Washington Science

Fifth Grade

Physical Science

What are the properties of matter and what causes those properties to change or stay the same?

1 Use evidence, data, and modeling to investigate and measure the properties of matter and how combining matter or changing its temperature affects those properties. WA 5.PS1

- 1 Develop a model to describe that matter is made of particles too small to be seen. 5-PS1-1
- 2 Measure and graph quantities to provide evidence that regardless of the type of change that occurs when heating, cooling, or mixing substances, the total weight of matter is conserved. 5-PS1-2
- 3 Make observations and measurements to identify materials based on their properties. 5-PS1-3
- 4 Conduct an investigation to determine whether the mixing of two or more substances results in new substances. 5-PS1-4

Life Science

How do living things use matter and energy?

1 Use investigation, evidence and data to show and explain where plants obtain matter needed grow. WA 5.LS1

- 1 Support an argument that plants get the materials they need for growth chiefly from air and water. 5-LS1-1

3 Use models to show and explain how the sun's energy is passed through systems made up of plants and animals, including how that energy is used for life processes. WA 5.PS3

- 1 Use models to describe that energy in animals' food (used for body repair, growth, motion, and to maintain body warmth) was once energy from the sun. 5-PS3-1

2 Use evidence, data, and modeling to show and explain the movement of matter among living and non-living parts of an ecosystem. WA 5.LS2

- 1 Develop a model to describe the movement of matter among plants, animals, decomposers, and the environment. [Climate] [ESE] 5-LS2-1

Earth and Space Sci

How does living on Earth affect what we see and feel?

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1 Use evidence, data, and modeling to show and explain how relative locations and motion of the Earth, sun, moon, and stars result in patterns of what we see on Earth. WA 5.ESS1

1 Support an argument that differences in the apparent brightness of the sun compared to other stars is due to their relative distances from Earth. 5-ESS1-1

2 Represent data in graphical displays to reveal patterns of daily changes in length and direction of shadows, day and night, and the seasonal appearance of some stars in the night sky. 5-ESS1-2

2 Use evidence, data, and modeling to show and explain how Earth's mass affects how objects on its surface feel (weight) and behave. WA 5.PS2

1 Support an argument that the gravitational force exerted by Earth on objects is directed down. 5-PS2-1

How do Earth's parts work together?

2 Use evidence and modeling to show and explain how the four major spheres of the Earth interact with each other and the effects of those interactions. WA 5.ESS2

1 Develop a model using an example to describe ways the geosphere, biosphere, hydrosphere, and/or atmosphere interact. [Climate] [ESE] 5-ESS2-1

2 Describe and graph the amounts of salt water and fresh water in various reservoirs to provide evidence about the distribution of water on Earth. [ESE] 5-ESS2-2

How can humans work together to take care of our Earth?

Conduct research to show and explain how communities can positively affect the health of their local and global environment. WA 5.ESS3

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Obtain and combine information about ways individual communities use science ideas to protect the Earth's resources and environment. [Climate] [ESE] 5-ESS3-1

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3–5 Engineering, Technology, and Ap

How do we engineer solutions to a problem?

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1. Use modeling, investigation, and data to design, test, and improve solutions to problems that can be solved through engineering; include criteria, constraints, and elements of fair tests. WA 5.ETS1
    1. Define a simple design problem reflecting a need or a want that includes specified criteria for success and constraints on materials, time, or cost. 3-5-ETS1-1
    2. Generate and compare multiple possible solutions to a problem based on how well each is likely to meet the criteria and constraints of the problem. 3-5-ETS1-2
    3. Plan and carry out fair tests in which variables are controlled and failure points are considered to identify aspects of a model or prototype that can be improved. 3-5-ETS1-3

Environmental and Sustainability Education

How do we work together to ensure a healthy environment and sustainable economy for future generations?

1. Through project-based learning, synthesize information about ecological, social, and economic systems from multiple sources to understand, design, communicate, and act upon solutions for local environmental problems with community partners, including tribes. WA.5.ESE.1
    1. Cite multiple sources and perspectives in an analysis of a relevant local environmental problem and how it connects to social, economic, and environmental systems, considering personal values at individual, community, and tribal scales. 5.ESE.1-1
    2. Design an investigation on school grounds to gather, analyze, and present data about how the built environment of the school improves or reduces environmental quality (e.g. impacts on/benefits to water quality, air quality, biodiversity, waste). 5.ESE.1-2
    3. Conduct a project that specifies a local environmental problem, identifies solution paths, solves the problem, and reports results demonstrating individual knowledge, attitudes, and understanding of personal and civic responsibility for improved environmental justice and sustainability. 5.ESE.1-3