

Science: Scale, Proportion, and Quantity

Competency: Analyze relationships between macroscopic and microscopic objects and minute and expansive numbers.

| Grade Level Competency: Grades 5-6: | | | | |
|--|--|---|---|---|
| Students will analyze relationships between macroscopic and microscopic objects to make and justify connections. | | | | |
| 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 a simple model to represent macroscopic and microscopic objects using an appropriate scale. Note: Models may be graphical, mathematical, diagrams, etc. <input type="checkbox"/> Grade 5 <input type="checkbox"/> Grade 6 | I can create a simple or incomplete model to represent macroscopic and microscopic objects but the choice in scale is unclear. <input type="checkbox"/> Grade 5 <input type="checkbox"/> Grade 6 | I am acquiring the skills to use a model to identify microscopic and macroscopic numbers/systems. <input type="checkbox"/> Grade 5 <input type="checkbox"/> Grade 6 |
| Analyze and Justify | | I can analyze and predict connections between microscopic and macroscopic numbers/ systems and support my claim or model with multiple pieces of evidence and explain my thinking (including novel situations). Note: Evidence can be observations, readings, models, data, etc. <input type="checkbox"/> Grade 5 <input type="checkbox"/> Grade 6 | I can identify and make basic predictions between connections in microscopic and macroscopic numbers/ systems and support my claim or model with a piece of evidence. <input type="checkbox"/> Grade 5 <input type="checkbox"/> Grade 6 | I am acquiring the skills to make a claim and attempt to support my explanation with evidence. <input type="checkbox"/> Grade 5 <input type="checkbox"/> Grade 6 |



Science: Scale, Proportion, and Quantity

Competency: Analyze relationships between macroscopic and microscopic objects and minute and expansive numbers.

Grade Level Competency: Grades 7-8

Students will analyze relationships between macroscopic and microscopic objects to make and justify connections.

| 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 model to represent microscopic or macroscopic objects (using an appropriate scale) based on scientific evidence.</p> <p>I can explain the major components or connections and revise the model to include new information.</p> <p>Note: Models may be physical, mathematical, computer, etc.</p> <p><input type="checkbox"/> Grade 7 <input type="checkbox"/> Grade 8</p> | <p>I can create an incomplete, but accurate model of microscopic or macroscopic objects based on scientific evidence and 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 of microscopic or macroscopic objects.</p> <p><input type="checkbox"/> Grade 7 <input type="checkbox"/> Grade 8</p> |
| Analyze and Justify | | <p>I can analyze scale, proportion, and quantity 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 claim and attempt to give evidence to justify my reasoning.</p> <p><input type="checkbox"/> Grade 7 <input type="checkbox"/> Grade 8</p> | <p>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> |



Science: Scale, Proportion, and Quantity

Competency: Analyze relationships between macroscopic and microscopic objects and minute and expansive numbers.

Grade Level Competency: Grades 9-12

Students will analyze and make supported claims about the relationships between macroscopic and microscopic objects along with minute and expansive numbers through observation and apply the relationship to authentic phenomena.

| Criteria | Extending | Proficient | In Progress | Beginning |
|----------------------------|--|---|--|---|
| Design 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 model my observations and/or thinking about macroscopic and microscopic objects in a variety of ways and scales. Note: Representations/Models may be graphical, mathematical, diagrams, etc. | I can model my observations and/or thinking about macroscopic and microscopic objects in a limited number of ways and scales. Note: Representations/Models may be graphical, mathematical, diagrams, etc. | I am acquiring the knowledge and skills necessary to model my observations and/or thinking about macroscopic and microscopic objects in a model. Note: Representations/Models may be graphical, mathematical, diagrams, etc. |
| Analyze and Justify | | I can use research, quantitative/qualitative observations, etc. to analyze and make claims supported with data, or predictions to explain observed phenomena. | I can use research, quantitative/qualitative observations, etc. to make claims supported with data, or predictions that do not fully explain observed phenomena. | I am acquiring the knowledge and skills necessary to use research, quantitative/qualitative observations, etc. to make claims or predictions and fully explain observed phenomena. |