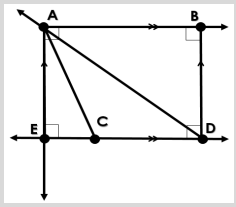
Formative Instructional and Assessment Tasks

NC.4.G.1 Geometry Maps	
Domain	Geometry
Cluster	Classify shapes based on lines and angles in two-dimensional figures.
Standard(s)	**NC.4.G.1** Draw and identify points, lines, line segments, rays, angles, and perpendicular and parallel lines.
Materials	activity sheet, pencil
Task	**Geometry Maps** You are working for a mapping company to create maps. You have created the map below for a local county, which has six major roads.  **Part 1:** Each town is labeled by a **point** on the map. ● How many towns are there? (5) ● What are the "names" of these towns as shown on the map? (A, B, C, D, E) Which roads are shown as **line segments**? (AC, BD) Which roads are shown as **rays**? (AB, AE, DA) Which roads are shown as **lines**? (ED) Name two pairs of **perpendicular roads**. (Any two of these: AB & AE, AB & BD, ED & BD, ED & AE) Name two pairs of **parallel roads**. (AB & ED and AE & BD) **Part 2:** Write a few sentences to explain the differences between line segments, rays, and lines to others working at the mapping company. (Line segments have an end point at each end of the line - a beginning & end point. Rays have a beginning point and go on forever in one direction. Lines go on forever in both directions.)

Rubric		
Level I Not Yet	**Level II Progressing**	**Level III Meets Expectation**
Student exhibits **0-2** of the following characteristics: ● can accurately count and find the names of towns because they understand they are labeled as points in the diagram. ● can accurately name line segments in the diagram. ● can accurately name rays in the diagram. ● can accurately name lines in the diagram. ● can accurately name perpendicular roads based on the understanding that the roads form right angles at their intersection. ● can accurately name parallel roads based on the understanding that they will never intersect. ● can clearly and accurately describe the difference between line	Student exhibits **3-6** of the following characteristics: ● can accurately count and find the names of towns because they understand they are labeled as points in the diagram. ● can accurately name line segments in the diagram. ● can accurately name rays in the diagram. ● can accurately name lines in the diagram. ● can accurately name perpendicular roads based on the understanding that the roads form right angles at their intersection. ● can accurately name parallel roads based on the understanding that they will never intersect. ● can clearly and accurately describe the difference between line segments,	Student exhibits **all** of the following characteristics: ● can accurately count and find the names of towns because they understand they are labeled as points in the diagram. ● can accurately name line segments in the diagram. ● can accurately name rays in the diagram. ● can accurately name lines in the diagram. ● can accurately name perpendicular roads based on the understanding that the roads form right angles at their intersection. ● can accurately name parallel roads based on the understanding that they will never intersect. ● can clearly and accurately describe the difference between line segments,

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segments, rays, and lines.	rays, and lines.	rays, and lines.

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.

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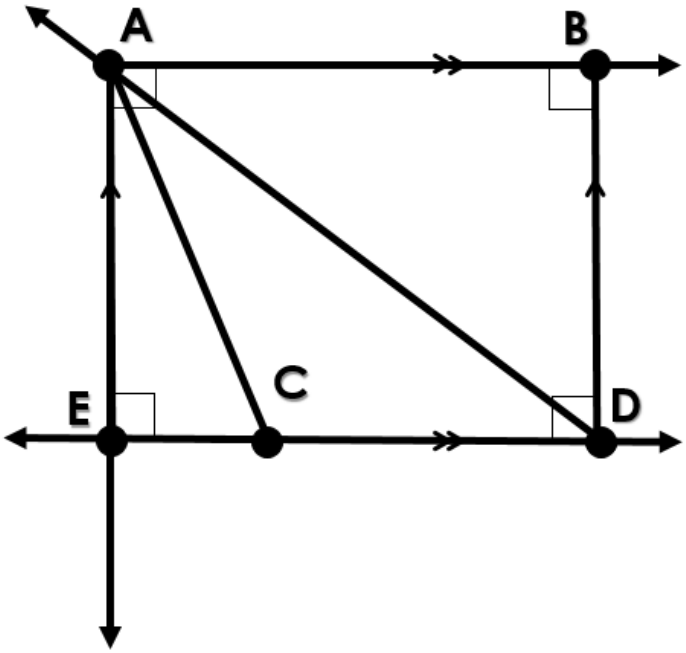
Geometry Maps

You are working for a mapping company to create maps.
You have created the map below for a local county, which has six major roads.



Part 1:
Each town is labeled by a **point** on the map.

- How many towns are there? _____
- What are the "names" of these towns as shown on the map? _____

Which roads are shown as **line segments**? _____

Which roads are shown as **rays**? _____

Which roads are shown as **lines**? _____

Name two pairs of **perpendicular roads**. _____

Name two pairs of **parallel roads**. _____

Part 2:
Write a few sentences to explain the differences between line segments, rays, and lines to others working at the mapping company.

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Scoring Examples

Not Yet: Student only accurately names points and is unable to give a clear explanation in Part 2.

Part 1:

Each town is labeled by a **point** on the map.

- How many towns are there? 5 towns
- What are the "names" of these towns as shown on the map? a, b, c, d, e

Which roads are shown as **line segments**? a 3 b are a linesegment

Which roads are shown as **rays**? e 3 D are a rays

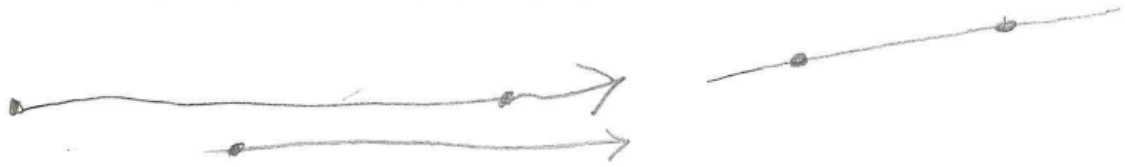
Which roads are shown as **lines**? He 3 c

Name two pairs of **perpendicular roads**. d 3 a

Name two pairs of **parallel roads**. d 3 e

Part Two:

Write a few sentences to explain the differences between line segments, rays, and lines to the intern working with you at the mapping company.



Progressing: This student is missing several line segments, but is accurate on all other geometry terms and has a clear explanation.

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Part 1:

Each town is labeled by a **point** on the map.

- How many towns are there? 6
- What are the "names" of these towns as shown on the map? A B C D E

Which roads are shown as **line segments**? CA more?

Which roads are shown as **rays**? DA, AB, AE

Which roads are shown as **lines**? ED

Name two pairs of **perpendicular roads**. AE, DC

Name two pairs of **parallel roads**. ED, AB

Part Two:

Write a few sentences to explain the differences between line segments, rays, and lines to the intern working with you at the mapping company. A line has a no ending point and go's on forever a ray has a starting point and then go's on forever a line segment has two ending point's a

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Meets Expectation: Student accurately names all geometry terms and has a clear and accurate explanation.

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Part 1:

Each town is labeled by a **point** on the map.

- How many towns are there? 5
- What are the "names" of these towns as shown on the map? A B D C E

Which roads are shown as **line segments**? AC BD CA

Which roads are shown as **rays**? AE AB DA

Which roads are shown as **lines**? ED

Name two pairs of **perpendicular roads**. AE DE DB AB

Name two pairs of **parallel roads**. ABED AEBD

Part Two:

Write a few sentences to explain the differences between line segments, rays, and lines to the intern working with you at the mapping company.

Line Segments dont go forever on both sides. Rays go forever on one side. Point on one side. Lines go forever on both sides.