

Grade 4 Science GSE Learning Map

Prioritized Standard: S4E1.c Obtain, evaluate, and communicate information to compare and contrast the physical attributes of stars, and planets. Construct an explanation of the difference between stars and planets in the sky. *Earth Science*

Proficiency Scale	
4.0	<p>In addition to score 3.0 performance, the student demonstrates in-depth inferences and applications that go beyond what was taught. For example, the student will:</p> <p><u>Learning Target 1:</u> Develop and use a scale model of the solar system to explain the relationship between the planets and our star, the Sun <u>Learning Target 2:</u> Construct an argument supported by evidence of why Pluto was reclassified from a planet to a dwarf planet</p>
3.5	In addition to score 3.0 performance, partial success at score 4.0 content
3.0	<p>The student will</p> <p><u>Learning Target 1:</u> Construct an explanation of the difference between stars and planets in the sky</p> <p>The student exhibits no major errors or omissions.</p>
2.5	No major errors or omissions regarding score 2.0 content and partial success at score 3.0
2.0	<p>There are no major errors or omissions regarding the simpler details and processes.</p> <p>The student will recognize or recall specific vocabulary:</p> <p><u>Learning Target 1:</u> planet, star, sun, constellation, Solar System</p> <p>The student will perform basic processes:</p> <p><u>Learning Target 2:</u> Explain why some stars appear to be larger or brighter than others <u>Learning Target 3:</u> Describe the characteristics of stars in the sky <u>Learning Target 4:</u> Describe the characteristics of planets in the sky (Clarification: basic characteristics of planets with a few key details about planets in our solar system)</p> <p>However, the student exhibits major errors or omissions regarding the more complex ideas and processes.</p>
1.5	Partial success at score 2.0 content and major errors or omissions regarding score 3.0 content
1.0	With help, partial success at score 2.0 and score 3.0
0.5	With help, partial success at score 2.0 content but not at score 3.0 content
0.0	Even with help, no success

Grade 4 Science GSE Learning Map

Prioritized Standard: S4E2.b Obtain, evaluate, and communicate information to model the effects of the position and motion of the Earth and the moon in relation to the sun as observed from the Earth. Develop a model based on observations to describe the repeating pattern of the phases of the moon (new, crescent, quarter, gibbous, and full). *Earth Science*

Proficiency Scale	
4.0	<p>In addition to score 3.0 performance, the student demonstrates in-depth inferences and applications that go beyond what was taught. For example, the student will:</p> <p><u>Learning Target 1:</u> Design and conduct an investigation in order to construct an explanation of what causes the phases of the moon <u>Learning Target 2:</u> Develop and use a model to construct an explanation that describes how the position of the earth, Sun, and moon cause moon phases <u>Learning Target 3:</u> Collect moon data for a month (from the 3.0) and use that data to predict when the next full moon will occur (6 months or 1 year)</p>
3.5	In addition to score 3.0 performance, partial success at score 4.0 content
3.0	<p>The student will</p> <p><u>Learning Target 1:</u> Develop a model based on observations to describe the repeating patterns of the phases of the moon (new, crescent, quarter, gibbous, and full)</p> <p>The student exhibits no major errors or omissions.</p>
2.5	No major errors or omissions regarding score 2.0 content and partial success at score 3.0
2.0	<p>There are no major errors or omissions regarding the simpler details and processes.</p> <p>The student will recognize or recall specific vocabulary:</p> <p><u>Learning Target 1:</u> rotation, revolution, orbit, phases, new moon, crescent moon, quarter moon, gibbous moon, full moon</p> <p>The student will perform basic processes:</p> <p><u>Learning Target 2:</u> Model the revolution and rotation of the moon, Earth, and sun <u>Learning Target 3:</u> Describe the repeating pattern on the phases of the moon (new, crescent, quarter, gibbous, and full)</p> <p>However, the student exhibits major errors or omissions regarding the more complex ideas and processes.</p>
1.5	Partial success at score 2.0 content and major errors or omissions regarding score 3.0 content
1.0	With help, partial success at score 2.0 and score 3.0
0.5	With help, partial success at score 2.0 content but not at score 3.0 content
0.0	Even with help, no success

Grade 4 Science GSE Learning Map

Prioritized Standard: S4E3.b Obtain, evaluate, and communicate information to demonstrate the water cycle. Develop models to illustrate multiple pathways water may take during the water cycle (evaporation, condensation, and precipitation). (Clarification statement: Students should understand that the water cycle does not follow a single pathway.) Earth Science

Proficiency Scale	
4.0	<p>In addition to score 3.0 performance, the student demonstrates in-depth inferences and applications that go beyond what was taught. For example, the student will:</p> <p><u>Learning Target 1:</u> Develop and use a model to justify more than one pathway through the water cycle <u>Learning Target 2:</u> Make connections to water distribution in the world, drought, flooding, and extend to weather and ask questions to investigate the statement, water is both an abundant and scarce resource</p>
3.5	In addition to score 3.0 performance, partial success at score 4.0 content
3.0	<p>The student will</p> <p><u>Learning Target 1:</u> Develop models to illustrate multiple pathways water may take during the water cycle (evaporation, condensation, and precipitation) <u>Learning Target 2:</u> Construct an explanation to justify that the water cycle does not follow a single pathway</p> <p>The student exhibits no major errors or omissions.</p>
2.5	No major errors or omissions regarding score 2.0 content and partial success at score 3.0
2.0	<p>There are no major errors or omissions regarding the simpler details and processes.</p> <p>The student will recognize or recall specific vocabulary:</p> <p><u>Learning Target 1:</u> water cycle, water vapor, evaporation, precipitation, condensation</p> <p>The student will perform basic processes:</p> <p><u>Learning Target 2:</u> Recall situations where you see evaporation, precipitation, and condensation <u>Learning Target 3:</u> Identify water changes from solid to a liquid to a gas and changes from a gas to a liquid to a solid</p> <p>However, the student exhibits major errors or omissions regarding the more complex ideas and processes.</p>
1.5	Partial success at score 2.0 content and major errors or omissions regarding score 3.0 content
1.0	With help, partial success at score 2.0 and score 3.0
0.5	With help, partial success at score 2.0 content but not at score 3.0 content
0.0	Even with help, no success

Grade 4 Science GSE Learning Map

Prioritized Standard: S4E4.b Obtain, evaluate, and communicate information using weather charts/maps and collect weather data to predict weather events and infer weather patterns. Interpret data from weather maps to identify fronts (warm, cold, and stationary), temperature, and precipitation to make an informed prediction about tomorrow's weather. *Earth Science*

Proficiency Scale	
4.0	<p>In addition to score 3.0 performance, the student demonstrates in-depth inferences and applications that go beyond what was taught. For example, the student will:</p> <p><u>Learning Target 1:</u> Interpret weather data for several weeks in different regions. Develop patterns and justifications about the climate in each region <u>Learning Target 2:</u> Research three cities around the world and compare the climates, justifying the conditions that make them different</p>
3.5	In addition to score 3.0 performance, partial success at score 4.0 content
3.0	<p>The student will</p> <p><u>Learning Target 1:</u> Interpret data from weather maps to identify fronts (warm, cold, stationary), temperature, and precipitation to make an informed prediction about tomorrow's weather</p> <p>The student exhibits no major errors or omissions.</p>
2.5	No major errors or omissions regarding score 2.0 content and partial success at score 3.0
2.0	<p>There are no major errors or omissions regarding the simpler details and processes.</p> <p>The student will recognize or recall specific vocabulary:</p> <p><u>Learning Target 1:</u> temperature, air masses, front, climate, warm front, cold front</p> <p>The student will perform basic processes:</p> <p><u>Learning Target 2:</u> Accurately collect data using different weather instruments (rain gauge, thermometer, barometer, wind vane, anemometer)</p> <p>However, the student exhibits major errors or omissions regarding the more complex ideas and processes.</p>
1.5	Partial success at score 2.0 content and major errors or omissions regarding score 3.0 content
1.0	With help, partial success at score 2.0 and score 3.0
0.5	With help, partial success at score 2.0 content but not at score 3.0 content
0.0	Even with help, no success

Grade 4 Science GSE Learning Map

Prioritized Standard: S4L1.d Obtain, evaluate, and communicate information about the roles of organisms and the flow of energy within an ecosystem. Use printed and digital data to develop a model illustrating and describing changes to the flow of energy in an ecosystem when plants or animals become scarce, extinct, or over-abundant. *Life Science*

Proficiency Scale	
4.0	<p>In addition to score 3.0 performance, the student demonstrates in-depth inferences and applications that go beyond what was taught. For example, the student will:</p> <p><u>Learning Target 1:</u> Analyze data from charts and/or graphs to justify the relationship between the producers and consumers in a specific ecosystem</p>
3.5	In addition to score 3.0 performance, partial success at score 4.0 content
3.0	<p>The student will</p> <p><u>Learning Target 1:</u> Use printed and digital data to develop a model illustrating changes to the flow of energy in an ecosystem when plants or animals become scarce, extinct, or overabundant</p> <p>The student exhibits no major errors or omissions.</p>
2.5	No major errors or omissions regarding score 2.0 content and partial success at score 3.0
2.0	<p>There are no major errors or omissions regarding the simpler details and processes.</p> <p>The student will recognize or recall specific vocabulary:</p> <p><u>Learning Target 1:</u> habitat, producers, consumers, decomposers, prey, predator, food web, extinct, scarce, overabundant</p> <p>The student will perform basic processes:</p> <p><u>Learning Target 2:</u> Describe how energy flows in an ecosystem</p> <p><u>Learning Target 3:</u> Identify reasons plants or animals become scarce, extinct, or overabundant</p> <p>However, the student exhibits major errors or omissions regarding the more complex ideas and processes.</p>
1.5	Partial success at score 2.0 content and major errors or omissions regarding score 3.0 content
1.0	With help, partial success at score 2.0 and score 3.0
0.5	With help, partial success at score 2.0 content but not at score 3.0 content
0.0	Even with help, no success

Grade 4 Science GSE Learning Map

Prioritized Standard: S4P1.b Obtain, evaluate, and communicate information about the nature of light and how light interacts with objects. Plan and carry out investigations on the path light travels from a light source to a mirror and how it is reflected by the mirror using different angles. *Physical Science*

Proficiency Scale	
4.0	<p>In addition to score 3.0 performance, the student demonstrates in-depth inferences and applications that go beyond what was taught. For example, the student will:</p> <p><u>Learning Target 1:</u> Plan and carry out an investigation to analyze how the change in the light source angle is related to the change of the path of light when reflected off a mirror</p>
3.5	In addition to score 3.0 performance, partial success at score 4.0 content
3.0	<p>The student will</p> <p><u>Learning Target 1:</u> Plan and carry out investigations on the path light travels from a light source to a mirror</p> <p><u>Learning Target 2:</u> Plan and carry out an investigation on how light is reflected by the mirror using different angles</p> <p>The student exhibits no major errors or omissions.</p>
2.5	No major errors or omissions regarding score 2.0 content and partial success at score 3.0
2.0	<p>There are no major errors or omissions regarding the simpler details and processes.</p> <p>The student will recognize or recall specific vocabulary:</p> <p><u>Learning Target 1:</u> reflection, translucent, transparent, opaque</p> <p>The student will perform basic processes:</p> <p><u>Learning Target 2:</u> Identify the patterns of what light does when shone on different materials with different characteristics</p> <p>However, the student exhibits major errors or omissions regarding the more complex ideas and processes.</p>
1.5	Partial success at score 2.0 content and major errors or omissions regarding score 3.0 content
1.0	With help, partial success at score 2.0 and score 3.0
0.5	With help, partial success at score 2.0 content but not at score 3.0 content
0.0	Even with help, no success

Grade 4 Science GSE Learning Map

Prioritized Standard: S4P1.c Obtain, evaluate, and communicate information about the nature of light and how light interacts with objects. Plan and carry out an investigation utilizing everyday materials to explore examples of when light is refracted. (Clarification statement: Everyday materials could include prisms, eyeglasses, and a glass of water.) *Physical Science*

Proficiency Scale	
4.0	<p>In addition to score 3.0 performance, the student demonstrates in-depth inferences and applications that go beyond what was taught. For example, the student will:</p> <p><u>Learning Target 1:</u> Construct an explanation for the phenomena of a rainbow forming in the sky</p>
3.5	In addition to score 3.0 performance, partial success at score 4.0 content
3.0	<p>The student will</p> <p><u>Learning Target 1:</u> Plan and carry out an investigation utilizing everyday materials to explore examples of when light is refracted (prisms, eyeglasses, and a glass of water)</p> <p>The student exhibits no major errors or omissions.</p>
2.5	No major errors or omissions regarding score 2.0 content and partial success at score 3.0
2.0	<p>There are no major errors or omissions regarding the simpler details and processes.</p> <p>The student will recognize or recall specific vocabulary:</p> <p><u>Learning Target 1:</u> refraction, concave lens, convex lens</p> <p>The student will perform basic processes:</p> <p><u>Learning Target 2:</u> Observe how light is refracted when it interacts with everyday objects</p> <p>However, the student exhibits major errors or omissions regarding the more complex ideas and processes.</p>
1.5	Partial success at score 2.0 content and major errors or omissions regarding score 3.0 content
1.0	With help, partial success at score 2.0 and score 3.0
0.5	With help, partial success at score 2.0 content but not at score 3.0 content
0.0	Even with help, no success

Grade 4 Science GSE Learning Map

Prioritized Standard: S4P2.a Obtain, evaluate, and communicate information about how sound is produced and changed and how sound and/or light can be used to communicate. Plan and carry out an investigation utilizing everyday objects to produce sound and predict the effects of changing the strength or speed of vibrations. *Physical Science*

Proficiency Scale	
4.0	<p>In addition to score 3.0 performance, the student demonstrates in-depth inferences and applications that go beyond what was taught. For example, the student will:</p> <p><u>Learning Target 1:</u> Design and construct an instrument that can play multiple pitches and change volume</p>
3.5	In addition to score 3.0 performance, partial success at score 4.0 content
3.0	<p>The student will</p> <p><u>Learning Target 1:</u> Plan and carry out an investigation utilizing everyday objects to produce sound and predict the effects of changing the strength (volume) or speed (pitch) of vibrations</p> <p>The student exhibits no major errors or omissions.</p>
2.5	No major errors or omissions regarding score 2.0 content and partial success at score 3.0
2.0	<p>There are no major errors or omissions regarding the simpler details and processes.</p> <p>The student will recognize or recall specific vocabulary:</p> <p><u>Learning Target 1:</u> vibration, volume, pitch, frequency, sound</p> <p>The student will perform basic processes:</p> <p><u>Learning Target 2:</u> Make observations on how sound is produced</p> <p><u>Learning Target 3:</u> Recognize the conditions that cause pitch to vary</p> <p>However, the student exhibits major errors or omissions regarding the more complex ideas and processes.</p>
1.5	Partial success at score 2.0 content and major errors or omissions regarding score 3.0 content
1.0	With help, partial success at score 2.0 and score 3.0
0.5	With help, partial success at score 2.0 content but not at score 3.0 content
0.0	Even with help, no success

Grade 4 Science GSE Learning Map

Prioritized Standard: S4P3.b Obtain, evaluate, and communicate information about the relationship between balanced and unbalanced forces. Construct an argument to support the claim that the gravitational force affects the motion of an object. *Physical Science*

Proficiency Scale	
4.0	<p>In addition to score 3.0 performance, the student demonstrates in-depth inferences and applications that go beyond what was taught. For example, the student will:</p> <p><u>Learning Target 1:</u> Develop and use a model to explain how gravitational force affects the motion of an object <u>Learning Target 2:</u> Research and analyze data from tables and graphs to help support the claim that gravitational forces affect the motion of an object</p>
3.5	In addition to score 3.0 performance, partial success at score 4.0 content
3.0	<p>The student will</p> <p><u>Learning Target 1:</u> Construct an argument to support the claim that the gravitational force affects the motion of an object</p> <p>The student exhibits no major errors or omissions.</p>
2.5	No major errors or omissions regarding score 2.0 content and partial success at score 3.0
2.0	<p>There are no major errors or omissions regarding the simpler details and processes.</p> <p>The student will recognize or recall specific vocabulary:</p> <p><u>Learning Target 1:</u> position, motion, speed, balanced force, unbalanced force, gravity, weight, friction</p> <p>The student will perform basic processes:</p> <p><u>Learning Target 2:</u> Demonstrate the effects of gravitational force on the motion of an object <u>Learning Target 3:</u> Demonstrate gravity, friction, motion, speed <u>Learning Target 4:</u> Plan and carry out an investigation on the effects of balanced and unbalanced forces on an object and communicate the results (S4P3a)</p> <p>However, the student exhibits major errors or omissions regarding the more complex ideas and processes.</p>
1.5	Partial success at score 2.0 content and major errors or omissions regarding score 3.0 content
1.0	With help, partial success at score 2.0 and score 3.0
0.5	With help, partial success at score 2.0 content but not at score 3.0 content
0.0	Even with help, no success

Grade 4 Science GSE Learning Map

Prioritized Standard: S4P3.c Obtain, evaluate, and communicate information about the relationship between balanced and unbalanced forces. Ask questions to identify and explain the uses of simple machines (lever, pulley, wedge, inclined plane, wheel and axle, and screw) and how forces are changed when simple machines are used to complete tasks. (Clarification statement: The use of mathematical formulas is not expected.) *Physical Science*

Proficiency Scale	
4.0	<p>In addition to score 3.0 performance, the student demonstrates in-depth inferences and applications that go beyond what was taught. For example, the student will:</p> <p><u>Learning Target 1:</u> Apply understanding of simple machines to create a compound machine using at least two simple machines <u>Learning Target 2:</u> Conclude from observations how forces are changed when simple machines are used to complete tasks <u>Learning Target 3:</u> Justify how the machine works</p>
3.5	In addition to score 3.0 performance, partial success at score 4.0 content
3.0	<p>The student will</p> <p><u>Learning Target 1:</u> Identify and explain the uses of simple machines <u>Learning Target 2:</u> Identify and explain how forces are changed when simple machines are used to complete tasks</p> <p>The student exhibits no major errors or omissions.</p>
2.5	No major errors or omissions regarding score 2.0 content and partial success at score 3.0
2.0	<p>There are no major errors or omissions regarding the simpler details and processes.</p> <p>The student will recognize or recall specific vocabulary:</p> <p><u>Learning Target 1:</u> work, simple machines, lever, fulcrum, pulley, wheel and axle, inclined plane, screw, wedge</p> <p>The student will perform basic processes:</p> <p><u>Learning Target 2:</u> Observe and identify simple machines found in the classroom</p> <p>However, the student exhibits major errors or omissions regarding the more complex ideas and processes.</p>
1.5	Partial success at score 2.0 content and major errors or omissions regarding score 3.0 content
1.0	With help, partial success at score 2.0 and score 3.0
0.5	With help, partial success at score 2.0 content but not at score 3.0 content
0.0	Even with help, no success