GEOMETRY

ANGLE PROPERTIES OF INTERSECTING LINES

Learning Goals

-To learn key vocabulary in geometry

-To understand angle theorems and their relationships to each other and our different line types

-To identify different angle and line types

-To identify unknown angles

VOCABULARY REVIEW

Perpendicular Lines

Lines that meet at a 90 degree angle

Right Angle

When a horizontal line crosses with a vertical line to form a 90 degree angle, these are also called perpendicular lines. 90 degree angles tend to look like “L,s”

VOCABULARY REVIEW

Parallel lines

Two lines that are always the same distance apart, and never touch

Intersecting lines

Two lines that share exactly one point (called the point of intersection)

Transversal lines

A line that cuts across two or more lines, that are usually parallel

VOCABULARY REVIEW

Acute angle

An angle LESS than 90 degrees

Obtuse angle

An angle greater than 90 degrees, but less than 180 degrees

VOCABULARY REVIEW

Right Angle

A 90 degree angle

Interior Angles

An angle inside a shape, and in between two joined sides

EXPLORATION

3. Complimentary

https://www.geogebra.org/m/tNsdcxTB
https://www.geogebra.org/m/taJBQBwE
https://www.geogebra.org/m/RsJ8rwFJ#material/atXNdn8g
1. Corresponding

https://www.geogebra.org/m/kHk7rscV
https://www.geogebra.org/m/gVduf8C5
Can the angles be equal if the lines are not parallel?

2. Alternate
https://www.geogebra.org/m/gFr3Z7Fs
https://www.geogebra.org/m/sn8kMHBK

how are they different from corresponding?
Can the angles be equal if the lines are not parallel?
4. triangle angle relationship

https://www.geogebra.org/m/hXyk6ZAr
5.opposite (or seen as vertically opposite)
https://www.geogebra.org/m/rfadZPXK
https://www.geogebra.org/m/Z2N2zzMp

6.Supplementary angles
who does it differ from complimentary?
https://www.geogebra.org/m/YAw9R8af
https://www.geogebra.org/m/Cx5v2QWg
https://www.geogebra.org/m/gmjW5YfC
https://www.geogebra.org/m/jWpXKjXk

1. **use these tools to fill in work sheet**
   https://www.geogebra.org/m/hXYrYnCD
   for q's

VOCABULARY REVIEW

Corresponding Angles

When two lines are crossed by another line (the transversal), the angles in matching corners are called corresponding angles. Corresponding angles are only equal when the two lines being crossed are parallel.

Alternate Angles

When two lines are crossed by another line (the transversal), a pair of angles on opposite sides of the transversal, that are also interior, are called alternate angles. Alternate angles are only equal when the two lines being crossed are parallel.

Complementary Angles

Two angles that add up to 90 degrees

Supplementary Angles

Two angles that add up to 180 degrees

ANGLE RELATIONSHIPS

1. **Complimentary angles**
2. **Supplementary angles**

When two lines intersect:

3. **Opposites angles**

When two PARALLEL lines are crossed by another line (transversal)… "Z pattern":

4. **Corresponding Angles**
5. **Alternate Angles**

For triangles:

6. **The interior angles of a triangle add up to 180 degrees**

PRACTICE!

Worksheets:

4.9.1 Angle Matching
4.9.2 From Every Angle
4.8.2 That Sums It Up!