

SWALLOW SCHOOL DISTRICT CURRICULUM GUIDE

Curriculum Area: Science

Course Length: Full Year

Grade: 1st Grade

Date Last Approved: March 15, 2018; **Reviewed:** Spring 2021

Stage 1: Desired Results

Course Description and Purpose:

In first grade science there are four units. In the first unit, Sound and Light, students will study how sound and light can be used to communicate over long distances. In the Animated Storytelling unit, students will learn how to write instructions for a computer to follow and create their own animated story. In the Animal Adaptations unit, students will identify the unique adaptations animals have for survival in various environments. In the Plants and Animals unit, students will study animal habitats and learn how to care for and grow different types of plants.

Enduring Understanding(s):

1. Vibrating materials make sound, and sound can make materials vibrate.
2. Objects can be seen only if they reflect light or give off their own light.
3. People control computers by giving the computer instructions.
4. Computers follow directions exactly as directed, so instructions must be given step by step.
5. Living organisms have special structures and behave in certain ways to help them survive in their environment.
6. The design process is a step by step method used to guide people in developing solutions to problems.

Essential Question(s):

1. What are the causes and effects of vibration?
2. What is the value of a light source?
3. How do I write a set of statements that will provide the computer step by step directions for displaying a story?
4. How do plants and animals adapt to their environments?
5. How do plants' and animals' needs impact their growth and survival?

Learning Targets:

1. Students can apply the scientific process to evaluate investigations or the design process to create design solutions to solve a problem. (Skill/Product)
2. Students can organize and communicate information. (Skill)
3. Students can develop and interpret models. (Skill/Product)
4. Students can support a claim with evidence. (Skill/Product/Reasoning)

Stage 2: Learning Plan

I. Sound and Light

- A. Sound Waves and Vibration
- B. Light Waves
- C. Light and Sound Waves for Communication

Standards Referenced:

Next Generation Science Standards:

1-PS4-1, 1-PS4-2, 1-PS4-3, 1-PS4-4, K-2-ETS1-1, K-2-ETS1-2, K-2-ETS1-3

Learning Targets Addressed: 1, 2, 3, 4, 6

Key Resources Used:

- FOSS
- Launch

Assessment Map:

Type	Level	Assessment Detail
Practice	Knowledge	<ul style="list-style-type: none">• Conduct investigations to determine how vibrating matter can make sound.• Conduct investigations to determine how light can be used to create shadows.
Formative	Skills/ Reasoning	<ul style="list-style-type: none">• Demonstrate how changes in pitch and volume are caused.• Demonstrate the effect of placing objects made with different materials in the path of a beam of light.
Summative	Product	<ul style="list-style-type: none">• Create a model using sound or light to communicate over a distance.

II. Animated Storytelling

- A. Parts of a Computer Program
- B. Computer Program Writing
- C. Animated Stories

Standards Referenced:

Computer Science Standards:

1A-AP-10, 1A-AP-11, 1A-AP-12, 1A-AP-14, 1A-AP-15

Learning Targets Addressed: 2, 5

Key Resources Used:

- Launch

Assessment Map:

Type	Level	Assessment Detail
Practice	Knowledge	<ul style="list-style-type: none">• Organize a program that successfully navigates a person through a game board maze.
Formative	Skills/ Reasoning	<ul style="list-style-type: none">• Program characters to move on the screen to visually represent the programmer's instructions.• Build a successful animation to represent one scene from a story.
Summative	Product	<ul style="list-style-type: none">• Create a working animation that has at least two main characters and two different pages.

III. Animal Adaptations

- A. Adaptations for Protection
- B Adaptations for Movement
- C. Adaptations for Food
- C. Adaptations Needed in Different Environments

Standards Referenced:

Next Generation Science Standards:

1-LS1-1, LS1.A, LS1.B D, K-2-ETS1-1, K-2-ETS1-2, ETS1.A, ETS1.B, ETS1.C

Learning Targets Addressed: 2, 3, 4, 5

Key Resources Used:

- Launch

Assessment Map:

Type	Level	Assessment Detail
Practice	Knowledge	<ul style="list-style-type: none">• Classify adaptations for camouflage, protection, food, or locomotion.
Formative	Skills/ Reasoning	<ul style="list-style-type: none">• Demonstrate which animal adaptations are best suited for various environments.
Summative	Product	<ul style="list-style-type: none">• Create a poster for a traveler to a new environment, including necessary adaptations for the traveler.• Create a shoe for a traveler to wear in a new environment, including necessary adaptations.

IV. Plants and Animals

- A. Plants
- B. Animal Habitats

Standards Referenced:

Next Generation Science Standards:

LS1.A, 1-LS1-1, 1-LS1-2, 1-LS3-1

Learning Targets Addressed: 1, 2, 3, 4

Key Resources Used:

- Launch

Assessment Map:

Type	Level	Assessment Detail
Practice	Knowledge	<ul style="list-style-type: none">• Identify the parts and functions of a plant.• Identify different habitats of animals.

	Formative	Skills/ Reasoning	<ul style="list-style-type: none">• Demonstrate why specific plants and animals survive in various environments.
	Summative	Product	<ul style="list-style-type: none">• Create a habitat that plants and animals can survive in.