

Science Grade 5

ORExt Standard Code: S05ESS1.1

Equivalent ODE Standard: 5-ESS1-1

Oregon Science Standard 2022:

Support an argument that the apparent brightness of the Sun and stars is due to their relative distances from Earth.

Oregon Science Standard Clarifications/Assessment Boundary 2022:

[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).]

[Assessment Boundary: Assessment is limited to relative distances, not sizes, of stars. Assessment does not include other factors that affect apparent brightness (such as stellar masses, age, and stage).]

Oregon Alternate Academic Achievement Standard (Essentialized Standard):

Recognize that the Sun is brighter than other objects on Earth and in space.

Low (L), Medium (M), High (H) Parameters:

L: Questions ask about the Sun being brighter than other common objects that do not shine on their own (e.g., toy, ball, rock).

M: Questions ask about the Sun being brighter than other objects in sky or space that are not as bright (e.g., clouds, airplanes, rockets, birds, Moon, other stars, planets).

H: Questions ask about the Sun being brighter than other stars in space because it is closer to the Earth.

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ORExt Standard Code: S05ESS1.2

Equivalent ODE Standard: 5-ESS1-2

Oregon Science Standard 2022: 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.

Oregon Science Standard Clarifications/Assessment Boundary 2022:

[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.]

[Assessment Boundary: Assessment does not include causes of seasons.]

Oregon Alternate Academic Achievement Standard (Essentialized Standard): Use picture models to understand the difference between day and night and the appearance and direction of shadows.

Low (L), Medium (M), High (H) Parameters:

L: Questions use simple pictures and diagrams to ask about the difference between day and night (e.g., the Sun/daylight is associated with daytime and the Moon/stars/darkness are associated with nighttime), including that shadows typically happen during the daytime.

M: Questions use simple pictures and diagrams to ask about shadows that occur during the daytime (e.g., occurrence/direction/size of shadows based on position of Sun).

H: Questions use simple pictures and diagrams to ask about the Sun and the direction of shadows, including the relative amount of sunlight in different circumstances and the portion of the Earth that is daytime/nighttime (e.g., Sun lighting one side of the Earth and not the other).

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ORExt Standard Code: S05ESS2.1
Equivalent ODE Standard: 5-ESS2-1

Oregon Science Standard 2022: Develop a model using an example to describe ways the geosphere, biosphere, hydrosphere, and/or atmosphere interact.

Oregon Science Standard Clarifications/Assessment Boundary 2022:

[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.]

[Assessment Boundary: Assessment is limited to the interactions of two systems at a time.]

Oregon Alternate Academic Achievement Standard (Essentialized Standard): Identify different parts of the Earth's systems, what they are comprised of, and associated processes.

Low (L), Medium (M), High (H) Parameters:

L: Correctly identify common living organisms of Earth's biosphere, including plants and animals, though not specific names of animals or plants.

M: Correctly identify common non-living features of the Earth from various systems, restricted to: ponds, lakes, rivers, streams, and oceans (i.e., from the hydrosphere); rocks, minerals, mountains, volcanoes, and canyons (i.e., from the geosphere); and air, clouds, and fog (i.e., from the atmosphere).

H: Correctly identify simple interactions among the systems (e.g., clouds (from the atmosphere) providing water (through rain) to oceans and lakes (from the hydrosphere) and to humans/animals/plants (from the biosphere); lakes/rivers (hydrosphere) providing water to humans/animals/plants (biosphere); weather (atmosphere) and water (hydrosphere) eroding mountains/rocks (through wind/rain and streams/rivers, respectively)).

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ORExt Standard Code: S05ESS2.2

Equivalent ODE Standard: 5-ESS2-2

Oregon Science Standard 2022: 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.

Oregon Science Standard Clarifications/Assessment Boundary 2022:

[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.]

[Assessment Boundary: Assessment is limited to oceans, lakes, rivers, glaciers, ground water, and polar ice caps, and does not include the atmosphere.]

Oregon Alternate Academic Achievement Standard (Essentialized Standard): Identify features made of water, and compare the amount of water in different reservoirs on Earth.

Low (L), Medium (M), High (H) Parameters:

L: Restricted to questions about which Earth features are made of water (i.e., oceans, lakes, rivers, streams) as compared to common objects that are not (e.g., rock, toy, ball).

M: Restricted to questions about which Earth features are made of water (i.e., oceans, lakes, rivers, streams) as compared to other natural features that are not (e.g., mountains, volcanoes, forests).

H: Restricted to comparing the relative amounts of water in various features of the hydrosphere (i.e., oceans, lakes, rivers, streams, ponds) using diagrams/graphs that reflect the relative percentages (e.g., ocean vs. lakes vs. rivers, Pacific Ocean vs. other oceans).

Science Grade 5

ORExt Standard Code: S05ESS3.1
Equivalent ODE Standard: 5-ESS3-1

Oregon Science Standard 2022: Obtain and combine information about ways individual communities use science ideas to protect the Earth's resources and environment.

Oregon Science Standard Clarifications/Assessment Boundary 2022:

[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 (e.g. agriculture practices, solar or wave energy).]

[Assessment Boundary: Assessment is limited to describing how communities use science ideas to protect Earth's resources and environment and does not focus on cause and effect of human impacts on the environment.]

Oregon Alternate Academic Achievement Standard (Essentialized Standard): Identify ways in which people and communities protect or harm the Earth's environment.

Low (L), Medium (M), High (H) Parameters:

L: Identify activities that pollute or harm the planet (e.g., car with exhaust, trash on ground) as compared to common activities that obviously do not (e.g., walking, riding bike, playing outside).

M: Identify which of several simple and common choices is a way to protect or help the Earth (e.g., putting trash in can, recycling, riding bike for transportation) as compared to common and unrelated activities (e.g., playing with a toy, reading a book).

H: Identify which of several simple and common choices is a way to protect or help the Earth (e.g., putting trash in can, recycling, riding bike for transportation) as compared to activities that pollute or harm the Earth (e.g., pollution from a factory, littering in streams or ocean, oil spilling from a ship).

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ORExt Standard Code: S05ETS1.1
Equivalent ODE Standard: 3-5-ETS1-1

Oregon Science Standard 2022: Define a simple design problem reflecting a need or a want that includes specified criteria for success and constraints on materials, time, or cost.

Oregon Science Standard Clarifications/Assessment Boundary 2022:

[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.]

[Assessment Boundary: Assessment does not include limitations or criteria based on specific process or system boundaries (e.g. limitations of scientific principles or long-term societal and environmental impacts).]

Oregon Alternate Academic Achievement Standard (Essentialized Standard): Identify different problems to solve, including those related to science/engineering design.

Low (L), Medium (M), High (H) Parameters:

L: Questions are of a type “Which shows a (design) problem to solve?”, and are restricted to pictures and descriptions of a simple problem compared to simple objects (e.g., flat bike tire compared to a book, bird).

M: Questions are of a type “Which shows a (design) problem to solve?”, and are restricted to a picture and description of a simple problem compared to other activities or situations that are obviously not (e.g., flat tire/missing bike tire/broken toy compared to reading a book, eating food, driving a car).

H: Questions are of the type “Which shows a (design) problem to solve?”, and are restricted to more complex problems (e.g., displaying cars/airplanes) with answers showing a possible (design) problem compared to those that are not (e.g., running out of fuel, missing a wheel/wing vs. car driving/plane flying).

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ORExt Standard Code: S05ETS1.2
Equivalent ODE Standard: 3-5-ETS1-2

Oregon Science Standard 2022: 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.

Oregon Science Standard Clarifications/Assessment Boundary 2022:

[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.]

[Assessment Boundary: Assessment is limited to the design process and modeling.]

Oregon Alternate Academic Achievement Standard (Essentialized Standard): Identify possible solutions to different problems, including those related to science/engineering design.

Low (L), Medium (M), High (H) Parameters:

L: Questions involve simple solutions around daily activities or needs (e.g., eating food - use a spoon/fork; being cold outside - wearing a coat).

M: Questions involve simple solutions and are restricted to common problems and solutions and/or the tools that solve them (i.e., flat bike/car tire - use a bike pump; plants dying – use a sprinkler or hose/give plant food; nail or screw sticking out - use a hammer or screwdriver) compared to obvious non-solutions or unrelated actions (e.g., play outside, go to the park).

H: Questions involve simple solutions and are restricted to common problems and actions and/or the tools that solve them (i.e., flat bike/car tire - use a pump; plants in a garden dying – use sprinkler or hose/give plant food; nail or a screw sticking out - use a hammer or screwdriver) compared to solutions to other similar and related problems.

Science Grade 5

ORExt Standard Code: S05LFS1.1

Equivalent ODE Standard: 5-LS1-1

Oregon Science Standard 2022:

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

Oregon Science Standard Clarifications/Assessment Boundary 2022:

[Clarification Statement: Emphasis is on the idea that plant matter comes mostly from air and water, not from the soil.]

[Assessment Boundary: Assessment does not include photosynthesis or the photosynthesis reaction equation.]

Oregon Alternate Academic Achievement Standard (Essentialized Standard):

Recognize that plants need light, air, and water to grow.

Low (L), Medium (M), High (H) Parameters:

L: Questions use simple diagrams that ask what a plant/tree/flower needs to grow – the correct answer being light, water and/or air compared to things that would obviously not help growth.

M: Questions use simple diagrams to examine if a single plant/tree/flower will grow better/worse/the same if given varying amounts of light, water and/or air.

H: Questions use simple diagrams to compare the (potential or actual) growth of 2-3 plants/trees/flowers when one is given an appropriate light, water and/or air, and the others are not.

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ORExt Standard Code: S05LFS2.1
Equivalent ODE Standard: 5-LS2-1

Oregon Science Standard 2022: Develop a model to describe the movement of matter among plants, animals, decomposers, and the environment.

Oregon Science Standard Clarifications/Assessment Boundary 2022:

[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.]

[Assessment Boundary: Assessment does not include molecular explanations.]

Oregon Alternate Academic Achievement Standard (Essentialized Standard): Recognize that living organisms need different things to grow and survive.

Low (L), Medium (M), High (H) Parameters:

L: Identify which is an animal, plant, or decomposer using common terminology and pictures of common organisms.

M: Identify that animals must eat food (i.e., plants, other animals) and drink water to survive, and that plants need materials in soil, air and water to survive compared to common objects/features they don't need - emphasis is on the matter these organisms need for survival.

H: Expand to include where in the environment such matter needed for survival comes from.

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ORExt Standard Code: S05PHS1.1

Equivalent ODE Standard: 5-PS1-1

Oregon Science Standard 2022:

Develop a model to describe that matter is made of particles too small to be seen.

Oregon Science Standard Clarifications/Assessment Boundary 2022:

[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.]

[Assessment Boundary: Assessment does not include the atomic-scale mechanism of evaporation and condensation or defining the unseen particles.]

Oregon Alternate Academic Achievement Standard (Essentialized Standard):

Recognize that objects, animals, and plants are made of smaller parts and identify various seen and unseen parts.

Low (L), Medium (M), High (H) Parameters:

L: Identify the parts of large common and inanimate objects with easily recognizable smaller parts (e.g., cars/trucks - wheels; buildings/houses - doors and windows; building blocks - smaller blocks).

M: Identify the parts of a wider variety of inanimate objects (e.g., computer screen - keyboard) and common living organisms (e.g., dogs/cats/birds – arms/legs/eyes/wings; plants/trees – leaves/flowers/trunk).

H: Identify more complex parts of other common objects and living organisms including those that are too small to be seen (e.g., water/objects/animals/plants are made of atoms/molecules).

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ORExt Standard Code: S05PHS1.2

Equivalent ODE Standard: 5-PS1-2

Oregon Science Standard 2022: 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.

Oregon Science Standard Clarifications/Assessment Boundary 2022:

Clarification Statement: Examples of reactions or changes could include phase changes, dissolving, and mixing that form new substances.]

[Assessment Boundary: Assessment does not include distinguishing mass and weight.]

Oregon Alternate Academic Achievement Standard (Essentialized Standard): Measure and/or compare the weight of different types of matter.

Low (L), Medium (M), High (H) Parameters:

L: Measure the weight/mass of common objects in various phases of matter using pictures of such objects (e.g., an object on a scale that weighs 3 pounds).

M: Compare the weight/mass of common objects in various stages of matter using pictures of such objects (e.g., a balloon weighs less than a rock or glass of water) or choose the correct tool to measure the weight/mass of objects.

H: Compare the weight/mass of common objects in various phases of matter using graphs and data.

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ORExt Standard Code: S05PHS1.3

Equivalent ODE Standard: 5-PS1-3

Oregon Science Standard 2022: Make observations and measurements to identify materials based on their properties.

Oregon Science Standard Clarifications/Assessment Boundary 2022:

[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.]

[Assessment Boundary: Assessment does not include density or distinguishing mass and weight.]

Oregon Alternate Academic Achievement Standard (Essentialized Standard): Identify and measure the physical properties of matter.

Low (L), Medium (M), High (H) Parameters:

L: Properties include size and shape of common objects.

M: Properties include size, shape and extend to include hardness/softness and mass of objects.

H: Properties include size, shape, hardness/softness, mass, and volume, including the use of graphs and picture representations of matter in different phases (i.e., solid, liquid, vapor/gas).

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ORExt Standard Code: S05PHS1.4
Equivalent ODE Standard: 5-PS1-4

Oregon Science Standard 2022: Conduct an investigation to determine whether the mixing of two or more substances results in new substances.

Oregon Science Standard Clarifications/Assessment Boundary 2022:

[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).]

[Assessment Boundary: Assessment does not include having students distinguish between mass and weight. This specific distinction occurs in middle grades.]

Oregon Alternate Academic Achievement Standard (Essentialized Standard): Recognize when substances are mixed together.

Low (L), Medium (M), High (H) Parameters:

L: Recognize two solids mixed together that do not form a new substance (e.g., rocks and soil, objects in sand).

M: Recognize one solid and one liquid mixed together that do not form a new substance (e.g., sand and water).

H: Picture of one solid and one liquid, two liquids or two gasses that when mixed form a new substance (e.g., salt water, fruit punch, paint, air).

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ORExt Standard Code: S05PHS2.1
Equivalent ODE Standard: 5-PS2-1

Oregon Science Standard 2022: Support an argument that the gravitational force exerted by Earth on objects is directed down.

Oregon Science Standard Clarifications/Assessment Boundary 2022:

[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.]

Oregon Alternate Academic Achievement Standard (Essentialized Standard): Recognize that gravity makes objects fall downward.

Low (L), Medium (M), High (H) Parameters:

L: Restrict questions/pictures/diagrams to asking about the direction common objects will fall when dropped (i.e., a ball moves downward when dropped).

M: Incorporate the concept of gravity into questions (i.e., similar questions as L-level, but specifically using the word "gravity").

H: Incorporate more abstract diagrams (i.e., of larger land areas/the Earth/Moon in space) with and without objects in diagrams that ask about the influence of gravity.

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ORExt Standard Code: S05PHS3.1 Equivalent ODE Standard: 5-PS3-1	
<p>Oregon Science Standard 2022: 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.</p> <p>Oregon Science Standard Clarifications/Assessment Boundary 2022: [Clarification Statement: Examples of models could include diagrams, and flow charts.] [Assessment Boundary: Assessment does not include photosynthesis or the photosynthesis reaction equation. Students should know that plants carry out photosynthesis for energy, but they do not need to know the specifics of the process or equation. Similarly, this assessment does not include the process or mechanisms for metabolism. Students should understand the relationship between animals and the food they eat to obtain energy for bodily functions, growth, and repair.]</p>	<p>Oregon Alternate Academic Achievement Standard (Essentialized Standard): Recognize that the Sun provides the Earth and living organisms with energy.</p> <p>Low (L), Medium (M), High (H) Parameters: L: Identify that the Sun (compared to other space and/or non-space objects) gives the vast majority of light and heat energy to the Earth. M: Identify that the Sun gives light and heat energy to organisms (e.g., plants and animals) on Earth for survival. H: Recognize that the Sun gives light and heat energy to plants and animals on Earth, which in turn provide humans with energy (i.e., for survival, body repair, growth and motion).</p>

Standards not Essentialized:

Please refer to Oregon’s published content standards for the full description and context of these codes.

3-5-ETS1-3