(points, lines, segments, etc.)


3 Things you MUST know about geometry:

- The way you DRAW the geometric idea
- The way you SAY the idea
- The way you WRITE the idea
*Get any of these off just a bit and you've given the wrong answer.
Let's see what this means.....



Line- a straight set of points that goes on forever in two directions.


Line BC
BC

Line Segment- a part of a line and has two enpoints


Line segment RS RS
Ray- a part of a line. It has only one endpoint and extends forever in one direction.


Ray JK
JK

Plane- an endless flat surface.


Plane LMN
LMN

Parallel lines- Lines that never cross and stay an eqaul distance apart.

Intersecting Lines- Lines that pass through the same point.


Line PE interesects line QC. PE interseects QC.

Perpendicualr lines- Lines that are intersecting, that form a $90^{\circ}$ or right angle.


Line RS is perpendicular to line FH. RS FH

* a Ray must always be writen with the endpoint letter $1^{\text {st }}$, then the continuous end next. All other may be written in either direction.


The symbol \| means parallel. The symbol $\perp$ means perpendicular. The symbol 7 means right angle.

## EXAMPLES Identify Lines, Rays, or Line Segments

Identify each figure.


The figure extends in opposite directions without ending. Line $X Y$ or $\overleftrightarrow{X Y}$.


This figure has one endpoint and extends in one direction without ending. Ray $A B$ or $\overrightarrow{A B}$.

## EXAMPLE Describe Lines

(3) Describe the figure.

The figure shows ray $A B$ and line segment $C D$. Notice that ray $A B$ intersects line segment $C D$.

$\overrightarrow{A B}$ intersects $\overrightarrow{C D}$.

Let's Check it out:
https://www.khanacademy.org/math/geometry/intro euclid/v/lines--line-segments--and-rays
http://studyjams.scholastic.com/studyjams/jams/math/geometry/types-of-lines.htm

Now you try:

## 1. Name 4 points.

2. Name 3 line segments.

## 3. Name 2 intersecting lines

## 4. Name 2 parallel lines.


5. If $\overleftrightarrow{P S}$ and $\overleftrightarrow{T C}$ are parallel and $\overleftrightarrow{P S}$ is perpendicular to $\overleftrightarrow{P T}$, is $\overleftrightarrow{T C}$ also perpendicular to $\overleftrightarrow{P T}$ ?
6. Do $\overleftrightarrow{P S}$ and $\overleftrightarrow{S P}$ name the same line?
7. Do $\overrightarrow{P S}$ and $\overrightarrow{S P}$ name the same ray? Explain.


GEOIVTRT

## Enrichment:

http://www.superteacherworksheets.com/geometry/lines-segments-rays-1 TWTBW.pdf http://www.sheppardsoftware.com/mathgames/geometry/shapeshoot/line shoot.htm http://www.ixl.com/math/grade-3/lines-line-segments-and-rays
http://mrnussbaum.com/lines/

Lesson plans
Monday- review

Tuesday- Geometry -Lines, Segments, Rays notes

Wednesday- Review/ Guided Practice- Geometry

Thursday- Independent Practice/ Worksheet - Geometry

Friday- Group practice- Geometry

Monday- Geometry- Lines, Segments, Rays Assessment

Tuesday-

- Basic geometric ideas NOTES. (Also found in text book pg 200)
- https://www.khanacademy.org/math/geometry/intro euclid/v/lines--line-segments--and-rays (basic defintions)
- http://studyjams.scholastic.com/studyjams/jams/math/geometry/types-of-lines.htm (song/ visuals)
- http://www.turtlediary.com/grade-3-games/math-games/line-segments.html (definitions/ written form examples)

Wednesday-

- Review notes/names
- Guided practice on board (also text book 201)
- Guided or Independent practice (text book 201 cont)

Thursday-

- http://www.superteacherworksheets.com/geometry/lines-segments-rays-1 TWTBW.pdf
- Or see attached worksheets

Friday-

- http://www.sheppardsoftware.com/mathgames/geometry/shapeshoot/line shoot.htm
- http://www.ixl.com/math/grade-3/lines-line-segments-and-rays
- http://mrnussbaum.com/lines/

Monday-

- Assessment

Additional:

- Additional Practice/Enrichment in Envision Kit pgs. 35-37 (see pdf attachment)


## Lines, Line Segments \& Rays

## 1. Draw line segment $X Y$

2. Draw line $A B$

## 3. Draw ray EF

4. Draw line $A D$. Then put points $B$ and $C$ on the line.
5. Draw line segment VC
6. Draw ray LM
$\qquad$ Date $\qquad$ Math Practice

Directions: Find the missing multiples.

| $5 \times()=15$ | $6 \times()=12$ | $2 \times()=2$ |
| :--- | :--- | :--- |
| $4 \times()=8$ | $3 \times()=30$ | $4 \times()=4$ |
| $2 \times()=4$ | $7 \times()=14$ | $5 \times()=10$ |
| $3 \times()=9$ | $3 \times()=21$ | $4 \times()=40$ |
| $6 \times()=12$ | $8 \times()=40$ | $7 \times()=49$ |

Directions: Circle the correct name for the lines and line segments.
1

a. Line segment BM
b. Line BM
c. Line segment B

2

a. Line segment FN
b. Line FN
c. Line F
3

a. Line segment $D$
b. Line DZ
c. Line segment DZ
$\qquad$

## Lines and Segments Assessment

## Multiple Choice

Identify the choice that best completes the statement or answers the question.
$\qquad$ 1. What geometric figure is shown?

a. angle
b. line
c. ray
d. line segment
$\qquad$ 2. Which of the following is a diagram of $\overline{X Y}$ ?
a.

c.

d.

b.

$\qquad$ 3. Tomas's map of Lexington shows three streets that are vertical and parallel. The map also showed one street perpendicular to the three parallel streets. Which choice shows the arrangement of the streets Tomas saw on the map?
a.

b.

c.

d.

4. What geometric figure is shown?
a. Line
b. ray
c. point
d. line segment
5. What describes the diagram below?

a. parallel lines
c. intersecting lines
b. quadrilateral
d. perpendicular lines
6. Look at the figure below. What two lines are perpendicular?
a. $\overleftrightarrow{F G}, \overleftrightarrow{H J}$
b. $\overleftrightarrow{F G}, \overleftrightarrow{M N}$
c. $\overleftrightarrow{H J}, \overleftrightarrow{K L}$
d. $\overleftrightarrow{K L}, \overleftrightarrow{M N}$

7. Which of the following is a diagram of $\overleftrightarrow{X Y}$ ?
a.

b.

c.

d.


Essay
8. This map shows several roads in the county where Gina lives.


Name a pair of INTERSECTING roads that are NOT perpendicular.

Name a pair of PARALLEL roads.

## Lines and Segments

Answer Section

## MULTIPLE CHOICE

1. ANS: D

PTS: 1
REF: Lesson 8-1
2. ANS: A

PTS: 1
REF: Lesson 8-1
3. ANS: A

PTS: 1
REF: Lesson 8-1

REF: Lesson 8-1
REF: Lesson 8-1
REF: Lesson 8-1
7. ANS: C

PTS: 1
REF: Lesson 8-1

## ESSAY

8. ANS:

Sample Intersecting Roads: Andes and Smoky Parallel Roads: Andes and Cureton

| RUBRIC |  |
| :--- | :--- |
| $\mathbf{2}$ points | Both pairs are correct. (For intersecting, count answers as correct if <br> they include Andes plus one other road). |
| $\mathbf{1}$ point | Only one pair of roads is correct. |

