

Science

Kindergarten



Kindergarten 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.

The Indiana Academic Standards for Grades K-12 Science are based on *A Framework for K-12 Science Education* (NRC, 2012) and the Next Generation Science Standards (NGSS Lead States, 2013). The K-12 Science Indiana Academic Standards outline the knowledge, science, and engineering practices that all students should learn by the end of high school. The standards are three-dimensional because each student performance expectation engages students at the nexus of the following three dimensions:

- **Dimension 1** describes scientific and engineering practices.
- **Dimension 2** describes crosscutting concepts, overarching science concepts that apply across science disciplines.
- **Dimension 3** describes core ideas in the science disciplines.

The content area standards and the types of learning experiences they provide to students in kindergarten are described below. These kindergarten standards are supported in Noblesville Schools through curriculum materials for science instruction, including *Inspire Science by McGraw Hill*.



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Inspire Science

Inspire Science by McGraw Hill serves as the primary core curriculum material for all kindergarten learners and provides alignment with the Indiana Academic Standards for Kindergarten Science.

Table 1: Kindergarten Inspire Science

Science Unit and Module(s) Pacing Varies By Unit	Science Unit Learning Outcomes Learners will...	Science Unit Big Idea and Essential Questions
Unit 1: Living Things	Learn about the needs of plants and animals and how that affects their habitat. Discover patterns that can be used to help them classify things as living or nonliving. Analyze data and construct explanations about patterns of what plants, animals, and humans need to survive. Construct explanations about the patterns of where plants live and their needs.	(Big Idea) How do plants and animals live and grow in different places? How can you tell if something is living? What do plants and animals need? What do plants and animals need to live and grow?

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Science Unit and Module(s) Pacing Varies By Unit	Science Unit Learning Outcomes Learners will...	Science Unit Big Idea and Essential Questions
Unit 2: Our Changing World	Module 1: Ask questions and obtain information about how plants, animals, and humans change their environment. Argue from evidence to explain how plants can change their environments to get what they need. Argue from evidence to explain how animals can change their environments to get what they need. Argue from evidence to explain how people can change their environments to get what they need. Module 2: Ask questions and communicate information about the impact humans have on resources. Identify and engage in discussions about natural resources and how their uses affect the environment. Communicate solutions that will reduce the effect humans have on the lands, water, air, and/or other living things in the local environment.	Module 1: (Big Idea) How do living things cause changes to their environment? How do plants cause changes to their environment? How do animals cause changes to their environment? How do people cause changes to their environment? Module 2: (Big Idea) How can people help protect land, air, and water? How do we use natural resources? How can we help save the environment?

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Science Unit and Module(s) Pacing Varies By Unit	Science Unit Learning Outcomes Learners will...	Science Unit Big Idea and Essential Questions
Unit 3: Weather and the Sun	Module 1: Learn and make observations about weather and weather patterns, forecast weather and learn about severe weather conditions and how to prepare and respond to them. Analyze and interpret data to describe and measure weather patterns. Analyze and interpret data to identify weather patterns over time. Obtain information and use patterns to make predictions about the weather. Ask questions and obtain and communicate information on ways to identify, prepare for, and respond to severe weather. Module 2: Determine how sunlight affects Earth's surface and how to reduce the warming effect of sunlight. Carry out investigations to explain the effect of sunlight on Earth's surface. Construct explanations and design solutions to reduce the warming effect of sunlight.	Module 1: (Big Idea) What is the weather like today? What do I need to know about weather to stay safe? How do we measure and describe weather? What weather patterns can we observe? How do patterns help us predict weather? How can we prepare for severe weather? Module 2: (Big Idea) What does sun do? How does the sun affect Earth's surface? How can you stay safe from the sun?

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Science Unit and Module(s) Pacing Varies By Unit	Science Unit Learning Outcomes Learners will...	Science Unit Big Idea and Essential Questions
Unit 4: Make Things Move	Develop an understanding of force and motion. Conduct investigations and observe the effects of different strengths of pushes and pulls on the motion of an object. Carry out investigations to discover what causes objects to change direction and speed. Analyze and interpret data to answer questions about what happens when objects collide.	(Big Idea) How do objects move? What happens to an object that is pushed or pulled? How do we change an object's direction or speed? What happens when objects touch or collide?