

SWALLOW SCHOOL DISTRICT CURRICULUM GUIDE

Curriculum Area: Science

Course Length: Full Year

Grade: 5K

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

Stage 1: Desired Results

Course Description and Purpose:

In Kindergarten science, there are 4 units. In the Material and Motion unit, students will study different materials (wood, paper, fabric), evaluate their uses, and create structures to examine energy transfer. The second unit, Air and Weather, provides experiences that develop student's understanding of the earth's atmosphere and changes in weather patterns. In the third unit, Structure and Function- The Human Body, students examine major organs within the body and investigate how the structure of each is related to its function. In the fourth unit, Animals and Algorithms, students explore the nature of computers and the way humans use and control technology.

Enduring Understanding(s):

- Matter can be described and classified by its observable properties.
- Pushes and pulls can have different strengths and directions.
- Pushing or pulling on an object can change the speed or direction of its motion and can start or stop it.
- When objects touch or collide, they push on one another and can change motion.
- A bigger push or pull makes things speed up or slow down more quickly.
- Air is everywhere.
- Air can move things.
- Scientists and engineers use standard practices to explain the world or solve problems
- The shape and stability of structures of natural and designed objects are related to their function
- Mathematical thinkers apply complex thinking and reasoning strategies where thinking is intentional and reflected upon.
- Professionals function effectively and efficiently on multidisciplinary teams to be successful
- Professionals communicate effectively with a variety of audiences using multiple modalities to be successful
- Professionals conduct themselves so as to maximize benefits for society and minimize harm
- Living things are anything that is alive or was once alive
- Computational thinkers systematically develop solutions through computational methods.

Essential Question(s):

- What in our world is made of wood and what properties make wood useful?
- What in our world is made of paper and what properties make paper useful?
- What in our world is made of fabric and what properties make fabric useful? How can we use materials in engineering a structure?
- How can we change the motion of an object?
- Where is air?
- How can we show that air takes up space?
- What is compressed air?
- What are the characteristics of clouds that help to classify them?
- How does air resistance affect an object's movement?
- What weather patterns can we observe over time?
- What are the patterns of the moon?
- How are structure and function related?
- How would we function if our bodies were structured differently?
- How can a step-by-step process help you design or improve a solution to a problem?
- How do you use algorithms in your daily life?
- How can you use computer programming to complete a task?
- Why should a step-by-step process be followed to solve a problem?

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. Materials and Motion

- A. Wood
- B. Fabric
- C. Paper
- D. Motion

Standards Referenced:

Learning Targets Addressed: 1, 2, 3, 4, 5, 6

Key Resources Used:

- FOSS

Assessment Map:

Type	Level	Assessment Detail
Practice	Knowledge	<ul style="list-style-type: none">• Science journal
Formative	Skills/ Reasoning	<ul style="list-style-type: none">• Science journal
Summative	Product	<ul style="list-style-type: none">• Science journal

II. Air and Weather

- A. Exploring Air
- B. Observing Weather
- C. Wind Explorations
- D. Looking for Change

Standards:

Learning Targets Addressed: 1, 2, 3, 4, 5, 6

Key Resources Used:

- FOSS

Assessment Map:

Type	Level	Assessment Detail
Practice	Knowledge	<ul style="list-style-type: none">• Daily Weather Observations and Evaluation• Science journals
Formative	Skills/ Reasoning	<ul style="list-style-type: none">• Daily Weather Observations and Evaluate• Science Journals
Summative	Product	<ul style="list-style-type: none">• Science Journals

III. Structure and Function- The Human Body

- A. Zoom Into the Body
- B. Exploration Centers
- C. Bone Puzzle
- D. Why So Many Bones?
- E. Design a Cast

Standards:

Learning Targets Addressed: 1, 2, 3, 4, 5, 6

Key Resources Used:

- Launch

Assessment Map:

Type	Level	Assessment Detail
Practice	Knowledge	<ul style="list-style-type: none"> • PLTW Launch Logs
Formative	Skills/ Reasoning	<ul style="list-style-type: none"> • PLTW Launch Logs • Observations • Classroom Dialogue/Questioning
Summative	Product	<ul style="list-style-type: none"> • Model of a cast • PLTW Structure & Function Human Body Assessment

IV. Animals and Algorithms

- A. Animal Maze
- B. Meet Scratch Jr.
- C. Scratch Jr. Puzzles
- D. Animals in Action

Standards:

Learning Targets Addressed: 2, 3, 4, 5, 6

Key Resources Used:

- Launch
- Scratch Jr.

Assessment Map:

Type	Level	Assessment Detail
Practice	Knowledge	<ul style="list-style-type: none"> • PLTW Launch Logs • Scratch Jr.
Formative	Skills/ Reasoning	<ul style="list-style-type: none"> • PLTW Launch Log • Scratch Jr. • Classroom Dialogue/Questioning
Summative	Product	<ul style="list-style-type: none"> • Coding Project • PLTW Animals & Algorithm Assessment