12.1 The Language of Geometry

point   - has no _Size_
            - represented by a _dot_
            - named by _Capital_ letters

•A → point A
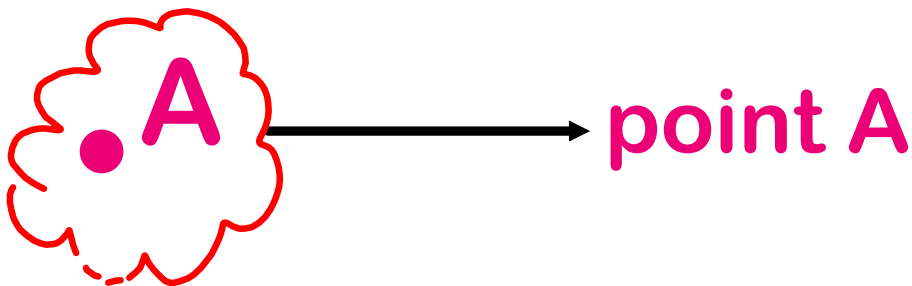
line - extends _infinately_ in two directions
     - shown with _arrows_ at each end
     - two ways to name lines:
         1. lower case cursive letter
         2. two points on the line with a line symbol above them

line _m_ or $\overleftrightarrow{DS}$

S

D

_m_
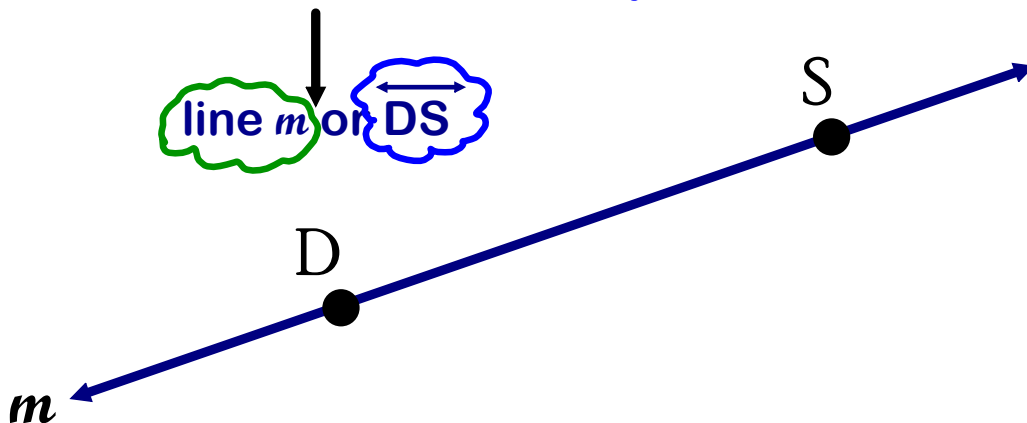
plane - can be thought of as flat surfaces that
    extend _infinitely_ in all directions and
    have no _thickness_
    (think of a floor or wall)
   - named by a _Capital cursive_ letter or by
    three points _not in a line_ on the plane

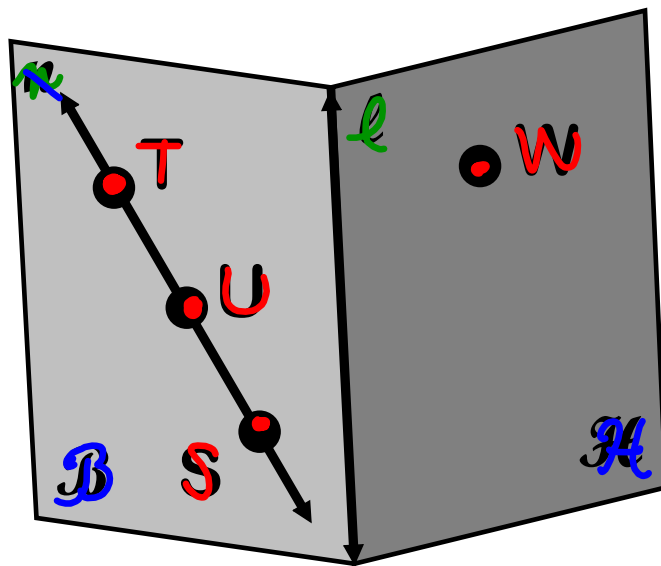Points: •Y, •G, •K on plane $\mathcal{R}$

→ plane $\mathcal{R}$ or
plane YGK
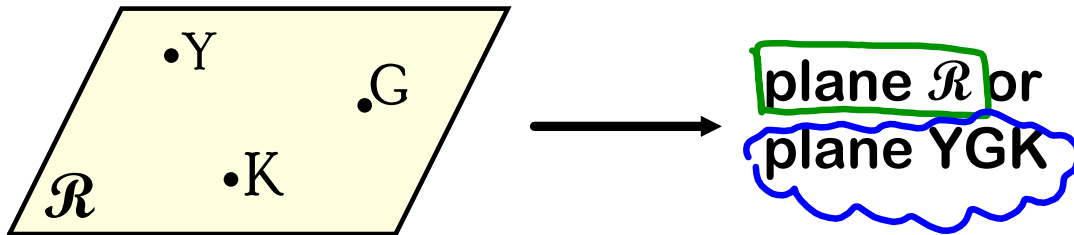
Example 1

a) Name 4
   points.

T, U, W, S

b) Name 2
   lines.

line ℓ & line m
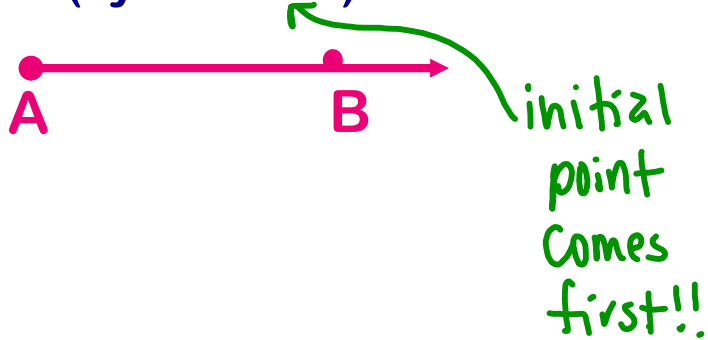$\overleftrightarrow{TU}$ $\overleftrightarrow{US}$ $\overleftrightarrow{ST}$

Points on diagram: T, U, S (on line), W, with planes $\mathcal{H}$ and $\mathcal{B}$, lines ℓ and m (k)

c) Name 2
   planes.

plane $\mathcal{H}$ & plane $\mathcal{B}$

A <u>line segment</u> has _**end points**_ .
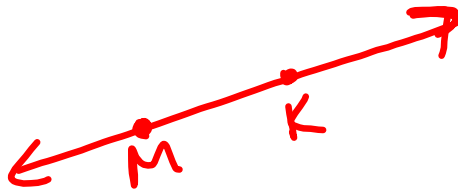(symbol $\overline{AB}$)

A _**ray**_ consists of an initial point A
and all points on $\overleftrightarrow{AB}$ that lie on
the same side of A as point B.
(symbol $\overrightarrow{AB}$)

initial point comes first!!
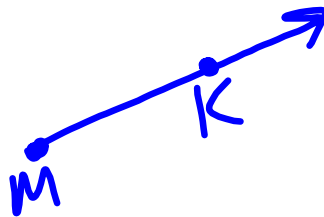
<u>Example 2</u>

a) Draw $\overleftrightarrow{MK}$ *line*

b) Draw $\overline{MK}$
   line segment

c) Draw $\overrightarrow{MK}$
   ray

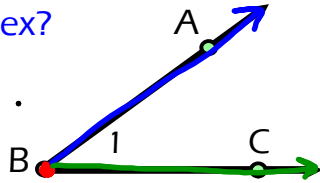An *angle* consists of two rays with the
same endpoint.
The rays are the   *sides* of the angle.
The endpoint is the   *vertex* .

What is the vertex?

B .

What are the
names of the
sides?

$\overrightarrow{BA}$ $\overrightarrow{BC}$

How would you
name this angle?

∠B

∠1

∠CBA

∠ABC

Name the angles in the diagram.
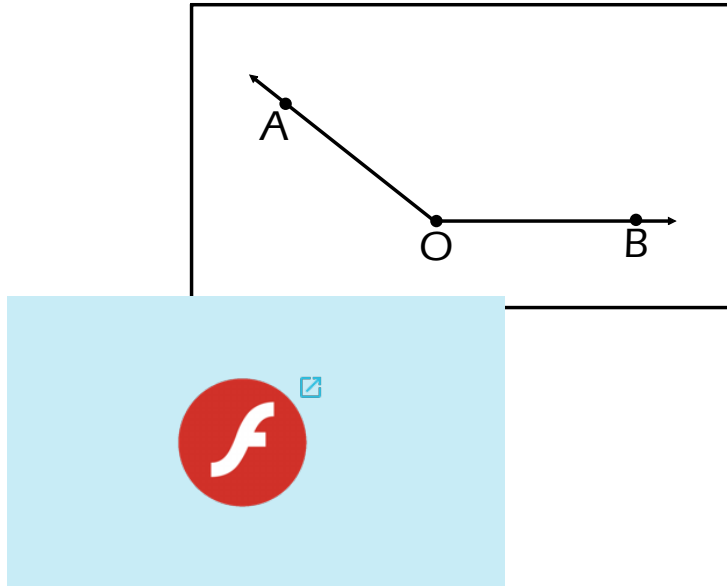
∠MNP

∠PNM

∠MNO
∠ONM

∠ONP

∠PNO
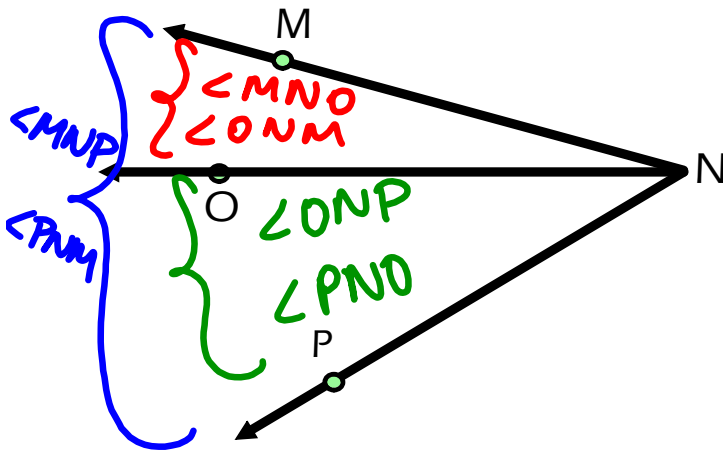
You should only
name an angle by a
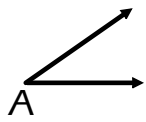<u>single</u> letter when
there is no chance
of confusion.

How do we
measure angles?
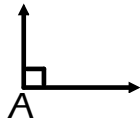DEGREES!!

How to Use a Protractor:

1. Place the center of the protractor on the vertex of the angle with the straightedge along one ray.

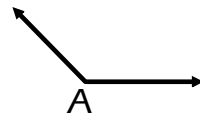2. Use the scale that begins with 0 at the straightedge. Read where the ray crosses this scale.

CLASSIFYING ANGLES

Acute	Right	Obtuse	Straight
$m\angle A$ is between $0°$ and $90°$	$m\angle A = 90°$	$m\angle A$ is between $90°$ and $180°$	$m\angle A = 180°$

Attachments

12.1 The Language of Geometry (Part 2).notebook