

# NGSS Physical Science

## Course Overview and Syllabus

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**Grade level:** 7–9

**Prerequisite Courses:** None

**Credits:** 1.0

### Course Description

This full-year course focuses on traditional concepts in chemistry and physics, and encourages exploration of new discoveries in this field of science. The course includes an overview of scientific principles and procedures, and leads students toward a clearer understanding of matter, energy, and the physical universe. As students refine and expand their understanding of physical science, they will apply their knowledge in experiments that require them to ask questions and create hypotheses. Throughout the course, students solve problems, reason abstractly, and learn to think critically.

### Course Objectives

Throughout the course, you will meet the following goals:

- Examine the periodic table and determine the properties of an element.
- Investigate the structures, types, and properties of matter.
- Learn about chemical bonds and chemical reactions.
- Explain the relationship between motion and forces.
- Recognize the interdependence of work and energy.
- Relate heat and temperature change on the macroscopic level to particle motion on the microscopic level.
- Demonstrate an understanding of waves, including sound and light.
- Analyze the connection between electricity and magnetism.

### Student Expectations

This course requires the same level of commitment from you as a traditional classroom course would. Throughout the course, you are expected to spend approximately 5–7 hours per week online on the following activities:

- Interactive lessons that include a mixture of instructional videos and tasks
- Assignments in which you apply and extend learning in each lesson

- Assessments, including quizzes, tests, and cumulative exams

## Communication

Your teacher will communicate with you regularly through discussions, e-mail, chat, and system announcements. You will also communicate with classmates, either via online tools or face to face, as you collaborate on projects, ask and answer questions in your peer group, and develop your speaking and listening skills.

## Grading Policy

You will be graded on the work you do online and the work you submit electronically to your teacher. The weighting for each category of graded activity is listed below.

Grading Category	Weight
Quiz	20%
Test	30%
Exam	20%
Assignment	10%
Lab	10%
Additional	0%
Project	10%

## Scope and Sequence

When you log into Edgenuity, you can view the entire course map—an interactive scope and sequence of all topics you will study. The units of study are summarized below:

**Unit 1:** Atoms, Elements, and the Periodic Table

**Unit 2:** Properties and States of Matter

**Unit 3:** Chemical Bonding and Reactions

**Unit 4:** Mixtures, Solutions, Acids, and Bases

**Unit 5:** Motion and Forces

**Unit 6:** Energy

**Unit 7:** Waves

**Unit 8:** Electricity and Magnetism