

Name _____ Date _____ Pd _____

1.1 – 1.4 Building Blocks of Geometry Literacy

Euclidean Geometry has three undefined terms that are the basis of all Geometry. They are a point, a line, and a plane. A **point** is the basic unit of geometry. It has no size and is infinitely small. It has only one location in space. A **line** is a straight arrangement of points. There are infinitely many points in a line; therefore, the line has infinite length, but no thickness. A **plane** has infinite length and width, but no thickness. It is a flat surface that extends forever.

A point is represented by a dot and a CAPITAL letter. **Collinear points** are points that lie on the same line. Any two points are always collinear because there exists a line through them. A line (\leftrightarrow) is named by any two points on it and the line symbol above the two letters. Part of a line is either a ray or a segments. A **ray** extends infinitely in one direction but has one endpoint. A **segments** (—) has two endpoints. A **ray** (\rightarrow) is named by the endpoint and one other point on the line with the ray symbol above the letters. A segment is named by the two endpoints and the segment symbol above it. A plane can be named by three non-collinear points (three capital letters) or by one capital **script** letter. **Coplanar points** are points that line on the same plane. Any three points are always coplanar because there exists a plane that would contain the three points.

The **intersection** of two figures is the set of points that are contained in both figures. The symbol (\cap) is used to denote intersection. The intersection of two lines is a point, the intersection of a line and a plane is a point and the intersection of two planes is a line. The **union** (\cup) of two figures is all the points contained in either figure.

The **measure or length** of a segment is the distance between its endpoints. To find the length of a segments on a coordinate plane, use the **distance formula**. The **midpoint** of a segment is the point that divides the segment into two equal parts. On a coordinate plane, the midpoint is the average of the endpoint X coordinates and the endpoint Y coordinates. A line and a ray cannot have a midpoint because they extend infinitely in one or both directions.

Directions: Read the paragraphs above to answer the following basic geometry questions.

1. A _____ has no size and represents one location.
2. A _____ has no thickness, is straight, and extends infinitely in two directions.
3. A _____ is a flat surface that has no thickness and extends infinitely in all directions.
4. The intersections of 2 planes is a _____.
5. Any _____ points are ALWAYS collinear.
6. The part of a line that has two endpoints is called a(n) _____.
7. If three or more points lie on a line, then they are called _____.
8. A _____ extends infinitely in one direction and has one endpoint.
9. The intersection of two lines is a _____.
10. The union of two collinear rays going in opposite directions is a _____.

11. We use two _____ on a line to name a line.
12. A _____ is used to name a point.
13. _____ points are ALWAYS coplanar.
14. A _____ has a midpoint.
15. We use the _____ to find the length of a segment on the coordinate plane.
16. Draw a line with points M, N, and S on it and name the line properly.

17. Draw a plane named P with points A, B, and C on it. Name the plane two different ways.

18. Draw three collinear points T, F, and W.

19. Draw three non-collinear points Q, K, and A.

20. Draw two intersection planes, A and B.

(HINT: use dashed lines to show something is behind something else.)

BONUS: Take a picture in the real world of one of the bold words in the paragraphs and show me tomorrow or email me! Be sure to explain what word and why for bonus points. (no duplicate pictures)