LESSON MAKER PRO

Points That Matter

Find endpoints and vertices in geometric figures.

GRADE 4 · 4.MG.4.b

4.MG.4.b "Describe endpoints and vertices in relation to lines, line segments, rays, and angles."

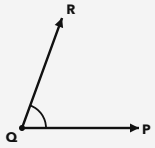
NAME _____ DATE _____

WHERE FIGURES BEGIN

A line goes on forever in both directions, so it has no endpoints. A line segment has two endpoints, a ray has one endpoint, and an angle has a vertex where its two rays meet.

WORKED EXAMPLE

Look at the angle. Name its vertex and its two rays.

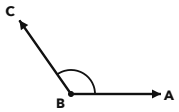


1. Find the point where both rays meet, Q.
2. The vertex is Q.
3. Name each ray with Q first: ray QP and ray QR.

Answer: Vertex Q; ray QP and ray QR.

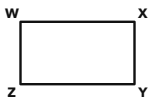
PRACTICE 6 problems

1 Look at the angle. Name its vertex and its two rays.



ANSWER _____

2 Look at the rectangle. How many vertices does it have? How many line segments make its sides?



ANSWER _____

3 A line goes forever in both directions. How many endpoints does it have?

ANSWER _____

4 Line segment CD has a point at each end. Name its endpoints.

ANSWER _____

5 Ray EF starts at E and passes through F. Name the endpoint.

ANSWER _____

6 Angle GHJ is made from rays HG and HJ. Name the vertex and the two rays.

ANSWER _____

APPLY IT Show your work

1 For a game, Jada draws a straight route from checkpoint H to checkpoint K. The route begins at H and stops at K. What geometric figure is the route? Name its endpoints.

WORK SPACE

ANSWER _____

2 A science club uses a beam that starts at point R, passes through point S, and keeps traveling in the same direction. Is the beam a line, a line segment, or a ray? Name its endpoint.

WORK SPACE

ANSWER _____

CHALLENGE One step up

Angle DEF is made from rays ED and EF. Explain why E is both the vertex of the angle and an endpoint of each ray.

WORK SPACE AND ANSWER

ANSWER KEY

Points That Matter

GRADE 4 · 4.MG.4.b

PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	Look at the angle. Name its vertex and its two rays.	**Vertex B; ray BA and ray BC.**
2	Look at the rectangle. How many vertices does it have? How many line segments make its sides?	**4 vertices; 4 line segments.**
3	A line goes forever in both directions. How many endpoints does it have?	**0 endpoints.**
4	Line segment CD has a point at each end. Name its endpoints.	**C and D.**
5	Ray EF starts at E and passes through F. Name the endpoint.	**E.**
6	Angle GHJ is made from rays HG and HJ. Name the vertex and the two rays.	**Vertex H; ray HG and ray HJ.**

PART 2 · APPLY IT

1. **Line segment HK; endpoints H and K.** Because the route has two stopping points, it is a line segment. Its endpoints are H and K.
2. **Ray RS; endpoint R.** The beam starts at R but continues in one direction, so it is a ray. A ray has one endpoint, R.

CHALLENGE

E is the vertex because rays ED and EF meet at E. E is an endpoint of each ray because both rays begin at E.

Accept equivalent ray notation if the first letter names the endpoint. For the challenge, accept explanations stating that the rays meet and begin at E.