examples
Unit 2: Physical Science	Quarter 2	<ol style="list-style-type: none"> 1. Investigate how forces have an effect on motion within different transportation systems. 2. Investigating and demonstrating how simple machines work together to complete tasks. 3. Describe various forms of energy and explain how energy is being transferred and converted from one type to another. 4. Observe and analyze data about speed and energy. 	<ol style="list-style-type: none"> 1. How scientists can plan, conduct, and investigate the effects of forces on an object's motion 2. How machines allow humans to perform tasks easier and more efficiently 3. How energy is generated and/or converted from one form to another 4. How scientists can investigate and determine the relationship between an object's speed and energy? 	Coming 2022 - 2023 school year
Unit 3: Earth and Space Science	Quarter 3	<ol style="list-style-type: none"> 1. Investigate the patterns of the moon and the effects on our daily lives. 2. Research and combine information about the effects of natural resources and human impact on the environment. 3. Develop and implement a plan to reduce the impact of humans on the environment and the environment on humans. 4. Describe geological forces and how they change the Earth suddenly and over time. 	<ol style="list-style-type: none"> 1. How does the moon affect the lives of people on Earth? 2. How does using natural resources affect our lives and environment? 3. How do geological forces change the shape of our land suddenly as well as over time? 4. How do humans and the environment have an effect on each other? 	Coming 2022 - 2023 school year

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Science Units of Study	Timeframe	Learning Outcomes Learners will...	Reflective Questions that may be included within the unit:	Lesson Examples
Engineering	Throughout the year	<ol style="list-style-type: none"> 1. Identify a real-world problem 2. Recognize an appropriate tool to solve a problem. 3. Understand forces affect the speed and movement of an object in motion 	<ol style="list-style-type: none"> 1. What problems do people face daily? 2. What tools can be used to collect data and solve problems? 3. What is the relationship between force and motion? 4. How does applying force affect the way an object moves? 	Coming 2022 - 2023 school year