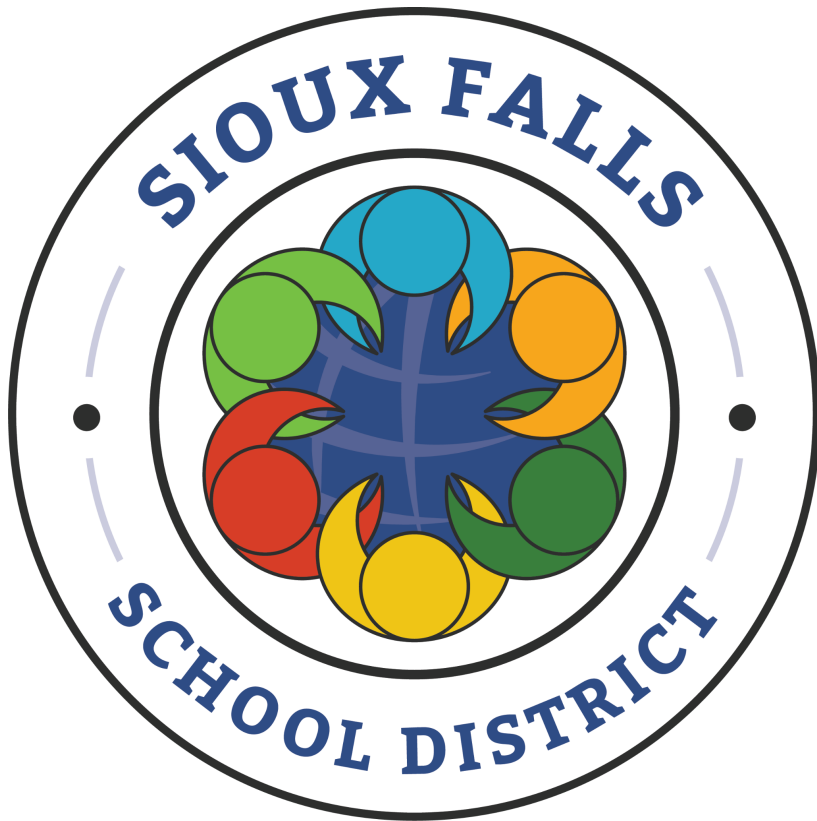




Sioux Falls School District

Curriculum Guide

Second Grade Science

August 2023

Vision, Mission & Goals

Course Description:

Amplify Science is a curriculum that blends hands-on investigations, literacy-rich activities, and interactive digital tools to empower students to think, read, write, and argue like real scientists and engineers. Each unit of Amplify Science engages students in a relevant, real-world problem where they investigate scientific phenomena, engage in collaboration and discussion, and develop models or explanations in order to arrive at solutions.

In using this standards-based program, students engage with science and engineering practices, disciplinary core ideas, and utilize and apply crosscutting concepts in multiple modalities across the phenomena anchored lessons.



COURSE AT A GLANCE - Second Grade Science

Unit 1: Plant and Animal Relationships

What is the connection between chalta fruit, elephants, and droppings? Students find out as they investigate a mystery that really occurred in a broadleaf forest habitat in northeastern India. Earth is composed of a vast array of complex habitats, each including a great diversity of plants and animals that interact in a myriad of ways. Like animals, plants are living things with particular needs, but without the ability to move on their own, how can plants get to places where those needs can be met? Many plants depend on animals to disperse their seeds to new places in their habitats where they are able to get the water and sunlight that they need to grow. In the *Plant and Animal Relationships* unit, students dive deep into how plants depend on animals in their habitats. Students assume the role of plant scientists reporting to the lead scientist at the Bengal Tiger Reserve, who has tasked students with explaining the unit's anchor phenomenon of why no new chalta trees are growing there. Motivated to figure out the cause of this real-world mystery, students investigate the problem, and then pursue a chain of reasoning that takes them from considering how plants get what they need to grow to understanding how seeds depend on animals for dispersal. Along with firsthand experiences, students read informational texts, focus on how to plan and carry out investigations about plant needs, and engage in student-to-student discussions as they come to understand some challenging life science concepts. Students use their newfound understanding of plant needs and plant-animal relationships in a habitat to explain what chalta seeds need to grow into full-grown trees and why no new chalta trees are growing in the Bengal Tiger Reserve.

Unit 2: Properties of Materials

How can you design a mixture for a certain purpose? For centuries, humans have undertaken this challenge. From the creation of medicines, paints, and building materials, to the development of cleaning products, adhesives, and foods, mixtures have proven to be essential to life as we know it. By mixing ingredients together, it's possible to create a mixture that takes on some of the properties of its ingredients. In the *Properties of Materials* unit, students take on the role of glue engineers and use engineering design practices to create a glue for use at their school, which serves as the design problem for the unit. They conduct hands-on investigations to observe properties of a variety of possible glue ingredients and learn how certain materials respond to heating and cooling; they engage in digital card sorts to apply their understanding of how properties of ingredients affect properties of mixtures; and they search for useful information about each ingredient in the unit's reference book. Over the course of the unit, students conduct tests that yield quantifiable results, graph their data, analyze and interpret results, and then use that evidence to repeatedly improve the design of a series of glue mixtures. By the end of the unit, students are able to speak knowledgeably about their choices and argue for how a particular glue mixture best meets their design goals, with evidence from a variety of sources.

Unit 3: Changing Landforms

Why is the edge of the ocean cliff closer to the flagpole than it used to be? In the *Changing Landforms: The Disappearing Cliff* unit, students use models to investigate how wind and water can cause changes to landforms. They learn that landforms made of solid rock undergo small-scale changes, and that over time, these changes add up to big changes. The unit begins with an introduction to changes to the cliffs by Oceanside Recreation Center, which serves as the anchor phenomenon for the unit. A nearby cliff has collapsed, and historical information shows that where the recreation center is situated appears to be receding. Students take on the role of geologists in order to help the Oceanside Recreation Center Director understand what is happening to the recreation center's cliff, and decide whether the center needs to be closed immediately. Exploration and investigation of models (through both physical models and student-made diagrams) allow students to generate and explore questions about wind and water changing landforms. Books introduce students to important concepts about different types of landforms and the process of erosion, and a digital modeling tool allows students to make sense of these concepts throughout the unit. At the end of the unit, students consider a new anchor phenomenon to explain why the nearby cliff eroded overnight and use this information to discuss whether the same thing could happen to the recreation center's cliff.

[South Dakota State Science Standards](#)