

# Weather and Water Syllabus

Fall 2021

## Instructor Information

Instructor	Email	
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## General Information

### Description

In this unit of study, we will study the phenomena of Earth's atmosphere, weather, and water. We will use aspects of physics and chemistry to go beyond the simple observance of local weather. Even though investigations may seem irrelevant at first, students need to grapple with ideas about atoms and molecules, changes of state, and energy transfer before they can launch into the bigger ideas involving air masses, fronts, convection cells and winds, the development of severe weather, and climate change.

### Expectations and Goals

Students will make observations and do investigations that involve constructing and using conceptual models. They will generate questions for investigation, which may lead to new questions. Through their study of weather and water, students should become more confident in their ability to ask good questions and to recognize and use evidence from their investigations to make conclusions and predictions about weather formation.

## Course Materials

### Required Materials

All necessary materials will be provided. No text book is required in this unit, a resource book will remain in the classroom at all times. Information about the 6th Grade program FOSS can be found here: [https://www.fossweb.com/MS\\_families](https://www.fossweb.com/MS_families) The following materials must be brought to class every day to avoid being unprepared for class.

- Pencil
- Homework assignments
- Student Laptops
- Agendas

## Unit Overview

This unit of study has ten separate investigations that will span the entirety of the semester. Each investigation builds upon the next investigation, so attendance is very important so that no instruction and material is missed. Information is available on Google Classroom. The science notebook is an extremely important piece of this class. All notes, investigations, and questions will be recorded in the science notebook, and students will be able to use notebooks on ALL tests. The instructor will model appropriate notetaking strategies, but it is important for parents to stress the importance of taking detailed and legible notes during class time. Notes will be taken in an online notebook on Google Classroom. If absent, students should record missing notes upon returning during the E/I period.

## Exam Schedule

Exams will follow each investigation and will be open notebook. The final exam is at the end of the semester.

## Additional Information and Resources

### Writing in Science

Putting scientific notes and data into writing is one of the most important pieces to becoming a contributor to the scientific community. We will be working together to develop our notes and data into summative conclusions and reflections that will complete each investigation. These will be works in progress throughout the unit of study and will be graded.

## Course Schedule As Follows:

Week\*

Topic

PA State Standards

<https://www.pdesas.org/Standards/View>

1	What is Weather? -Severe Weather	S.6.D.2.1.1
2	Air Pressure and Wind -Compressed air -Air pressure	S.6.D.2.1.3
3-4	Convection -Energy Transfer -Kinetic energy -Density of fluids	S.6.D.2.1.1
5-6	Radiation -Solar Radiation -Radiant energy -Thermal Energy -Differential Heating	S.6.C.1.1.2
6-7	Conduction -Energy Transfers	S.6.D.2.1.1
7-8	Air Flow -Sea/Land Breezes -Coriolis Effect -Trade Winds	S.6.D.2.1.1
10-11	Water in the Air -Relative Humidity -Dew Point -Transpiration	S.6.D.2.1.3
12-13	The Water Planet -Water Cycle	S.6.D.2.1.3
13-14	Climate Over Time -Climate Change -Greenhouse Gases -Paleoclimatology	S.6.B.3.1.1
15=16	Meteorology -Predicting the weather	S.6.D.2.1.1
16-17	Final Project	
18	Final Exam	
* Weekly timeline is tentative, topics will follow the order above.		