

Science

Second Grade



Second 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.

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 second grade are described below. These second grade standards are supported in Noblesville Schools through curriculum materials for science instruction, including *Inspire Science by McGraw Hill*.



Science

Second Grade

Inspire Science

Inspire Science by McGraw Hill serves as the primary core curriculum material for all second grade learners and provides alignment with the Indiana Academic Standards for Second Grade Science.

Table 1: Second Grade 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: Land and Water	Use models to learn about land and water on Earth. Develop and use models to observe patterns in where land and water are located. Develop and use models to observe patterns in the land found on Earth. Obtain, evaluate, and communicate information to observe patterns in where water is found on Earth.	(Big Idea) How can we describe the shape of land and water on Earth? How can we describe the land around us? How can we describe the shapes of land on Earth? Where can we find water on Earth and is it solid or liquid?

Science

Second Grade



Science Unit and Module(s) Pacing Varies By Unit	Science Unit Learning Outcomes Learners will...	Science Unit Big Idea and Essential Questions
Unit 2: Properties of Materials	Module 1: Investigate and analyze materials to determine which is best for an intended purpose. Plan and conduct investigations to observe patterns in how materials can be described and classified by their observable properties. Test, analyze, and retest materials to determine which materials are best for their intended purpose. Module 2: Investigate changes that can happen to materials. Construct explanations about how an object made of small pieces can break into pieces and be made into a new object. Construct an argument from evidence that some changes caused by heating or cooling materials can be reversed and some cannot.	Module 1: (Big Idea) How do the properties of materials determine how people use them? What are the different ways we can sort and classify materials? How do people use materials? Module 2: (Big Idea) What changes can happen to materials? How can pieces be arranged in different ways? How can heating and cooling change materials?

Science

Second Grade



Science Unit and Module(s) Pacing Varies By Unit	Science Unit Learning Outcomes Learners will...	Science Unit Big Idea and Essential Questions
Unit 3: Earth’s Changing Landscape	Learn about changes to Earth’s landscape and design and compare ways to reduce wind and water erosion. Begin to make observations and construct explanations for changes to Earth’s landscape that can happen very slowly. Begin to make observations and construct explanations for changes to Earth’s landscape that can happen quickly. Develop and use models to compare multiple solutions to slow or prevent changes to Earth’s landscape.	(Big Idea) How does Earth’s landscape change? How can wind and water change Earth’s landscape? How can Earth’s landscape change quickly? How can people help to slow or prevent changes to Earth’s landscape?

Science

Second Grade



Science Unit and Module(s) Pacing Varies By Unit	Science Unit Learning Outcomes Learners will...	Science Unit Big Idea and Essential Questions
Unit 4: Living Things and Habitats	Module 1: Make observations to learn about the needs of plants and how plants help to make more plants. Plan and conduct investigations to determine if plants need sunlight and water to grow. Develop and use models to show that the structure of plant and animal parts aid in pollination and seed dispersal. Module 2: Learn about the diversity of life in local, land, and water habitats. Plan and carry out investigations to make observations of plants and animals to compare the diversity of life in the local habitat. Plan and carry out investigations to make observations of plants and animals to compare the diversity of life in land habitats. Plan and carry out investigations to make observations of plants and animals to compare the diversity of life in water habitats.	Module 1: (Big Idea) What do plants need from their habitats? What do plants need to grow? What do animals do to help pollinate plants and disperse seeds? Module 2: (Big Idea) What do living things need to survive in their habitat? What kinds of living things are found near us? What living things can be found in a land habitat? What plants and animals live in a water habitat?