

# SAMPLE COURSE SYLLABUS

## Physical Science Course Syllabus

### Course Description

Physical science, a required year-long course for all ninth grade students, is designed to form the foundation of further study of science through an understanding of scientific ways of knowing, scientific inquiry, and how technology is used in science. The course content focuses on the structures of matter and its interaction with energy. Principles of physics are explored through the study of wave phenomenon, electromagnetism, sound, light, and electricity. Chemistry principles are also included in the course: atoms and the periodic table of elements, physical and chemical changes and reactions, solutions, acids and bases, and nuclear changes. Students who master the course content will be prepared for the state science assessment and have foundational understanding to apply scientific principles to further study and the real world.

### Course Standards

1. Understand the impact of scientific concepts on individuals and families, the community, the workplace and the world.
2. Demonstrate an understanding of scientific reasoning and inquiry by applying a logical sequence to solving problems and designing experiments with variables and controls.
3. Read and interpret scientific information and literature.
4. Develop communication skills and abilities in writing, listening, and speaking.
5. Use technology to collect and analyze data and communicate scientific ideas and findings.
6. Demonstrate and understand of the following scientific concepts through written and oral language, graphic representation, data analysis, and simulation:

Science safety history of science nature and structure of matter atoms and the periodic table of elements physical and chemical changes and reactions nuclear changes (radioactivity, fission, and fusion)	Weather and climate Earth cycles Forces and motion Simple machines Energy and energy transformations Waves (light and sound) and the electromagnetic spectrum
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### Major Projects and Assignments

#### Weekly Labs and Lab Reports and/or Analysis

Each laboratory experience will include a written plan that illustrates the use of scientific reasoning and inquiry and a written analysis interpreting the data and findings of the study. Findings will regularly be presented to the entire class.

#### Daily Class work, Homework, and Portfolio of Work

Students will complete in-class assignments daily and homework assignments about twice a week. To encourage reflection on learning, students will answer questions on class notes and regularly complete exit slips and “Do Nows.” All work will be collected in a student portfolio on which students will regularly be asked to reflect on the quality of their work.

#### “Science in the News”

Twice each month, students will locate and read about past, present, and future science discoveries and theories in science magazines or newspapers. An oral or written report (altering) will be made summarizing the article and discussing the implications of the information for individuals and families, the community, the workplace, and the world.

## Projects

- Famous science inventors; Students will write a computer-generated research report on a science inventor and analyze the implications of the inventor's work on individuals and families, the community, the workplace, and the world.
- Building a Weather Station; Students will assemble tools to measure wind speed, humidity, and rainfall, collect and analyze the data, and attempt to make accurate weather forecasts.
- Roller coasters; Students will delve into the workings of potential and kinetic energy by designing a roller coaster.
- Element Brochure; Students will create a brochure explaining an element from the periodic table.
- Wind Chimes; Students will explore the phenomena of waves and sound by using different materials to create a set of wind chimes. Frequency and wavelength will be measured.

## Tests and Quizzes

Quizzes are given weekly over the course content. Unit tests are given approximately three to five times per grading period and will include essay and open-response questions. A semester exam and a final exam are also given and are comprehensive.

## Distribution of Grading Components

Grades are determined by dividing the points earned by the number of points available in the grading period. Each major project and assignment commands an approximate percentage of the total points for the grading period as follows:

Lab plans and Reports	25%
Homework, Class work, and Course Portfolio	10%
"Science in the News"	5%
Projects	25%
Tests, Quizzes, and Exams	35%

## Grading policy: mandated by the Seattle Public School Board

A	93-100% (GP 4.0)	B+	87 - 89% (GP 3.3)	C+	77 - 79% (GP 2.3)
A-	90 - 92% (GP 3.7)	B	83 - 86% (GP 3.0)	C	73 - 76% (GP 2.0)
		B-	80 - 82% (GP 2.7)	C-	70 - 72% (GP 1.7)
D+	67 - 69% (GP 1.3)				
D	60 - 66% (GP 1.0)	E	below 60% (GP 0)		

## Support/Make-Up Work

Extra help is available after school Tuesday through Thursdays in the Homework Center and during lunch periods each day. Any student who falls below a C (the proficient level) will receive a parent phone call and an explanation of the reasons for the drop in grade. Students who persist in doing work that is below the proficient level will be asked to develop a specific contract for the improvement in the course grade and quality of work. Parents will be involved in the process and will sign the improvement contract.