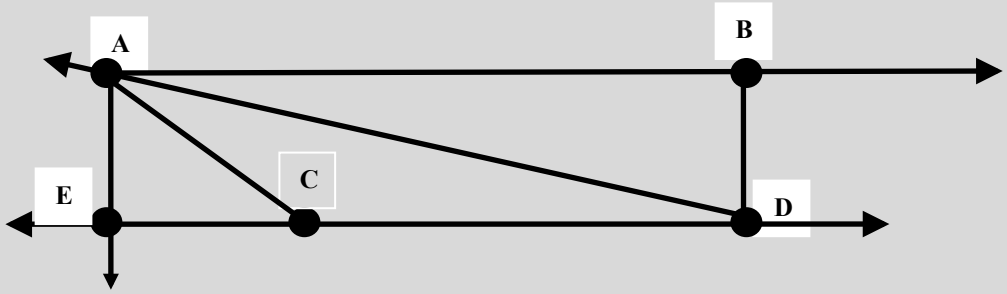
Formative Instructional and Assessment Tasks

Moving Around Town 4.G.1 - Task 1	
Domain	**Geometry**
Cluster	**Draw and identify lines and angles, and classify shapes by properties of their lines and angles.**
Standard(s)	**4.G.1.** Draw points, lines, line segments, rays, angles (right, acute, obtuse), and perpendicular and parallel lines. Identify these in two-dimensional figures.
Materials	Paper and pencil
Task	Student Task sheet (below). The map below shows four highways that connect five towns.  **Part 1:** Each town is labeled by a point on the map. What are the labels for the five towns? Which roads are line segments? Which roads are rays? Which roads are lines? Name two pairs of perpendicular roads. Name two pairs of parallel roads. **Part Two:** Write a sentence describing the differences between line segments, rays, and lines.

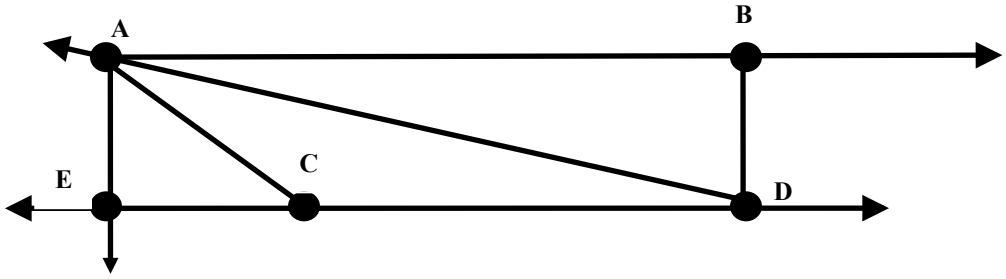
Rubric		
Level I	**Level II**	**Level III**
Limited Performance • More than 3 solutions are incorrect.	Not Yet Proficient • Solutions are all correct but the sentence does not clearly and accurately describe the differences **OR** All but 3 solutions are correct.	Proficient in Performance • Solutions: Points- A, B, C, D, E; Segments- AC, BD; Rays: AB, AE, DA; Lines- ED. **AND** • The sentence clearly and accurately describes the difference between line segments, rays, and lines.

Formative Instructional and Assessment Tasks

Standards for Mathematical Practice
1. Makes sense and perseveres in solving problems.
2. Reasons abstractly and quantitatively.
3. Constructs viable arguments and critiques the reasoning of others.
4. Models with mathematics.
5. Uses appropriate tools strategically.
6**. Attends to precision.**
7. Looks for and makes use of structure.
8. Looks for and expresses regularity in repeated reasoning.

Formative Instructional and Assessment Tasks
Moving Around Town

The map below shows four highways that connect five towns.



Part 1:
Each town is labeled by a point on the map. What are the labels for the five towns?

Which roads are line segments?

Which roads are rays?

Which roads are lines?

Name two pairs of perpendicular roads.

Name two pairs of parallel roads.

Part Two:
Write a sentence describing the differences between line segments, rays, and lines.

Formative Instructional and Assessment Tasks

Making Roads 4.G.1 - Task 2	
Domain	**Geometry**
Cluster	**Draw and identify lines and angles, and classify shapes by properties of their lines and angles.**
Standard(s)	**4.G.1.** Draw points, lines, line segments, rays, angles (right, acute, obtuse), and perpendicular and parallel lines. Identify these in two-dimensional figures.
Materials	Paper and pencil
Task	Student Task (below). **Part One:** The map below shows three towns (A, B, and C).  1) Draw three roads that connect the 3 towns. The roads should include 1 line, 1 line segment, and 1 ray. 2) Make a town D so that the road between A and D is perpendicular to the road between C and D. 3) Make 2 more towns (E and F) and connect the towns with 1 line and 1 ray. One of the roads should be parallel to another road that you already have. **Part Two:** If you were in charge of the road system, and wanted to leave open the possibility of building more towns in the future, should most of your roads be line segments, lines, or rays?

Rubric		
Level I	**Level II**	**Level III**
Limited Performance • More than 3 solutions are incorrect.	Not Yet Proficient • Solutions are all correct but the sentence does not clearly and accurately describe the differences **OR** All but 3 solutions are correct.	Proficient in Performance • Solutions: 1) The three roads between A, B, and C are line segments, lines, and rays. 2) D is in the correct place, 3) E and F are in the correct place. **AND** • The sentence explains that lines would be best since they extend in both directions.

Formative Instructional and Assessment Tasks

Standards for Mathematical Practice
1. Makes sense and perseveres in solving problems.
2. Reasons abstractly and quantitatively.
3. Constructs viable arguments and critiques the reasoning of others.
4. Models with mathematics.
5. Uses appropriate tools strategically.
6**. Attends to precision.**
7. Looks for and makes use of structure.
8. Looks for and expresses regularity in repeated reasoning.

Formative Instructional and Assessment Tasks
Making Roads

Part One:
The map below shows three towns (A, B, and C).

4) Draw three roads that connect the 3 towns. The roads should include 1 line, 1 line segment, and 1 ray.

5) Make a town D so that the road between A and D is perpendicular to the road between C and D.

6) Make 2 more towns (E and F) and connect the towns with 1 line and 1 ray. One of the roads should be parallel to another road that you already have.

Part Two:
If you were in charge of the road system, and wanted to leave open the possibility of building more towns in the future, should most of your roads be line segments, lines, or rays?

Formative Instructional and Assessment Tasks

Is it possible? 4.G.2 – Task 1	
Domain	**Geometry**
Cluster	**Draw and identify lines and angles, and classify shapes by properties of their lines and angles**.
Standard(s)	**4.G.2** Classify two-dimensional figures based on the presence or absence of parallel or perpendicular lines, or the presence or absence of angles of a specified size. Recognize right triangles as a category, and identify right triangles.
Materials	Geoboard, paper, and pencil Optional: Anglegs
Task	**Is it possible?** Use your Geoboard to explore each of the following to see if it possible. Draw a picture and write an explanation about whether each of these situations is possible. • A triangle can have 2 obtuse angles. • A trapezoid can have two right angles. • A rectangle can have 4 sides that are the same length. • A parallelogram can have 4 acute angles. • A rhombus can have 2 obtuse angles. • A triangle can have 2 sides that are the same length.

Rubric		
Level I	**Level II**	**Level III**
Limited Performance • Students struggled to draw pictures and give correct explanations for each of the tasks.	Not Yet Proficient • Students draw pictures and give correct explanations for 3 to 5 of the tasks.	Proficient in Performance • Students draw pictures and give correct explanations for each of the 6 tasks. • 1) never. The angles in a triangle add up to 180, so it is impossible to have 2 obtuse angles in 1 triangle, 2) sometimes. A trapezoid has exactly one pair of parallel sides. Trapezoids will either have no or 2 right angles, 3) sometimes. A rectangle with 4 equal sides is a square. 4) never, a parallelogram with 2 acute angles will also have 2 obtuse angles. 5) always, a rhombus always has 2 obtuse and 2 acute angles. 6) a triangle sometimes has 2 sides that are the same length, an isosceles triangle.

Standards for Mathematical Practice
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4. Models with mathematics.
5. Uses appropriate tools strategically.
6. Attends to precision.
7. Looks for and makes use of structure.
8. Looks for and expresses regularity in repeated reasoning.

Formative Instructional and Assessment Tasks
Is it possible?

Use your Geoboard to explore each of the following to see if the conditions ALWAYS occur, SOMETIMES occur, or NEVER occur. Draw a picture and write an explanation about whether each of these is possible.

1) A triangle can have 2 obtuse angles.

2) A trapezoid can have two right angles.

3) A rectangle can have 4 sides that are the same length.

4) A parallelogram can have 4 acute angles.

5) A rhombus can have 2 obtuse angles.

6) A triangle can have 2 sides that are the same length.

Formative Instructional and Assessment Tasks

Sorting Shapes 4.G.2 – Task 2	
Domain	**Geometry**
Cluster	**Draw and identify lines and angles, and classify shapes by properties of their lines and angles**.
Standard(s)	**4.G.2** Classify two-dimensional figures based on the presence or absence of parallel or perpendicular lines, or the presence or absence of angles of a specified size. Recognize right triangles as a category, and identify right triangles.
Materials	Quadrilateral cards (below), Paper, Pencil
Task	Have students either cut out or look at the Quadrilateral Cards (below). On the Student Task Sheet, sort the Quadrilateral Cards and list all of the shapes that meet the certain attribute. Students should also list those attributes. For example: a student may list only shape 26 for the attributes: 4 right angles, 4 sides the same length, 2 sets of parallel sides.

Rubric		
Level I	**Level II**	**Level III**
Limited Performance • Students do not accurately or correctly sort shapes 3 or more times.	Not Yet Proficient • Students accurately and correctly sort shapes in all but 1-2 times.	Proficient in Performance • Students accurately and correctly sort shapes each time.

Standards for Mathematical Practice
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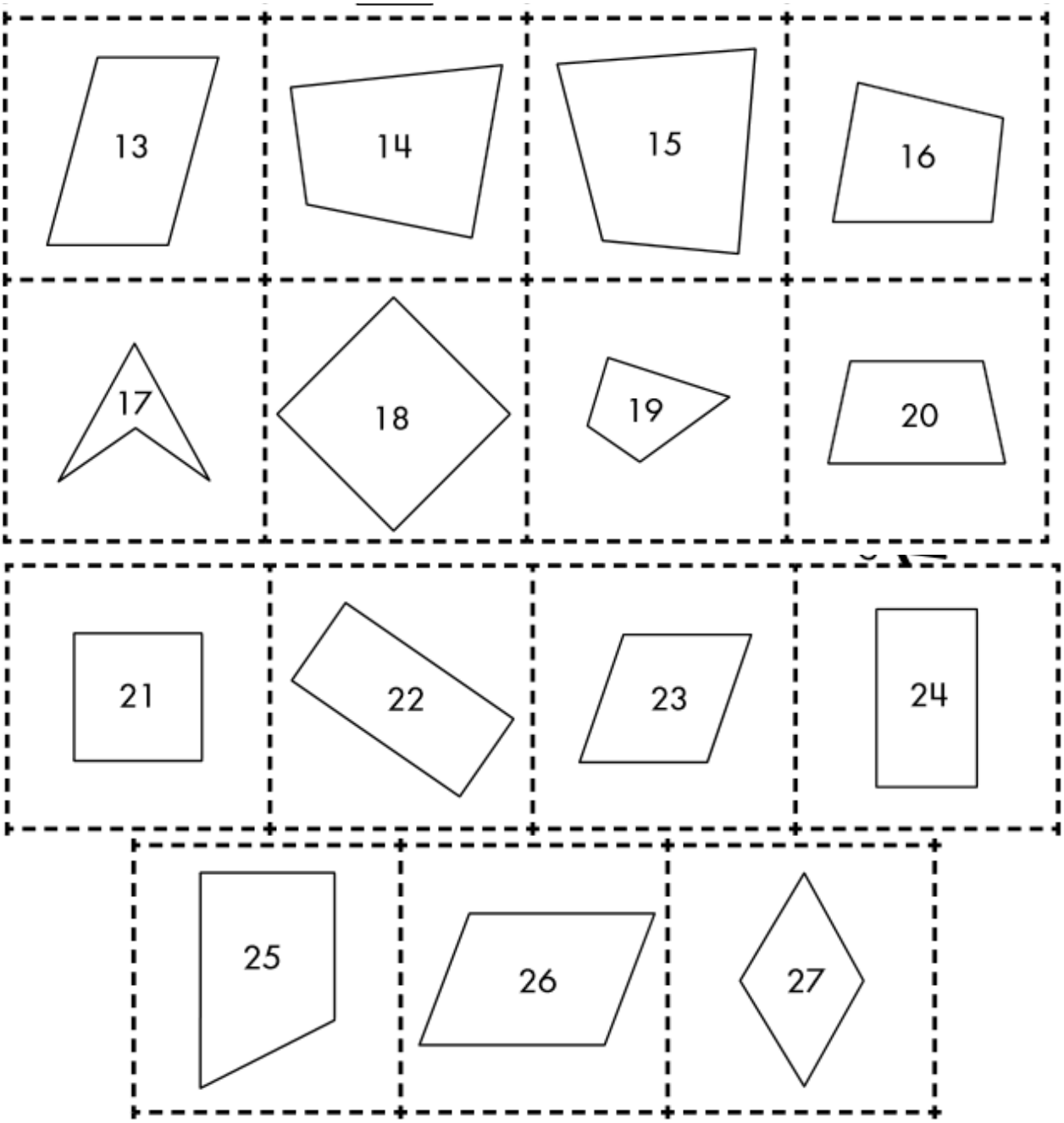
4. Models with mathematics.
5. Uses appropriate tools strategically.
6**. Attends to precision.**
7. Looks for and makes use of structure.
8. Looks for and expresses regularity in repeated reasoning.

Formative Instructional and Assessment Tasks
Sorting Quadrilateral Cards



Formative Instructional and Assessment Tasks
Sorting Shapes

Sort Number	Shapes	Attributes
1		
2		
3		
4		
5		
6		
7		

Formative Instructional and Assessment Tasks

The Rest of the Shape? 4.G.3-Task 1	
Domain	**Measurement and Data**
Cluster	**Draw and identify lines and angles, and classify shapes by properties of their lines and angles.**
Standard(s)	**4.G.3** Recognize a line of symmetry for a two-dimensional figure as a line across the figure such that the figure can be folded along the line into matching parts. Identify line-symmetric figures and draw lines of symmetry.
Materials	Paper, pencil, Activity sheet
	The Rest of the Shape? **Part 1:** Below are parts of shapes that are symmetrical. Draw the rest of the shape. A) A square represents half of a shape that has 2 lines of symmetry. B) A square represents one-fourth of a shape that has 4 lines of symmetry. C) A triangle represents one-half of a shape that has 2 lines of symmetry. D) A triangle represents one-fourth of a shape that has 4 lines of symmetry. E) A trapezoid represents one-half of a shape that has 6 lines of symmetry. **Part 2:** Explain how you solved one of the tasks above.

Rubric		
Level I	**Level II**	**Level III**
Limited Performance • Students make more than 2 errors.	Not Yet Proficient • Students make 1 or 2 errors OR the explanation in Part 2 is not clear or accurate.	Proficient in Performance • Part 1: A) A rectangle, B) A square, C) a rhombus (parallelogram), D) A square, E) a hexagon AND • Part 2: There is a clear and accurate explanation,

Standards for Mathematical Practice
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4. Models with mathematics.
5. Uses appropriate tools strategically.
6. Attends to precision.
7. Looks for and makes use of structure.
8. Looks for and expresses regularity in repeated reasoning.

Formative Instructional and Assessment Tasks
The Rest of the Shape?

Part 1: Below are parts of shapes that are symmetrical. Draw the rest of the shape.

A) A square represents half of a shape that has 2 lines of symmetry.

B) A square represents one-fourth of a shape that has 4 lines of symmetry.

C) A triangle represents one-half of a shape that has 2 lines of symmetry.

D) A triangle represents one-fourth of a shape that has 4 lines of symmetry.

E) A trapezoid represents one-half of a shape that has 6 lines of symmetry.

Part 2: On the back of this sheet, explain how you solved one of the tasks above.

Formative Instructional and Assessment Tasks

Symmetrical Letters 4.G.3-Task 2	
Domain	**Measurement and Data**
Cluster	**Draw and identify lines and angles, and classify shapes by properties of their lines and angles.**
Standard(s)	**4.G.3** Recognize a line of symmetry for a two-dimensional figure as a line across the figure such that the figure can be folded along the line into matching parts. Identify line-symmetric figures and draw lines of symmetry.
Materials	Paper, pencil
	Symmetrical Letters **Part 1:** Out of the 26 capital letters in the alphabet, sort them in the following groups: 0 lines of symmetry, 1 line of symmetry, 2 lines of symmetry, and more than 2 lines of symmetry. **Part 2:** Explain how you solved one of the tasks above.

Rubric		
Level I	**Level II**	**Level III**
Limited Performance • Students make more than 2 errors.	Not Yet Proficient • Students make 1 or 2 errors OR the explanation in Part 2 is not clear or accurate.	Proficient in Performance Possible solutions according to the formation of the letter. • Part 1: No lines- F, G, J, L, N, P, Q, R, S, Z 1 line- A, B, C, D, E, K, M, T, U, V, W, Y 2 lines- H, I, O, X • Part 2: There is a clear and accurate explanation,

Standards for Mathematical Practice
1. Makes sense and perseveres in solving problems.
2. Reasons abstractly and quantitatively.
3. Constructs viable arguments and critiques the reasoning of others.
4. Models with mathematics.
5. Uses appropriate tools strategically.
6**. Attends to precision.**
7. Looks for and makes use of structure.
8. Looks for and expresses regularity in repeated reasoning.

Formative Instructional and Assessment Tasks
Symmetrical Letters

Part 1:
Out of the 26 capital letters in the alphabet, sort them in the following groups:

0 lines of symmetry	**1 line of symmetry**
2 lines of symmetry	**More than 2 lines of symmetry**

Part 2:
Explain how you solved one of the tasks above.