INDIANA DEPARTMENT of EDUCATION

2024 INDIANA CONTENT CONNECTORS

SCIENCE

KINDERGARTEN

in.gov/doe

Indiana Content Connectors Context and Purpose

Introduction

The Indiana Content Connectors for Kindergarten Science are the result of a process designed to identify, evaluate, synthesize, and create high-quality learning expectations for Indiana students with significant cognitive disabilities.

The Indiana Department of Education (IDOE) convened stakeholder committees to review proposed revisions to Indiana's Alternative Standards, known as content connectors. The content connectors are designed to measure the knowledge and skills of students with the most significant cognitive disabilities and are assessed with the state's alternate assessment. The content connectors are designed to ensure that all Indiana students in this population are prepared with essential knowledge and skills needed to access employment, enrollment, or enlistment leading to service.

What are the Content Connectors and how should they be used?

The Indiana Content Connectors are designed to help educators, parents, students, and community members understand the necessary content for each grade level, and within each content area domain, to access employment, enrollment, or enlistment leading to service. These content connectors should form the basis for strong core instruction for all students at each grade level and content area. The content connectors identify the minimum academic content or skills to which Indiana students need access in order to be prepared for success after graduation, but they are not an exhaustive list.

While the Indiana Content Connectors establish key expectations for knowledge and skills and should be used as the basis for curriculum, the content connectors by themselves do not constitute a curriculum. It is the responsibility of the local school corporation to select and formally adopt curricular tools, including textbooks and any other supplementary materials, that align with Indiana Content Connectors. Additionally, corporation and school leaders should consider the appropriate instructional sequence of the content connectors as well as the length of time needed to teach each one. Every content connector has a unique place in the continuum of learning, but each content connector will not require the same amount of time and attention. A deep understanding of the vertical articulation of the standards will enable educators to make the best instructional decisions. These content connectors must also be complemented by robust, evidence-based instructional practices to support overall student development. By utilizing strategic and intentional instructional practices, other areas such as STEM and employability skills can be integrated with the content connectors.

Acknowledgments

IDOE appreciates the time, dedication, and expertise offered by Indiana's K-12 general and special educators, higher education professors, representatives from business and industry, families, and other stakeholders who contributed to the development of the Indiana Content Connectors. We wish to specially acknowledge the committee members, as well as participants in the public comment period, who dedicated many hours to the review and evaluation of these content connectors designed to prepare Indiana students for success after graduation.

Kindergarten Science

Standards and content connectors identified as essential for mastery by the end of the grade level are indicated with gray shading and an "E."

Indiana Academic Standards	Content Connectors
Motion and Stability: Forces and Interactions	
K-PS2-1: Motion and Stability: Forces and Interactions Students who demonstrate understanding can: Plan and conduct an investigation to compare the effects of different strengths or different directions of pushes and pulls on the motion of an object. [Clarification Statement: Examples of pushes or pulls could include a string attached to an object being pulled, a person pushing an object, a person stopping a rolling ball, and two objects colliding and pushing on each other.]	**K-PS2-1a:** Conduct an investigation to identify the effect caused by different strengths or directions of pushes or pulls on the motion of an object.
K-PS2-2: Motion and Stability: Forces and Interactions Students who demonstrate understanding can: Analyze data to determine if a design solution works as intended to change the speed or direction of an object with a push or a pull. [Clarification Statement: Examples of problems requiring a solution could include having a marble or other object move a certain distance, follow a particular path, and knock down other objects. Examples of solutions could include tools such as a ramp to increase the speed of the object and a structure that would cause an object such as a marble or ball to turn.]	**K-PS2-2a:** Analyze data to determine if a design solution causes the intended change in speed or direction of motion of an object.

Energy	
K-PS3-1: Energy Students who demonstrate understanding can: Make observations to determine the effect of sunlight on Earth's surface. [Clarification Statement: Examples of Earth's surface could include sand, soil, rocks, and water.] (E)	**K-PS3-1a:** Make observations to determine how sunlight affects Earth's surface. (E)
K-PS3-2: Energy Students who demonstrate understanding can: Use tools and materials provided to design and build a structure that will reduce the warming effect of sunlight on an area. [Clarification Statement: Examples of structures could include umbrellas, canopies, and tents that minimize the warming effect of the sun.]	**K-PS3-2a:** Use tools and materials to design and/or build a structure (e.g., umbrella, canopy, tent) that can reduce warming caused by the sun.
From Molecules to Organisms: Structures and Processes	
K-LS1-1: From Molecules to Organisms: Structures and Processes Students who demonstrate understanding can: Use observations to describe patterns of what plants and animals (including humans) need to survive. [Clarification Statement: Examples of patterns could include that animals need to take in food but plants do not; the different kinds of food needed by different types of animals; the requirement of plants to have light; and, that all living things need water.] (E)	**K-LS1-1a:** Compare and contrast what plants and animals, including humans, need to survive. (E)

Earth's Systems	
K-ESS2-1: Earth's Systems Students who demonstrate understanding can: Use and share observations of local weather conditions to describe patterns over time. [Clarification Statement: Examples of qualitative observations could include descriptions of the weather (such as sunny, cloudy, rainy, and warm); examples of quantitative observations could include numbers of sunny, windy, and rainy days in a month. Examples of patterns could include that it is usually cooler in the morning than in the afternoon and the number of sunny days versus cloudy days in different months.] (E)	**K-ESS2-1a:** Use observations of local weather conditions to describe weather patterns over time (e.g., day, week, month). (E)
K-ESS2-2: Earth's Systems Students who demonstrate understanding can: Construct an argument supported by evidence for how plants and animals (including humans) can change the environment to meet their needs. [Clarification Statement: Examples of plants and animals changing their environment could include a squirrel digging in the ground to hide its food and tree roots can break concrete.]	**K-ESS2-2a:** Identify evidence to support the claim that plants and animals, including humans, can change the environment to meet their needs. [Clarification Statement: Examples of plants and animals changing their environment could include a squirrel digging in the ground to hide its food and tree roots can break concrete.]
Earth and Human Activity	
K-ESS3-1: Earth and Human Activity Students who demonstrate understanding can: Use a model to represent the relationship between the needs of different plants and animals (including humans) and the places they live. [Clarification Statement: Examples of relationships could include that deer eat buds and leaves; therefore, they usually live in forested areas; and grasses need sunlight so they often grow in meadows. Plants, animals, and their surroundings make up a system.]	**K-ESS3-1a:** Use a model to match the needs of different animals (including humans) and plants to the places they live.

K-ESS3-2: Earth and Human Activity Students who demonstrate understanding can: Ask questions to obtain information about the purpose of weather forecasting to prepare for, and respond to, severe weather. [Clarification Statement: Emphasis is on local forms of severe weather.] (E)	**K-ESS3-2a:** Ask questions and describe examples of how weather forecasting can help people prepare for, and respond to, severe weather. (E)
K-ESS3-3: Earth and Human Activity Students who demonstrate understanding can: Communicate solutions that will reduce the impact of humans on the land, water, air, and/or other living things in the local environment. [Clarification Statement: Examples of human impact on the land could include cutting trees to produce paper and using resources to produce bottles. Examples of solutions could include reusing paper and recycling cans and bottles.]	**K-ESS3-3a:** Identify ways that people can reduce their impact on the land, water, air, and/or other living things in the local environment.
Engineering Design	
K-2-ETS1-1: Engineering Design Students who demonstrate understanding can: Ask questions, make observations, and gather information about a situation people want to change to define a simple problem that can be solved through the development of a new or improved object or tool.	**K-ETS1-1a:** Make observations to define a simple problem that can be solved through the development of a new or improved object or tool.
K-2-ETS1-2: Engineering Design Students who demonstrate understanding can: Develop a simple sketch, drawing, or physical model to illustrate how the shape of an object helps it function as needed to solve a given problem.	**K-2-ETS1-2a:** Use simple sketches, drawings, or physical models of an object to identify the relationship between the shape of the object and how it functions to solve a problem.

K-2-ETS1-3: Engineering Design Students who demonstrate understanding can: Analyze data from tests of two objects designed to solve the same problem to compare the strengths and weaknesses of how each performs.	**K-2-ETS1-3a:** Compare the strengths and weaknesses of two objects designed to solve the same problem.