Fifth Grade
OREGON State Standards

Science

Earth & Space Science

5.ESS1 Earth's Place in the Universe

5.ESS1.1	**Support an argument that the apparent brightness of the sun and stars is due to their relative distances from Earth.** [Clarification Statement: Emphasis is to obtain information and construct an explanation on how the scale of the distance to objects giving off light affects the brightness of objects (e.g. nearby streetlights appear bigger and brighter than distant streetlights).]
5.ESS1.2	**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.** [Clarification Statement: Examples of patterns could include the position and motion of Earth with respect to the sun and selected stars that are visible only in particular months.]

5.ESS2 Earth's Systems

5.ESS2.1	**Develop a model using an example to describe ways the geosphere, biosphere, hydrosphere, and/or atmosphere interact.^** [Clarification Statement: Examples could include the influence of the ocean on ecosystems, landform shape, and climate; the influence of the atmosphere on landforms and ecosystems through weather and climate; and the influence of mountain ranges on winds and clouds in the atmosphere. The geosphere, hydrosphere, atmosphere, and biosphere are each a system.]
5.ESS2.2	**Describe and graph the amounts and percentages of water and fresh water in various reservoirs to provide evidence about the distribution of water on Earth.** [Clarification Statement: Emphasis is on models to organize data about the quantity of saltwater and freshwater in various reservoirs and graph data to compare the proportions of saltwater and freshwater on Earth.]

5.ESS3 Earth and Human Activity

5.ESS3.1	**Obtain and combine information about ways individual communities use science ideas to protect the Earth's resources and environment.** [Clarification Statement: Emphasis is on gathering data to construct an explanation on how and why the selected activity protects the Earth's resources and environment for the identified region or community

Engineering, Technology, and the Application of Science

5.ETS1 Engineering Design

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.** [Clarification Statement: A design problem must be identified before solutions are developed. Solutions or designs identify the criteria for success and identify limitations and constraints.]
5.ETS1.2	**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.** [Clarification Statement: Emphasis is on researching a problem prior to designing a solution, plan for testing to evaluate how well it will perform under a range of likely conditions using scientific knowledge and communicating the design process.
5.ETS1.3	**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.** [Clarification Statement: Emphasis is on identifying the purpose of the investigation and specific evidence to collect, testing one criteria or constraint at a time, and record the data accordingly.

Life Science

5.LS1 From Molecules to Organisms: Structures and Processes

5.LS1.1	**Support an argument that plants get the materials they need for growth chiefly from air and water.^** [Clarification Statement: Emphasis is on the idea that plant matter comes mostly from air and water, not from the soil.]

5.LS2 Ecosystems: Interactions, Energy, and Dynamics

5.LS2.1	**Develop a model to describe the movement of matter among plants, animals, decomposers, and the environment.^** [Clarification Statement: Emphasis is on the idea that matter that is not food (air, water, decomposed materials in soil) is changed by plants into matter that is food. Examples of systems could include organisms, ecosystems, and the Earth.]

Physical Science

5.PS1 Matter and Its Interactions

5.PS1.1	**Develop a model to describe that matter is made of particles too small to be seen.^** [Clarification Statement: Examples of evidence could include adding air to expand a basketball, compressing air in a syringe, dissolving sugar in water, and evaporating salt water.]
5.PS1.2	**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.** [Clarification Statement: Examples of reactions or changes could include phase changes, dissolving, and mixing that forms new substances.]
5.PS1.3	**Make observations and measurements to identify materials based on their properties.** Clarification Statement: Examples of materials to be identified could include baking soda and other powders, metals, minerals, and liquids. Examples of properties could include color, hardness, reflectivity, electrical conductivity, thermal conductivity, response to magnetic forces, and solubility; density is not intended as an identifiable property.]
5.PS1.4	**Conduct an investigation to determine whether the mixing of two or more substances results in new substances.** [Clarification Statement: Emphasis is to investigate the effect of combining various substances to determine if a new substance is formed. Quantitative or qualitative data will be collected (e.g. weight or mass, temperature, state of matter, color, texture, odor).

5.PS2 Motion and Stability: Force and Interactions

5.PS2.1	**Support an argument that the gravitational force exerted by Earth on objects is directed down.** [Clarification Statement: "Down" is a local description of the direction that points toward the center of the spherical Earth.] [Assessment Boundary: Assessment does not include mathematical representation of gravitational force.]

5.PS3 Energy

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.** Clarification Statement: Examples of models could include diagrams, and flow charts.][