

Content Area: Science

Strand: Matter and Energy		Missouri GLEs ME1D
Reporting Topic: Properties of Objects		
Grade: 3		
Score 4.0	In addition to Score 3.0, in-depth inferences or applications that go beyond level 3.0. For example, the student may: <ul style="list-style-type: none"> • be able to teach procedures of testing physical properties of the states of matter. • make an accurate prediction in a different situation using the properties of matter. • be able to identify patterns when water changes between the states of matter. • make an accurate prediction based knowledge of the effect of heat and color. 	
	3.5	In addition to 3.0 performance, in-depth inferences and applications with partial success.
Score 3.0	The student will: <ul style="list-style-type: none"> • compare observable physical properties (shape and volume) of solids, liquids, and gases and describe the changes when an object evaporates, freezes or melts. • predict and investigate the effect of heat (thermal energy) (i.e. change in temperature, melting, evaporation) on objects and materials. • measure and compare the temperature of water when it exists as a solid to its temperature when it exists as a liquid; observe that water can change from a liquid to a solid (freeze), and back again to a liquid (melt) as a result of the temperature change. The student exhibits no major errors or gaps in the learning goal (complex ideas and processes).	
	2.5	No major errors or gaps in 2.0 content and partial knowledge in 3.0 content.
Score 2.0	The student will: <ul style="list-style-type: none"> • identify substances as solids, liquids or gases • identify the effects of heat on water • recognize or recall specific terminology: <ul style="list-style-type: none"> ○ evaporation ○ physical change ○ states of matter ○ thermal energy The student exhibits no major errors or gaps in the simpler details and processes.	
	1.5	Partial understanding of the 2.0 content with major errors or gaps in 3.0 content.
Score 1.0	With help, a partial understanding of the 2.0 content and some of the 3.0 content.	
	0.5	With help, a partial understanding of the 2.0 content and none of the 3.0 content.
Score 0.0	Even with help, no understanding or skill demonstrated.	

4.0 Example Assessment Items

- Explain how you would test that the physical properties of solids, liquids, and gases change when an object evaporates, freezes or melts.
- Student generates hypothesis about the physical properties of rubbing alcohol when it is heated or frozen
- Create a line graph to analyze the temperature change as water changes from liquid to solid and solid to liquid. Use the data from the line graph to explain your observations.
- Student can make and defend predictions about what might happen if heat is applied to black construction versus white construction paper.

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3.0 Example Assessment Items

- Categorize into descriptive groups the physical properties of solids, liquids, and gases (e.g., when objects evaporate, freeze or melt).
- Predict and investigate the effect of thermal energy: water changing from one state of matter to another by placing a cup of water in the sun for an extended amount of time (liquid to gas); placing an ice cube in the sun (solid to liquid). Students will observe and compare the types of changes.

2.0 Example Assessment Items

- Create a three-column chart with headings: solids, liquids, gases; give examples of each.
- List what happens when water as a solid is melted and water as a liquid is frozen.

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Strand: Matter and Energy		Missouri GLEs ME2A, ME2C
Reporting Topic: Forms of Energy		
Grade: 3		
Score 4.0	In addition to Score 3.0, in-depth inferences or applications that go beyond level 3.0. For example, the student may: <ul style="list-style-type: none"> connect generalizations of light transfers to real-life situations. investigate relationships between light transfers and other energy transfers. identify relationships between the sources of light energy and thermal energy. 	
	3.5	In addition to 3.0 performance, in-depth inferences and applications with partial success.
Score 3.0	The student will: <ul style="list-style-type: none"> describe how the sources of light energy (e.g., sun, bulbs, and flames) and thermal energy (e.g., sun, stove, fire, body) can cause solids to change to liquids and liquids to change to gas. describe the primary source of light and food energy on Earth (the sun). The student exhibits no major errors or gaps in the learning goal (complex ideas and processes).	
	2.5	No major errors or gaps in 2.0 content and partial knowledge in 3.0 content.
Score 2.0	The student will: <ul style="list-style-type: none"> identify sources of light energy (sun, bulbs, flames). identify the sun as the primary source of light and food energy on Earth. recognize or recall specific terminology: <ul style="list-style-type: none"> chemical change physical change The student exhibits no major errors or gaps in the simpler details and processes.	
	1.5	Partial understanding of the 2.0 content with major errors or gaps in 3.0 content.
Score 1.0	With help, a partial understanding of the 2.0 content and some of the 3.0 content.	
	0.5	With help, a partial understanding of the 2.0 content and none of the 3.0 content.
Score 0.0	Even with help, no understanding or skill demonstrated.	

4.0 Example Assessment Items

- Investigate how to determine the exact temperature that light energy sources and thermal energy sources cause solids to change to liquids and liquids to gas.
- Create a three-tab Venn Diagram to compare and contrast how light energy and thermal energy cause solids to change to liquids and liquids to gas.
- Write a hypothesis describing what would happen to the Earth if the primary source of light was non-existent.

3.0 Example Assessment Items

- Create a diagram to describe how light energy and thermal energy cause solids to change to liquids and liquids to gas.
- Describe why the primary source of light is necessary for life on Earth.

2.0 Example Assessment Items

- When given a teacher-created list of examples of light energy sources and thermal energy sources, students must identify as light and/or thermal.
- Student can name the primary source of light and food energy.

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Strand: Living Organisms		Missouri GLEs LO1A, LO1B, LO1D, LO2C
Reporting Topic: Plants and Animals		
Grade: 3		
Score 4.0	<p>In addition to Score 3.0, in-depth inferences or applications that go beyond level 3.0. For example, the student may:</p> <ul style="list-style-type: none"> investigate and infer new generalizations based upon known knowledge. create an analogy to compare and contrast plants and humans. create a scenario to determine an appropriate environment for a living organism. create an analogy to compare and contrast animal habitats to plant environments. 	
	3.5	In addition to 3.0 performance, in-depth inferences and applications with partial success.
Score 3.0	<p>The student will:</p> <ul style="list-style-type: none"> describe the functions of the major organs (e.g., roots, stems, flowers, leaves) in vascular plants. illustrate and trace the path of water and nutrients as they move through the transport system of a plant. describe the basic needs of most plants (e.g., air, water, light, nutrients, temperature). describe and sequence the stages in the life cycle of a plant through germination, growth and development, reproduction, and death (e.g., a flowering plant). discriminate between plants and their offspring. <p>The student exhibits no major errors or gaps in the learning goal (complex ideas and processes).</p>	
	2.5	No major errors or gaps in 2.0 content and partial knowledge in 3.0 content.
Score 2.0	<p>The student will:</p> <ul style="list-style-type: none"> identify the functions of the major organs (e.g., roots, stems, flowers, leaves) in vascular plants (e.g., absorption, transport, reproduction). identify the basic needs of most plants. identify the stages in the life cycle for a plant. identify the characteristics of plants and the characteristics of their offspring. recognize or recall specific terminology: <ul style="list-style-type: none"> germination nutrients photosynthesis seedling <p>The student exhibits no major errors or gaps in the simpler details and processes.</p>	
	1.5	Partial understanding of the 2.0 content with major errors or gaps in 3.0 content.
Score 1.0	With help, a partial understanding of the 2.0 content and some of the 3.0 content.	
	0.5	With help, a partial understanding of the 2.0 content and none of the 3.0 content.
Score 0.0	Even with help, no understanding or skill demonstrated.	

4.0 Example Assessment Items

- Use a real plant to test and explain the result of a damaged organ (e.g., root, stem, flower, leaf). Students will write a constructed response describing the outcome.
- Complete and explain the following analogy: Water/ nutrients are to plants as _____ are to humans.
- Conduct a scientific investigation to determine the best and worst environments for a plant to grow.
- Compare and contrast the features of the life cycle of a plant and the life cycle of an animal.
- Compare and contrast adult butterflies and caterpillars to adult plants and their offspring.

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3.0 Example Assessment Items

- Create a graphic organizer to illustrate and label the major plant organs. Describe the function of each plant organ.
- Create a diagram with a picture of the plant. Arrows can illustrate how water and nutrients move throughout the plant.
- Summarize the basic needs of a plant, explaining why each is necessary for the survival of the plant. (e.g., air, water, light, nutrients, temperature).
- Create a flow chart describing the stages in the life cycle of seed germination, growth and development, reproduction and death for a plant.
- Create a comic strip that describes the life cycle stages in sequential order.
- Create a graphic organizer to compare and contrast adult plants and their offspring.

2.0 Example Assessment Items

- Using an illustration of a plant, have students label each major organ. Students can match the major organ with its function.
- Students should list the basic needs of most plants.
- Students name the stages in the life cycle of a plant.
- Students complete a T-Chart listing the characteristics of plants and the characteristics of the offspring.

Content Area: Science

Strand: Ecology		Missouri GLEs EC2A
Reporting Topic: Ecosystems		
Grade: 3		
Score 4.0	<p>In addition to Score 3.0, in-depth inferences or applications that go beyond level 3.0. For example, the student may:</p> <ul style="list-style-type: none"> make and defend predictions about what might happen if there was a sudden change within an ecosystem. compare and contrast the elements of air on Earth to those on another planet. 	
	3.5	In addition to 3.0 performance, in-depth inferences and applications with partial success.
 Score 3.0	<p>The student will:</p> <ul style="list-style-type: none"> classify populations of organisms as producers or consumers by the role they serve in the ecosystem. sequence the flow of energy through a food chain beginning with the sun. predict the possible effects of removing an organism from a food chain. <p>The student exhibits no major errors or gaps in the learning goal (complex ideas and processes).</p>	
	2.5	No major errors or gaps in 2.0 content and partial knowledge in 3.0 content.
Score 2.0	<p>The student will:</p> <ul style="list-style-type: none"> identify organisms as producers or consumers. identify sunlight as the primary source of energy plants use to produce their own food. recognize that there would be an effect of removing an organism from a food chain. recognize or recall specific terminology: <ul style="list-style-type: none"> adaptation consumer ecosystem food chain organism predator prey producer <p>The student exhibits no major errors or gaps in the simpler details and processes.</p>	
	1.5	Partial understanding of the 2.0 content with major errors or gaps in 3.0 content.
Score 1.0	With help, a partial understanding of the 2.0 content and some of the 3.0 content.	
	0.5	With help, a partial understanding of the 2.0 content and none of the 3.0 content.
Score 0.0	Even with help, no understanding or skill demonstrated.	

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4.0 Example Assessment Items

- Predict what would have to happen if a new business was built in an area heavily populated with consumers.
- Using a diagram with illustrations and descriptors, explain the result of a decreased amount of sunlight (primary source of energy) on the food chain.
- Using a diagram with illustrations and descriptors, explain the result of adding a particular consumer to an ecosystem.

3.0 Example Assessment Items

- Students create a picture notebook diagram using a magazine picture, computer-generated diagram, or student-drawn graphic of plants and animals in a specific ecosystem. Underneath each tab, the students can label the producers and consumers.
- Students create a flow chart that shows an example of a food chain beginning with the sun. Using information from the flow chart, the student must write one-two sentences explaining each organism's role, including sunlight as the primary energy source.
- Students predict and write what could happen if an organism is removed from a food chain. Explain their reasoning.

2.0 Example Assessment Items

- Given a list of plants and animals, students will match with either producer or consumer.
- Using a teacher-prepared flow chart, students will complete the information needed to create an example of a food chain.
- When given a teacher-prepared list of possible effects when removing an organism from a food chain, student must be able to identify the correct effects.
- Identify or produce definitions to given terms.

Content Area: Science

Strand: Earth's Systems		Missouri GLEs ES1C, ES2E,
Reporting Topic: Atmosphere, Weather, and Climate		
Grade: 3		
Score 4.0	In addition to Score 3.0, in-depth inferences or applications that go beyond level 3.0. For example, the student may: <ul style="list-style-type: none"> infer new generalizations based upon known knowledge of the different forms of water. compare and contrast the elements of air on Earth to those on another planet. describe and trace the path of water as it cycles. 	
	3.5	In addition to 3.0 performance, in-depth inferences and applications with partial success.
Score 3.0	The student will: <ul style="list-style-type: none"> describe characteristics of air (e.g., a substance that surrounds us, taking up space, and moves around us as wind). describe how liquid water can be changed into a gas (vapor) in the air. describe clouds and precipitation as forms of water. The student exhibits no major errors or gaps in the learning goal (complex ideas and processes).	
	2.5	No major errors or gaps in 2.0 content and partial knowledge in 3.0 content.
Score 2.0	The student will: <ul style="list-style-type: none"> recognize the different forms of water. identify that clouds are composed of tiny droplets of water. recognize or recall specific terminology: <ul style="list-style-type: none"> evaporation vapor The student exhibits no major errors or gaps in the simpler details and processes.	
	1.5	Partial understanding of the 2.0 content with major errors or gaps in 3.0 content.
Score 1.0	With help, a partial understanding of the 2.0 content and some of the 3.0 content.	
	0.5	With help, a partial understanding of the 2.0 content and none of the 3.0 content.
Score 0.0	Even with help, no understanding or skill demonstrated.	

4.0 Example Assessment Items

- Describe the characteristics of the air and/or atmosphere of the surround planets-Venus and Mars. Compare these characteristics to the Earth's characteristics of air.
- Identify problems and issues if an area of land and water had too much precipitation.
- Place a small amount of water in a bowl in the sun. Track and chart the time and temperature of the water throughout the day. Analyze and explain the results.
- Students will draw a diagram of the water cycle and label evaporation, condensation, and precipitation.

3.0 Example Assessment Items

- Demonstrate air taking up space with an experiment. Students must write a Prediction/Outcome T-chart with their predictions and results. Students explain their reasoning for their prediction.
- Students explain ways in which water changes form by creating a poster with illustrations and labels or descriptors (e.g., solid, liquid, gas).
- When given illustrations (e.g., pot of water boiling on stove, puddle of water in sun), students will recognize these as examples of liquid water changing to gas (evaporation).

Content Area: Science

2.0 Example Assessment Items

- From a given list, students will identify elements of air.
- Students will select the correct choices from a list of the different forms of water.
- When given a teacher-prepared three-column chart with some items completed, students will fill in the remaining parts of the chart with the appropriate information to identify examples of evaporation, condensation, and precipitation.
- Orally describe the composition of clouds.

Content Area: Science

Strand: Universe		Missouri GLEs UN1A
Reporting Topic: Solar System		
Grade: 3		
Score 4.0	In addition to Score 3.0, in-depth inferences or applications that go beyond level 3.0. For example, the student may: <ul style="list-style-type: none"> classify the characteristics of objects within the universe. infer and create conditions necessary for life for sustainable life on their created planet. 	
	3.5	In addition to 3.0 performance, in-depth inferences and applications with partial success.
 Score 3.0	The student will: <ul style="list-style-type: none"> describe the characteristics of the sun and moon (e.g., our sun is a star because it provides light energy to the solar system and our moon is a reflection of sunlight). The student exhibits no major errors or gaps in the learning goal (complex ideas and processes).	
	2.5	No major errors or gaps in 2.0 content and partial knowledge in 3.0 content.
Score 2.0	The student will: <ul style="list-style-type: none"> recognize the characteristics of the sun and moon. The student exhibits no major errors or gaps in the simpler details and processes.	
	1.5	Partial understanding of the 2.0 content with major errors or gaps in 3.0 content.
Score 1.0	With help, a partial understanding of the 2.0 content and some of the 3.0 content.	
	0.5	With help, a partial understanding of the 2.0 content and none of the 3.0 content.
Score 0.0	Even with help, no understanding or skill demonstrated.	

4.0 Example Assessment Items

- Using a comparison matrix, compare and contrast the physical characteristics of the sun, moon, and planets including Earth.
- Based upon what you know, create a new planet describing properties and characteristics that would support life.

3.0 Example Assessment Items

- Students create Venn Diagram comparing and contrasting descriptions of the sun and the moon.

2.0 Example Assessment Items

- Students will complete a teacher-prepared matching activity to match characteristics of the sun and the moon.

Content Area: Science

Strand: Universe		Missouri GLEs UN2A, UN2B, UN2C
Reporting Topic: Motion of Objects in the Universe (1)		
Grade: 3		
Score 4.0	In addition to Score 3.0, in-depth inferences or applications that go beyond level 3.0. For example, the student may: <ul style="list-style-type: none"> research the defining features of the sun and moon in comparison to other celestial bodies. research and generalize your findings when defining the features of a lunar eclipse in comparison to the sun and moon. demonstrate the process of steps involved in producing a shadow. demonstrate an understanding of how to produce shadows and can infer problems if not followed correctly. 	
	3.5	In addition to 3.0 performance, in-depth inferences and applications with partial success.
Score 3.0	The student will: <ul style="list-style-type: none"> illustrate and describe how the sun and moon appears to move slowly across the sky from east to west during the day and/or night. describe the pattern of change that can be observed in the moon's appearance relative to the time of day and month as it occurs over several months. (GLE states do NOT access moon phases.) explain why a light source, object, and surface are necessary to produce a shadow. The student exhibits no major errors or gaps in the learning goal (complex ideas and processes).	
	2.5	No major errors or gaps in 2.0 content and partial knowledge in 3.0 content.
Score 2.0	The student will: <ul style="list-style-type: none"> recognize that the sun and moon appear to move across the sky. recognize that there is a pattern of change in the moon's appearance. identify the three things (e.g., light source, object, surface) necessary to produce a shadow. recognize or recall specific terminology: <ul style="list-style-type: none"> shadow reflector The student exhibits no major errors or gaps in the simpler details and processes.	
	1.5	Partial understanding of the 2.0 content with major errors or gaps in 3.0 content.
Score 1.0	With help, a partial understanding of the 2.0 content and some of the 3.0 content.	
	0.5	With help, a partial understanding of the 2.0 content and none of the 3.0 content.
Score 0.0	Even with help, no understanding or skill demonstrated.	

4.0 Example Assessment Items

- Students draw a diagram that shows the movement of the sun and moon in comparison to other celestial bodies in the solar system.
- Students draw a diagram of a lunar eclipse and write a summary describing the relationship between a lunar eclipse and the sun and moon.
- Create a flow chart to analyze each step involved in producing a shadow. Use the information in the flow chart to explain your reasoning.
- Student can infer what would happen if the necessary items in producing a shadow are not available.

Content Area: Science

3.0 Example Assessment Items

- Students create a diagram of sun and moon moving across the sky from east to west during the day and/or night with appropriate labels.
- Students chart the pattern of change that can be observed in the moon's appearance relative to the time of day and month over several months.
- Students must demonstrate how three items are necessary to produce a shadow (e.g., flashlight/light source, student's hand/object and blank wall/surface) and explain their reasoning.

2.0 Example Assessment Items

- Using a model of the sun and moon, students will orally explain how they move across the sky.
- Students will select from a list how the moon's appearance can change.
- Student can list the items needed to produce a shadow.

Content Area: Science

Strand: Universe		Missouri GLEs UN2C
Reporting Topic: Motion of the Objects in the Universe (2)		
Grade: 3		
Score 4.0	In addition to Score 3.0, in-depth inferences or applications that go beyond level 3.0. For example, the student may: <ul style="list-style-type: none"> investigate and generalize length and position of shadows cast at different times throughout the day. 	
	3.5	In addition to 3.0 performance, in-depth inferences and applications with partial success.
Score 3.0	The student will: <ul style="list-style-type: none"> describe changes in length and position (direction) of shadows from morning to midday to afternoon. describe how the Sun's position in the sky changes the length and position of shadows. describe how light is transferred from the source to the receiver (eye) through space. The student exhibits no major errors or gaps in the learning goal (complex ideas and processes).	
	2.5	No major errors or gaps in 2.0 content and partial knowledge in 3.0 content.
Score 2.0	The student will: <ul style="list-style-type: none"> observe and identify there is a day/night cycle every 24 hours. recognize that shadows can vary in length and position. recognize or recall specific terminology: <ul style="list-style-type: none"> shadow The student exhibits no major errors or gaps in the simpler details and processes.	
	1.5	Partial understanding of the 2.0 content with major errors or gaps in 3.0 content.
Score 1.0	With help, a partial understanding of the 2.0 content and some of the 3.0 content.	
	0.5	With help, a partial understanding of the 2.0 content and none of the 3.0 content.
Score 0.0	Even with help, no understanding or skill demonstrated.	

4.0 Example Assessment Items

- Students will measure the length and direction of the shadow cast by a swing set (or other piece of playground equipment) throughout the day. They will track and chart actual measurement changes of a shadow based on the position of the sun. This information can be placed in a line graph and students can analyze and justify the results of the data.
- How would this apply to the tilt of the earth in different locations throughout the world?
- Research how an optometrist would use the concept of light transferring from the source to the receiver (eye) to help individuals.
- Compare and contrast light transfers and sound transfers to the receiver.

3.0 Example Assessment Items

- Students create a graphic organizer. They must list the different times (e.g., morning, midday, afternoon) and include a written description of the shadow, a picture, and explanation of the role of the sun to each shadow.
- Illustrate and label in a poster how various sources of light energy (e.g., light bulb, candle, flash light, sun) are transferred to the receiver (eye).

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2.0 Example Assessment Items

- Students will create a daily schedule or timeline beginning with a morning time (7:00 a.m.) and ending at an evening time (10:00 p.m.) and summarize in a written paragraph how this schedule relates to the 24 hour cycle.
- Students will determine if a shadow picture of a specific time of day (e.g., morning, midday, afternoon) is correct.

Content Area: Science

Strand: Scientific Inquiry		Missouri GLEs IN1A, ST3A
Reporting Topic: Developing Investigations		
Grade: 3		
Score 4.0	<p>In addition to Score 3.0, in-depth inferences or applications that go beyond level 3.0. For example, the student may:</p> <ul style="list-style-type: none"> investigate new knowledge by developing a question based upon new generalizations and principles. 	
	3.5	In addition to 3.0 performance, in-depth inferences and applications with partial success.
 Score 3.0	<p>The student will:</p> <ul style="list-style-type: none"> pose questions about objects, materials, organisms and events in the environment. identify a question that was asked, or could be asked, or a problem-that needed to be solved when given a brief scenario (e.g., fiction or non-fiction of people working alone or in groups solving everyday problems or learning through discovery). <p>The student exhibits no major errors or gaps in the learning goal (complex ideas and processes).</p>	
	2.5	No major errors or gaps in 2.0 content and partial knowledge in 3.0 content.
Score 2.0	<p>The student will:</p> <ul style="list-style-type: none"> recognize an example of a question that would be appropriate when developing an investigation. recognize or recall specific terminology: <ul style="list-style-type: none"> scientific inquiry <p>The student exhibits no major errors or gaps in the simpler details and processes.</p>	
	1.5	Partial understanding of the 2.0 content with major errors or gaps in 3.0 content.
Score 1.0	With help, a partial understanding of the 2.0 content and some of the 3.0 content.	
	0.5	With help, a partial understanding of the 2.0 content and none of the 3.0 content.
Score 0.0	Even with help, no understanding or skill demonstrated.	

4.0 Example Assessment Items

- Take a position on an alternate scenario, and formulate appropriate questions prior to investigation and find evidence to support your theory. (e.g., what would have happened if...? How did it happen? How would you test it?)

3.0 Example Assessment Items

- Students will formulate research questions prior to observing and understanding an investigation.

2.0 Example Assessment Items

- While performing the habitat experiment, students will select from a list appropriate questions about an investigation.

Content Area: Science

Strand: Scientific Inquiry		Missouri GLEs IN1A, IN1B
Reporting Topic: Conducting Investigations		
Grade: 3		
Score 4.0	In addition to Score 3.0, in-depth inferences or applications that go beyond level 3.0. For example, the student may: <ul style="list-style-type: none"> predict and generalize the results of the original experimental design if a variable changes. connect generalizations and relate to other situation. 	
	3.5	In addition to 3.0 performance, in-depth inferences and applications with partial success.
 Score 3.0	The student will: <ul style="list-style-type: none"> plan and conduct a fair test to answer a question. make qualitative observations using the five senses. make observations using simple tools and equipment (e.g., hand lenses, magnets, thermometers, metric rulers, balances, graduated cylinders). measure length to the nearest centimeter, mass using grams, temperature using degrees Celsius, and volume using liters. compare amounts/measurements and judge whether the measurements and computation of quantities are reasonable. <p>The student exhibits no major errors or gaps in the learning goal (complex ideas and processes).</p>	
	2.5	No major errors or gaps in 2.0 content and partial knowledge in 3.0 content.
Score 2.0	The student will: <ul style="list-style-type: none"> identify examples of tools that are used when conducting a scientific inquiry. identify appropriate standards of measurement for length, mass, temperature and volume. recognize examples of reasonable amounts and measurements. <p>The student exhibits no major errors or gaps in the simpler details and processes.</p>	
	1.5	Partial understanding of the 2.0 content with major errors or gaps in 3.0 content.
Score 1.0	With help, a partial understanding of the 2.0 content and some of the 3.0 content.	
	0.5	With help, a partial understanding of the 2.0 content and none of the 3.0 content.
Score 0.0	Even with help, no understanding or skill demonstrated.	

4.0 Example Assessment Items

- Student conducts investigation with change in a variable and explains possible reasoning for the change.
- Student relates process to something they have seen in another aspect. (e.g., Investigation seen on Mythbusters, CSI, or other television show).

3.0 Example Assessment Items

- Sample Investigation-Students observe and understand an animal's behavior in its habitat.
- Make qualitative observations using the five senses, simple tools and equipment. While performing the habitat experiment, students will use hand lenses to make observations about the pill bugs.
- Compare amounts and measurements of the length of your shoe with the length of a friend's shoe; the temperature using degrees Celsius at 9:00 a.m. with the temperature using degrees Celsius at 3:00 p.m.

Content Area: Science

2.0 Example Assessment Items

- While performing the habitat experiment, students will use hand lenses to make observations about the pill bugs. Teachers will assist by prompting students with questions such as “Why do pill bugs often roll into balls when placed in their new habitat?”

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Strand: Scientific Inquiry		Missouri GLEs IN1C
Reporting Topic: Evaluating and Analyzing Results		
Grade: 3		
Score 4.0	In addition to Score 3.0, in-depth inferences or applications that go beyond level 3.0. For example, the student may: <ul style="list-style-type: none"> analyze the procedures and results of a student-initiated investigation. make decisions about how results may be altered when part of an experiment is changed. 	
	3.5	In addition to 3.0 performance, in-depth inferences and applications with partial success.
Score 3.0	The student will: <ul style="list-style-type: none"> use quantitative and qualitative data as support for reasonable explanations. use data as support for observed patterns and relationships, and to make predictions to be tested. evaluate and analyze the reasonableness of an explanation and whether or not the evidence supports proposed explanations. The student exhibits no major errors or gaps in the learning goal (complex ideas and processes).	
	2.5	No major errors or gaps in 2.0 content and partial knowledge in 3.0 content.
Score 2.0	The student will: <ul style="list-style-type: none"> recognize reasonable explanations based upon quantitative and qualitative data. make appropriate predictions based on the information presented in patterns and relationships. recognize examples of supportive evidence when given a situation. The student exhibits no major errors or gaps in the simpler details and processes.	
	1.5	Partial understanding of the 2.0 content with major errors or gaps in 3.0 content.
Score 1.0	With help, a partial understanding of the 2.0 content and some of the 3.0 content.	
	0.5	With help, a partial understanding of the 2.0 content and none of the 3.0 content.
Score 0.0	Even with help, no understanding or skill demonstrated.	

4.0 Example Assessment Items

- Create a table or graph, record predictions, observations, and description of and results in a student-initiated investigation. Based upon the findings, what can be predicted if investigations variables are changed?

3.0 Example Assessment Items

- Students will write a written report describing the use of the data to support their explanation. (e.g., Students will describe the relationships or patterns they observe in the investigation).
- Create a T-chart to identify and describe the fairness of explanations and the evidence used to support this explanation.

2.0 Example Assessment Items

- While performing the habitat experiment and based upon the observation, students will be prompted to ask questions such as “What might happen if a plant is placed in an environment with some of the basic needs missing?”
- Students can select, from a list, an appropriate prediction based upon the evidence given.

Content Area: Science

Strand: Scientific Inquiry		Missouri GLEs IN1D
Reporting Topic: Communicating Results		
Grade: 3		
Score 4.0	In addition to Score 3.0, in-depth inferences or applications that go beyond level 3.0. For example, the student may: <ul style="list-style-type: none"> communicate the procedures and results of student-initiated investigation. 	
	3.5	In addition to 3.0 performance, in-depth inferences and applications with partial success.
Score 3.0	The student will: <ul style="list-style-type: none"> communicate simple procedures and results of investigations and explanations through: oral presentations, drawings and maps, data tables, graphs (bar, single line, pictograph), and writings. The student exhibits no major errors or gaps in the learning goal (complex ideas and processes).	
	2.5	No major errors or gaps in 2.0 content and partial knowledge in 3.0 content.
Score 2.0	The student will: <ul style="list-style-type: none"> describe the results of an experiment by answering teacher provided questions about the experiment verbally or in writing. The student exhibits no major errors or gaps in the simpler details and processes.	
	1.5	Partial understanding of the 2.0 content with major errors or gaps in 3.0 content.
Score 1.0	With help, a partial understanding of the 2.0 content and some of the 3.0 content.	
	0.5	With help, a partial understanding of the 2.0 content and none of the 3.0 content.
Score 0.0	Even with help, no understanding or skill demonstrated.	

4.0 Example Assessment Items

- Display data in a graphic organizer to compare and contrast the results of a student-created hypothesis. Results of the investigation are tracked and charted along with a written explanation of their conclusion.

3.0 Example Assessment Items

- Students will create a table and graph the results of an investigation. (e.g., how do plants change if they are not provided with their basic needs?)
- Explain the results of the investigation through an oral presentation.

2.0 Example Assessment Items

- Students complete a chart or table to describe observations (e.g., what happens to plants if they are not provided with all of their basic needs?)
- Using teacher-prepared questions, students will be able to answer questions about the investigation.

Content Area: Science

Strand: Science, Technology, and Human Activity		Missouri GLEs ST1A, ST1B
Reporting Topic: Technology		
Grade: 3		
Score 4.0	In addition to Score 3.0, in-depth inferences or applications that go beyond level 3.0. For example, the student may: <ul style="list-style-type: none"> relate past technological experiments to current technological advances. take a position on whether or not technology is more harmful or more helpful. 	
	3.5	In addition to 3.0 performance, in-depth inferences and applications with partial success.
Score 3.0	The student will: <ul style="list-style-type: none"> observe how some objects or materials occur in nature (e.g., Sun, fire, ice, snow) and others have been designed and made by people (e.g., stoves, refrigerators, bulbs, candles, lanterns) to solve human problems and enhance the quality of life. describe how new technologies have helped scientists make better observations and measurements for investigations (e.g., telescopes, magnifiers, balances, microscopes, computers, stethoscopes, thermometers). The student exhibits no major errors or gaps in the learning goal (complex ideas and processes).	
	2.5	No major errors or gaps in 2.0 content and partial knowledge in 3.0 content.
Score 2.0	The student will: <ul style="list-style-type: none"> identify objects or materials that occur in nature and objects or materials that have been made by people. identify the new technologies that have helped scientists make better observations and measurements for investigations. The student exhibits no major errors or gaps in the simpler details and processes.	
	1.5	Partial understanding of the 2.0 content with major errors or gaps in 3.0 content.
Score 1.0	With help, a partial understanding of the 2.0 content and some of the 3.0 content.	
	0.5	With help, a partial understanding of the 2.0 content and none of the 3.0 content.
Score 0.0	Even with help, no understanding or skill demonstrated.	

4.0 Example Assessment Items

- Students will interview parent, grandparent, or other adult to discover what previous generations knew about technology, how they learned it, and how they have used this technology.
- Students are presented with the following problem: Technology can be both helpful and harmful.
- Students will write a constructed response to explain the reasoning behind this statement.

3.0 Example Assessment Items

- Create a T-Chart comparing natural objects and man-made objects. Student will explain their reasoning for placement in the T-Chart in written or oral form.
- Students can choose a specific scientist and write specific ways they have used technologies. (e.g., telescopes, magnifiers, balances, microscopes, computers, stethoscopes, thermometers).

2.0 Example Assessment Items

- When given a list of natural objects and manmade objects, students will match with appropriate label (natural or man-made).
- Students will state the different technologies that scientists use when investigating.

Content Area: Science

Strand: Science, Technology and Human Activity		Missouri GLEs ST2A
Reporting Topic: History and Impact of Science		
Grade: 3		
Score 4.0	In addition to Score 3.0, in-depth inferences or applications that go beyond level 3.0. For example, the student may: <ul style="list-style-type: none"> investigate and predict a hypothesis based upon a current invention. 	
	3.5	In addition to 3.0 performance, in-depth inferences and applications with partial success.
Score 3.0	The student will: <ul style="list-style-type: none"> research biographical information about various scientists and inventors from different gender and ethnic backgrounds and describe how their work contributed to science and technology. The student exhibits no major errors or gaps in the learning goal (complex ideas and processes).	
	2.5	No major errors or gaps in 2.0 content and partial knowledge in 3.0 content.
Score 2.0	The student will: <ul style="list-style-type: none"> recognize and recall examples of scientists and inventors that contributed to science and technology. recognize and recall an appropriate solution to a given problem. The student exhibits no major errors or gaps in the simpler details and processes.	
	1.5	Partial understanding of the 2.0 content with major errors or gaps in 3.0 content.
Score 1.0	With help, a partial understanding of the 2.0 content and some of the 3.0 content.	
	0.5	With help, a partial understanding of the 2.0 content and none of the 3.0 content.
Score 0.0	Even with help, no understanding or skill demonstrated.	

4.0 Example Assessment Items

- How might life be different if Dr. Martin, a formal general manager for the systems division at Motorola, had never invented the cell phone. How would this impact our society?

3.0 Example Assessment Items

- Choose a person of scientific significance and create a poster to explain how their contribution is significant and what barriers (e.g., gender, ethnicity) they had to overcome.

2.0 Example Assessment Items

- When given separate lists of scientists and/or inventors and how and/or what they have contributed to science, students will match appropriately.
- Given a problem and a list of solutions, the student will choose the most appropriate solution.
- Create a graphic organizer (e.g., who, what, when, where book) depicting the contributions of scientists within a particular field of study.