



Science: Patterns

Competency: Making observations, identifying or creating, and transferring patterns in order to make predictions.

Grade Level Competency: Kindergarten

Students will make observations that will allow them to predict and model the relationships between patterns.
 Students will make connections to personal experiences or phenomena.

Criteria	Extending	Proficient	In Progress	Beginning
Analyze and Create Representation	A complex performance or application of learning that is transferred to new or novel situations beyond the content area, makes extended or abstract connections to authentic, real-world, multifaceted situations, and/or constructs entirely new ideas that are transformational.	I can use scientific language to explain and model connections in a pattern.	I can explain connections in a familiar pattern.	I am acquiring the knowledge and skills to create a pattern.
Predict Relationships		I can use patterns to make predictions of scientific events and apply the pattern to new situations.	I can use patterns to make predictions of scientific events and apply the pattern to familiar situations.	I am acquiring the knowledge and skills to identify a pattern in a scientific event.

MDE grade level benchmarks embedded explicitly in the rubric

Kindergarten

0L.2.1.1.3 Record and use observations to describe patterns of what plants and animals (including humans) need to survive.



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Grade Level Competency: Grades 1-2				
Students will make observations that will allow them to predict and model the relationships between patterns. Students will make connections to personal experiences or phenomena.				
Criteria	Extending	Proficient	In Progress	Beginning
Analyze and Create Representation	A complex performance or application of learning that is transferred to new or novel situations beyond the content area, makes extended or abstract connections to authentic, real-world, multifaceted situations, and/or constructs entirely new ideas that are transformational.	I can use scientific language to explain and model connections in a pattern. <input type="checkbox"/> Grade 1 <input type="checkbox"/> Grade 2	I can explain connections in a familiar pattern. <input type="checkbox"/> Grade 1 <input type="checkbox"/> Grade 2	I am acquiring the knowledge and skills to create a pattern. <input type="checkbox"/> Grade 1 <input type="checkbox"/> Grade 2
Predict Relationships		I can use patterns to make predictions of scientific events and apply the pattern to new situations. <input type="checkbox"/> Grade 1 <input type="checkbox"/> Grade 2	I can use patterns to make predictions of scientific events and apply the pattern to familiar situations. <input type="checkbox"/> Grade 1 <input type="checkbox"/> Grade 2	I am acquiring the knowledge and skills to identify a pattern in a scientific event. <input type="checkbox"/> Grade 1 <input type="checkbox"/> Grade 2
MDE grade level benchmarks embedded explicitly in the rubric				
Grade 1 1P.2.1.1.1 Identify and describe patterns obtained from testing different materials and determine which materials have the properties that are best suited for producing and/or transmitting sound.		Grade 2 2P.2.1.1.1 Identify and predict quantitative patterns of the effects of balanced and unbalanced forces on the motion of an object. 2E.2.1.1.1 Represent data to describe typical weather conditions expected during a particular season.		



Science: Patterns

Competency: Making observations, identifying or creating, and transferring patterns in order to make predictions.

Grade Level Competency: Grades 3-4

Students will make observations that will allow them to predict and model the relationships between patterns.

Students will make connections to personal experiences or phenomena.

Criteria	Extending	Proficient	In Progress	Beginning
Analyze and Create Representation	A complex performance or application of learning that is transferred to new or novel situations beyond the content area, makes extended or abstract connections to authentic, real-world, multifaceted situations, and/or constructs entirely new ideas that are transformational.	I can use scientific language to explain and model connections in a pattern and apply to personal experiences or natural phenomena. <input type="checkbox"/> Grade 3 <input type="checkbox"/> Grade 4	I can explain and model connections in a pattern. <input type="checkbox"/> Grade 3 <input type="checkbox"/> Grade 4	I am acquiring the knowledge and skills necessary to create a pattern connected to a scientific event. <input type="checkbox"/> Grade 3 <input type="checkbox"/> Grade 4
Predict Relationships		I can use evidence to justify and analyze connections between scientific events and apply those patterns to new situations. <input type="checkbox"/> Grade 3 <input type="checkbox"/> Grade 4	I can use evidence to justify the connections between scientific events and apply those patterns to familiar situations. <input type="checkbox"/> Grade 3 <input type="checkbox"/> Grade 4	I am acquiring the skills to explain and apply the connections between scientific events in a familiar situation. <input type="checkbox"/> Grade 3 <input type="checkbox"/> Grade 4

MDE grade level benchmarks embedded explicitly in the rubric

Grade 3

3E.2.1.1.1 Record observations of the sun, moon, and stars and use them to describe patterns that can be predicted.

3E.2.2.1.1 Organize and electronically present collected data to identify and describe patterns in the amount of daylight in different times of the year.

Grade 4

4E.3.2.1.1 Identify evidence from patterns in rock formations and fossils in rock layers to support an explanation for changes in a landscape over time.



Science: Patterns

Competency: Making observations, identifying or creating, and transferring patterns in order to make predictions.

Grade Level Competency: Grades 5-6: Students will make detailed observations to create and analyze patterns in phenomena and then create predictive conceptual models. Students will transfer patterns to novel situations and make connections to personal experiences or novel phenomena.				
Criteria	Extending	Proficient	In Progress	Beginning
Design a Model	A complex performance or application of learning that is transferred to new or novel situations beyond the content area, makes extended or abstract connections to authentic, real-world, multifaceted situations, and/or constructs entirely new ideas that are transformational.	I can create, explain, and test a complete conceptual model connected to patterns based on scientific evidence. I can apply this knowledge to new situations. Note: Models may be graphical, mathematical, diagrams, etc. <input type="checkbox"/> Grade 5 <input type="checkbox"/> Grade 6	I can create an accurate model based on scientific evidence. I can explain the major components or connections in the model. I can apply this knowledge to given situations. <input type="checkbox"/> Grade 5 <input type="checkbox"/> Grade 6	I am acquiring the knowledge and skills necessary to create and explain an accurate model. <input type="checkbox"/> Grade 5 <input type="checkbox"/> Grade 6
		I can analyze patterns in novel situations based on scientific events. I can provide evidence and explain my thinking. Note: Evidence can be observations, readings, models, data, etc. <input type="checkbox"/> Grade 5 <input type="checkbox"/> Grade 6	I can describe patterns in situations based on scientific events. I attempt to give evidence to explain my thinking. <input type="checkbox"/> Grade 5 <input type="checkbox"/> Grade 6	I am acquiring the knowledge and skills necessary to describe patterns and support with evidence. <input type="checkbox"/> Grade 5 <input type="checkbox"/> Grade 6
Analyze and Justify				



Science: Patterns

Competency: Making observations, identifying or creating, and transferring patterns in order to make predictions.

Grade Level Competency: Grades 7-8

Students will make detailed observations to create and analyze patterns in phenomena and then create predictive conceptual models. Students will transfer patterns to novel situations and make connections to personal experiences or novel phenomena.

Criteria	Extending	Proficient	In Progress	Beginning
Design a Model	A complex performance or application of learning that is transferred to new or novel situations beyond the content area, makes extended or abstract connections to authentic, real-world, multifaceted situations, and/or constructs entirely new ideas that are transformational.	<p>I can design a complete and accurate conceptual model to represent patterns based on scientific evidence. I can explain the major components or connections. I can revise the model to include new information.</p> <p>Note: Models may be graphical, mathematical, diagrams, etc.</p> <p><input type="checkbox"/> Grade 7 <input type="checkbox"/> Grade 8</p>	<p>I can create an incomplete, but accurate model based on scientific evidence. I can explain the major components or connections in the model.</p> <p><input type="checkbox"/> Grade 7 <input type="checkbox"/> Grade 8</p>	<p>I am acquiring the knowledge and skills necessary to create an accurate model.</p> <p><input type="checkbox"/> Grade 7 <input type="checkbox"/> Grade 8</p>
Analyze and Justify		<p>I can analyze patterns in a novel situation to make a claim supported by scientifically-reliable evidence and justify it using science concepts.</p> <p>Note: Evidence can be observations, readings, models, data, etc.</p> <p><input type="checkbox"/> Grade 7 <input type="checkbox"/> Grade 8</p>	<p>I can make a simple claim and attempt to give evidence to justify my reasoning.</p> <p><input type="checkbox"/> Grade 7 <input type="checkbox"/> Grade 8</p>	<p>I am acquiring the knowledge and skills necessary to make claims supported with evidence.</p> <p><input type="checkbox"/> Grade 7 <input type="checkbox"/> Grade 8</p>

MDE grade level benchmarks embedded explicitly in the rubric:



Science: Patterns

Competency: Making observations, identifying or creating, and transferring patterns in order to make predictions.

Grade Level Competency: Grades 9-12

Students will make detailed observations and synthesize data to create predictive conceptual models that can be replicated in order to make predictions about patterns in novel phenomena and justify with evidence.

Criteria	Extending	Proficient	In Progress	Beginning
Design a Model	A complex performance or application of learning that is transferred to new or novel situations beyond the content area, makes extended or abstract connections to authentic, real-world, multifaceted situations, and/or constructs entirely new ideas that are transformational.	I can design comprehensive models to simulate patterns in the natural or designed world, and use them to predict the behavior of the system. Note: Models may be physical, mathematical, computer, etc.	I can design models to simulate patterns in the natural or designed world, and use them to predict the behavior of the system. Note: Models may be physical, mathematical, computer, etc.	I can use models to simulate patterns in the natural or designed world, and use them to predict the behavior of the system. Note: Models may be physical, mathematical, computer, etc.
Analyze and Justify		I can identify, and analyze collected evidence (observations, readings, models, data) to support claims about patterns with connections to other ideas in science.	I can identify, and analyze collected evidence (observations, readings, models, data) and use it to support claims about patterns.	I can identify and analyze collected evidence (observations, readings, models, data) about patterns.