

Main Unit

Wild Science

Wild Science	1st Grade Gifted
Content Area: What is the core subject area?	Timeline: How long will this unit last?
Science	32 weeks
Overarching Question: How can we ask questions like scientists to learn about our world?	
Rationale/Purpose: The purpose of this unit is to provide first-grade students an opportunity to investigate the ways in which scientists make sense of the world around them.	
Description: During the first quarter, students will gather and analyze information related to animals, how they are classified, and how they live together in ecosystems. Students will participate in hands-on learning activities to investigate animal adaptations. During the second quarter, students will explore various science areas including physics, Earth science, and microbiology. They will be encouraged to ask questions, make observations, research, and make hypotheses as they perform experiments. Students will explain their results at the end of each experiment and may have new questions to explore. During the second semester (3rd & 4th quarter) of CCL, the first-grade students will use critical thinking to investigate and understand the world around them. The students will perform experiments in the areas of chemistry and physics. Throughout the semester students will be encouraged to ask deeper questions, make detailed observations, research, and make hypotheses. Students will explain their results at the end of each experiment, and reflect on WHY the experiments turned out the way they did. Students will be given opportunities to change variables within some of the experiments. Students will also work alone and in teams to create their science experiments from start to finish. Our year will end with a “1st Grade Science Expo” in which families will be invited to come in and see the work the students have been doing.	
Enduring Understandings:	
<ul style="list-style-type: none"> ● Decision-making requires a process of gathering, analyzing, and applying information and ideas. ● The development of critical thinking skills and dispositions is a life-long endeavor. ● Through practice, we can grow in our ability to develop and communicate effective solutions to problems. 	
Essential Questions:	
<ul style="list-style-type: none"> ● How do I make and defend a well-thought-out and reasonable decision? ● How do I collect and determine relevant data? 	

1st Grade at a Glance

- How can I transfer my knowledge and skills to new situations?
- How do I communicate my ideas effectively to an appropriate audience?

MOGLO:

ASSESSED:

CR.A.1 - Analyze data to independently identify elements of issues

CR.I.1 - Communicate complex ideas to reach an intended audience

CR.C.2 - Use facts to support ideas, decisions, and opinions

SUPPORTING:

CR.B.1 - With guidance, identify (a) possible solution(s) to problems

CR.G.1 - Identify the parts of the system and explain connections within that system

Know:

- All animals are classified as either vertebrates or invertebrates.
- Classifying and grouping things helps us to organize and understand our world better.
- Animals have developed specific adaptations, over time, that allows them to fit into an environment.
- Scientists classify birds in different ways.
- Scientists use the skills of observation to learn about animals.
- Diversity is important in all ecosystems.
- Microorganisms are alive in pond water.
- Scientists use the skill of observation to help gather information.
- Sound is a form of energy that travels in waves.
- The engineering process design loop helps solve problems.
- Objects have different densities.
- Scientists ask questions and do experiments to find answers to their questions.
- Scientists conduct experiments to teach others about their findings.
- Scientists test an experiment many times and record their results.
- Scientists must be aware of different kinds of variables as they conduct scientific tests and that effort must be made to control as many variables as possible.
- Certain materials can be attracted by a magnet - those materials contain iron.
- Planes will fly when four forces of aerodynamics work together and are balanced - drag, gravity, thrust, and lift.
- The forces of gravity and friction affect movement.
- Alchemists mixed different liquids to make chemical reactions.
- Scientists share results when conducting experiments to teach others what they discover.
- Electricity is a form of energy and it flows in a path.
- Scientists use observation and prediction skills when using microscopes to see small structures within larger objects.
- Scientists use microscopes to gain a better understanding of our world.

1st Grade at a Glance

- Scientists test experiments and record their results

Understand:

- The parts of a system are interconnected and dependent on one another.
- Scientific thinking can be used to understand and investigate our world.

Do:

- Analyze information about vertebrates and invertebrates to classify them.
- Investigate the relationship between birds' beaks, feet, and wings and be able to explain why birds need to be different.
- Gather information by observing bugs and their adaptations and teach others about their findings.
- Create a visual presentation to explain how to identify toads and frogs.
- Observe critically to gather and analyze information about reptiles and amphibians.
- Use new information to draw conclusions and defend their thinking.
- Locate and analyze information about fish and create a product to share their new learning with other first-grade students.
- Create a diversity paper showing connections of animals that live in Yellowstone.
- Observe microorganisms with a microscope and learn how they are alike and different.
- Write "I wonder" questions about sound after visiting stations.
- Weigh equal measures of different liquids to discover which liquids weigh more/are more dense.
- Observe different liquids and discover why some can't be mixed.
- Make observations and predict which objects will float/sink in the 3 different liquids to learn more about density.
- Design, set up, and conduct various sound or density experiments and explain their findings to the class.
- Work with a partner to build a catapult based on the teacher's example and measure how far a catapult can launch a cotton ball.
- Compare results from last week's testing of the original catapult design with the test results from the new catapult and conclude the effectiveness of the new catapult design.
- Observe and discover some of the basic properties of magnets and experiment with an invisible force that acts at a distance.
- Construct a paper airplane that will fly the farthest, changing designs as needed.
- Construct a cardboard slide and a set of sliders to observe forces and motion.
- Design, set up, and conduct various force and motion experiments and explain their findings to the class.
- Experiment to figure out which liquids could change the appearance of dull copper pennies and explain their thinking.
- Perform chemistry experiments and decide how to share their results with the class.
- Investigate how electrical energy requires a circuit.
- Use Snap Circuits to build a variety of circuits.
- Observe objects with a microscope and record observations.
- Use critical thinking to make decisions about what structures will change when objects are viewed under microscopes.
- Work with a team to conduct an experiment and write results or determine what to do

1st Grade at a Glance

next.

- Work with a team to plan a final project.
- Reflect on their learning as a scientist.