LESSON MAKER PRO

Line Code Quest

Name geometry parts and describe how they meet.

GRADE 4 · 4.MG.4

4.MG.4 "The student will identify, describe, and draw points, rays, line segments, angles, and lines, including intersecting, parallel, and perpendicular lines. Identify and describe points, lines, line segments, rays, and angles..."

NAME _____ DATE _____

GEOMETRY NAMES AND SYMBOLS

A point is one exact location. A segment has two endpoints, a ray has one endpoint and goes on in one direction, and a line goes on in both directions. An angle has a vertex where two rays meet, use ∠ for an angle, ∥ for parallel, and ⊥ for perpendicular.

WORKED EXAMPLE

Ray UV and ray UN start at U. Name the angle they make.

1. Find the shared endpoint, U.
2. The shared endpoint is the vertex.
3. Use one point from each ray with U in the middle.
4. Write ∠VUN.

Answer: ∠VUN or ∠NUV

PRACTICE 6 problems

1 A dot is labeled M. What is the name of the point?

ANSWER _____

2 A segment has endpoints H and J. Name the segment.

ANSWER _____

3 A ray starts at C and passes through D. Name the ray.

ANSWER _____

4 An angle has vertex R. Its sides pass through P and Q. Name the angle.

ANSWER _____

5 Lines AB and EF never meet, even if they continue forever. Write their relationship using a symbol.

ANSWER _____

6 Lines GH and KL meet to make right angles. Write their relationship using a symbol.

ANSWER _____

APPLY IT Show your work

1 At a game design club, two straight laser-path lines, IJ and NO, cross at T. The crossing makes four right angles. Classify the lines and write a symbolic relationship.

WORK SPACE

ANSWER _____

2 A rectangular comic panel has corners A, B, C, and D in order. Compare segment AB with segment CD. Then compare segment AB with segment AD. Use symbols.

WORK SPACE

ANSWER _____

CHALLENGE One step up

CHALLENGE

A square has vertices W, X, Y, and Z in order. Write two parallel relationships and two perpendicular relationships using its sides. Then explain how you know the sides are perpendicular.

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_____

ANSWER KEY

Line Code Quest

GRADE 4 · 4.MG.4

PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	A dot is labeled M. What is the name of the point?	**M**
2	A segment has endpoints H and J. Name the segment.	**segment HJ or segment JH**
3	A ray starts at C and passes through D. Name the ray.	**ray CD**
4	An angle has vertex R. Its sides pass through P and Q. Name the angle.	**∠PRQ or ∠QRP**
5	Lines AB and EF never meet, even if they continue forever. Write their relationship using a symbol.	**AB ∥ EF**
6	Lines GH and KL meet to make right angles. Write their relationship using a symbol.	**GH ⊥ KL**

PART 2 · APPLY IT

1. **They are perpendicular, intersecting lines. IJ ⊥ NO.** Lines that meet to form right angles are perpendicular. Perpendicular lines also intersect.
2. **AB ∥ CD; AB ⊥ AD** Opposite sides of a rectangle are parallel. Sides next to each other meet at right angles, so they are perpendicular.

CHALLENGE

WX ∥ YZ; XY ∥ WZ; WX ⊥ XY; XY ⊥ YZ. Adjacent sides of a square meet to form right angles.

Accept reversed names for segments, parallel pairs, and perpendicular pairs. For problem 3, the ray must be named ray CD because C is the endpoint, and for problem 4 accept either angle name with R in the middle.