Science 6 Syllabus 2023-2024

Sixth grade science studies a little bit of everything from Earth Science to Chemistry to Physical Science. It is an exciting year of hands-on immersion into many fields of science. Lessons will be taught through demonstrations, labs, hands-on activities, modeling and discussion. Students will be expected to form hypotheses, conduct experiments, record, observe, test ideas and present information.

Topics to be covered:

Measurement

September

- How do we effectively and efficiently use measurement tools in the science classroom? Students will explore metric measurement and engage in hands-on activities to practice using the metric system and the measurement tools in the classroom.

Light and Matter

September/October

- Why do we sometimes see different things when looking at the same object? How does a one-way mirror work? Though most everyone knows that one-way mirrors exist, having students model how they work turns out to be a very effective way to develop their thinking about how visible light travels and how we see images.

Heat Energy Transfer

November

- How do we use and control thermal energy in a system? In this unit students will use many labs to explain through models how energy is transferred within a system. They will model the movement of energy through conduction, radiation and convection. The unit will culminate in a group project in which students will apply what they have learned to a real world engineering problem.

Weather/Climate and Water Cycling

November/December/January

- Why does a lot of hail, snow, rain, fall at some times and not others? In the first half of this unit students will explain small scale storms and why they occur. They will then move to examine large scale storms (hurricanes) and how climate affects weather patterns and precipitation.

Plate Tectonics and Rock Cycling

January/February/March

- What causes Earth's surface to change? Students will investigate earthquakes and landforms to explore how mountains can move. Students will learn how to model earth's movements and will try to solve the puzzle of why Mount Everest is moving..

Natural Hazards

April/May

- Where do natural hazards happen and how do we prepare for them? Students will explore a devastating natural event that caused major flooding in coastal towns of Japan. This event was the 2011 Great Sendai or Tōhoku earthquake and subsequent tsunami that caused major loss of life and property in Japan. As students design solutions to solve this problem, they begin to wonder about the natural hazard itself: what causes it, where it happens, and how it causes damage.

Natural Resources and Human Impact

May/June

- How do changes in the Earth's system impact our communities and what can we do about it? This unit on Earth's resources and human impact begins with students observing news stories and headlines of drought and flood events across the United States. Students figure out that these drought and flood events are not normal and that both kinds of events seem to be related to rising temperatures. Students will develop an initial model which they will continue to revise as they explore what causes droughts, floods and rising temperatures.

Science Grading Policy

Student science grades are based on the following:

- Guided practice (in class work) - 50%
- Independent Performance (tests, quizzes, projects) - 40%
- Work Habits (participation, homework, preparation) - 10%

All student work will be collected the day it is due and graded. If the student did poorly on the assignment they can revise their work until the end of the unit test/project. No late work will be accepted after the unit test/project is given. Please check Schooltool regularly to keep track of how you are doing and work you owe.

Students will be given the opportunity to revise some of their work. Work that is revised can be improved to 95%. **However, there will be no test revisions!** I spend a time preparing students for a test. It is important that they put in the effort to study prior to the test.