



**Georgia Standards of Excellence:  
STEAM Middle Tour and Workshop  
Grades 5-8**

**Essential Questions-**

How is an artist similar to a scientist or an engineer?

How do artists and scientists collaborate across disciplines to solve problems?

**Grade 5**

***Math***

MGSE5.NF.5

Interpret multiplication as scaling (resizing).

MGSE5.MD.1

Convert among different-sized standard measurement units (mass, weight, length, time, etc.) within a given measurement system (customary and metric) (e.g., convert 5cm to 0.05m), and use these conversions in solving multi-step, real world problems.

MGSE5.G.3

Understand that attributes belonging to a category of two-dimensional figures also belong to all subcategories of that category.

MGSE5.G.4

Classify two-dimensional figures in a hierarchy based on properties (polygons, triangles, and quadrilaterals).

***Science***

S5E1.

Obtain, evaluate, and communicate information to identify surface features on the Earth caused by constructive and/or destructive processes.

S5P1.

Obtain, evaluate, and communicate information to explain the differences between a physical change and a chemical change.

***Art***

VA5.CR.1

Engage in the creative process to generate and visualize ideas by using subject matter and symbols to communicate meaning.

VA5.CR.2

Create works of art based on selected themes.

VA5.CR.3

Understand and apply media, techniques, processes, and concepts of two-dimensional art.

VA5.RE.1

Use a variety of approaches for art criticism and to critique personal works of art and the artwork of others to enhance visual literacy.

VA5CN.1

Investigate and discover the personal relationships of artists to community, culture, and the world through making and studying art.

VA5.CN.2

Integrate information from other disciplines to enhance the understanding and production of works of art.

VA5.CN.3

Develop life skills through the study and production of art (e.g. collaboration, creativity, critical thinking, communication).

**Grade 6**

***Math***

MGSE6.RP.1 Understand the concept of a ratio and use ratio language to describe a ratio relationship between two quantities.

MGSE6.NS.3

Fluently add, subtract, multiply, and divide multi-digit decimals using the standard algorithm for each operation.

MGSE6.EE.1

Write and evaluate numerical expressions involving whole-number exponents.

- MGSE6.G.4 Represent three-dimensional figures using nets made up of rectangles and triangles, and use the nets to find the surface area of these figures. Apply these techniques in the context of solving real world and mathematical problems.
- MGSE6.SP.1 Recognize a statistical question as one that anticipates variability in the data related to the question and accounts for it in the answers.

### ***Science***

- S6E1. Obtain, evaluate, and communicate information about current scientific views of the universe and how those views evolved
- S6E6. Obtain, evaluate, and communicate information about the uses and conservation of various natural resources and how they impact the Earth.

### ***Art***

- VA6.CR.1 Visualize and generate ideas for creating works of art.
- VA6.CR.2 Choose from a range of materials and/or methods of traditional and contemporary artistic practices to plan and create works of art.
- VA6.RE.1 Reflect on the context of personal works of art in relation to community, culture, and the world.
- VA6.RE.2 Critique personal works of art and the artwork of others, individually and collaboratively, using a variety of approaches.
- VA6.RE.3 Engage in the process of art criticism to make meaning and increase visual literacy.
- VA6.CN.1 Develop personal artistic voice through connecting uses of art within a variety of cultural, historical, and contemporary contexts.
- VA6.CN.2 Develop life skills through the study and production of art.
- VA6.CN.3 Utilize a variety of resources to understand how artistic learning extends beyond the walls of the classroom.

## **Grade 7**

### ***Math***

- MGSE7.RP.2 Recognize and represent proportional relationships between quantities.
- MGSE7.NS.3 Solve real-world and mathematical problems involving the four operations with rational numbers.
- MGSE7.G.1 Solve problems involving scale drawings of geometric figures, including computing actual lengths and areas from a scale drawing and reproducing a scale drawing at a different scale.
- MGSE7.G.2 Explore various geometric shapes with given conditions. Focus on creating triangles from three measures of angles and/or sides, noticing when the conditions determine a unique triangle, more than one triangle, or no triangle.

### ***Science***

- S7L1. Obtain, evaluate, and communicate information to investigate the diversity of living organisms and how they can be compared scientifically.
- S7L4. Obtain, evaluate, and communicate information to examine the interdependence of organisms with one another and their environments.

### ***Art***

- VA7.CR.1 Visualize and generate ideas for creating works of art.
- VA7.CR.2 Choose from a range of materials and/or methods of traditional and contemporary artistic practices to plan and create works of art.
- VA7.RE.1 Reflect on the context of personal works of art in relation to community, culture, and the world.
- VA7.RE.2 Critique personal works of art and the artwork of others, individually and collaboratively, using a variety of approaches.
- VA7.RE.3 Engage in the process of art criticism to make meaning and increase visual literacy.
- VA7.CN.1 Develop personal artistic voice through connecting uses of art within a variety of cultural, historical, and contemporary contexts.
- VA7.CN.2 Develop life skills through the study and production of art.
- VA7.CN.3 Utilize a variety of resources to understand how artistic learning extends beyond the walls of the classroom.

## **Grade 8**

### ***Math***

- MGSE8.G.1 Verify experimentally the congruence properties of rotations, reflections, and translations: lines are taken to lines and line segments to line segments of the same length; angles are taken to angles of the same measure; parallel lines are taken to parallel lines.
- MGSE8.G.2 Understand that a two-dimensional figure is congruent to another if the second can be obtained from the first by a sequence of rotations, reflections, and translations; given two congruent figures, describe a sequence that exhibits the congruence between them.
- MGSE8.G.3 Describe the effect of dilations, translations, rotations and reflections on two-dimensional figures using coordinates.
- MGSE8.G.4 Understand that a two-dimensional figure is similar to another if the second can be obtained from the first by a sequence of rotations, reflections, translations, and dilations; given two similar two-dimensional figures, describe a sequence that exhibits the similarity between them.

### ***Science***

- S8P1. Obtain, evaluate, and communicate information about the structure and properties of matter.
- S8P3. Obtain, evaluate, and communicate information about cause and effect relationships between force, mass, and the motion of objects.

### ***Art***

- VA8.CR.1 Visualize and generate ideas for creating works of art.
- VA8.CR.2 Choose from a range of materials and/or methods of traditional and contemporary artistic practices to plan and create works of art.
- VA8.RE.1 Reflect on the context of personal works of art in relation to community, culture, and the world.
- VA8.RE.2 Critique personal works of art and the artwork of others, individually and collaboratively, using a variety of approaches.
- VA8.RE.3 Engage in the process of art criticism to make meaning and increase visual literacy.
- VA8.CN.1 Develop personal artistic voice through connecting uses of art within a variety of cultural, historical, and contemporary contexts.
- VA8.CN.2 Develop life skills through the study and production of art.
- VA8.CN.3: Utilize a variety of resources to understand how artistic learning extends beyond the walls of the classroom.