Grade 5 Science Overview (PA STEELS Standards) [August 2025]

A Guide to learning Science in Grade 5@OJRSD

Grade 5 science helps students connect concepts across matter, energy, Earth systems, and living things. Through investigations, modeling, engineering design, and environmental problem-solving, students build skills that prepare them for middle school science and thoughtful engagement with the world around them.

FALL UNITS: Matter, Energy & Properties of Materials

Designing Devices That Transfer Energy
Students apply scientific ideas to design, test, and refine a device that converts energy from one form to another.

Mixing Substances: Do New Materials Form?
Students conduct investigations to determine whether mixing two or more substances forms a new substance or a simple mixture.

Conserving Matter During Changes
By measuring and graphing data, students gather evidence that when substances are heated, cooled, or mixed, the total weight of matter is conserved.

Choosing Materials Based on Properties
Students analyze data about material properties to make informed decisions about which materials are best suited for specific purposes.

Identifying Materials Through Observation
Students make detailed measurements and observations to identify unknown materials based on their physical properties.

Matter Is Made of Tiny Particles
Students develop models showing that all matter is made of particles too small to be seen.

Engineering & Design
Students apply engineering skills throughout the fall as they refine energy-transfer devices and test materials.

WINTER UNIT: Water Resources, Space Patterns & Environmental Stewardship

Where Is Earth's Water?
Students graph and describe the distribution of water on Earth, learning that most is salt water and only a small portion is fresh and usable.

How Humans Affect the Environment
Students analyze how living things, including people, change their environment and how the environment, in turn, affects them.

Patterns in Shadows, Day/Night & Seasonal Stars
Students use graphs and observations to identify patterns in shadow length, day/night cycles, and seasonal visibility of certain stars.

Why the Sun Looks So Bright
Students support the idea that the sun appears brighter than other stars because it is much closer to Earth.

When Environmental Action Is Needed
Students research an environmental issue and construct an argument for whether action is needed, proposing possible solutions.

Designing Solutions to Environmental Problems
Students design and evaluate solutions to current environmental issues such as pollution, habitat loss, or climate-related problems.

Engineering & Design
Students continue using the engineering design process to refine environmental solutions.

SPRING UNIT: Life Cycles, Traits & Pennsylvania Native Plants

Life Cycles of Organisms
Students develop models showing that all organisms experience birth, growth, reproduction, and death, even though life cycles vary.

How Environment Influences Traits
Students use evidence to explain how environmental factors can influence an organism's traits or behaviors.

Inherited Traits & Variation
Students analyze data to show that organisms inherit traits from parents but still display a variety of characteristics.

Native Plants of Pennsylvania
Students study Pennsylvania's native plant species, exploring their role in ecosystems, conservation, and biodiversity.

Engineering & Design
Students apply engineering skills to model or solve problems related to life cycles, traits, or habitat challenges.