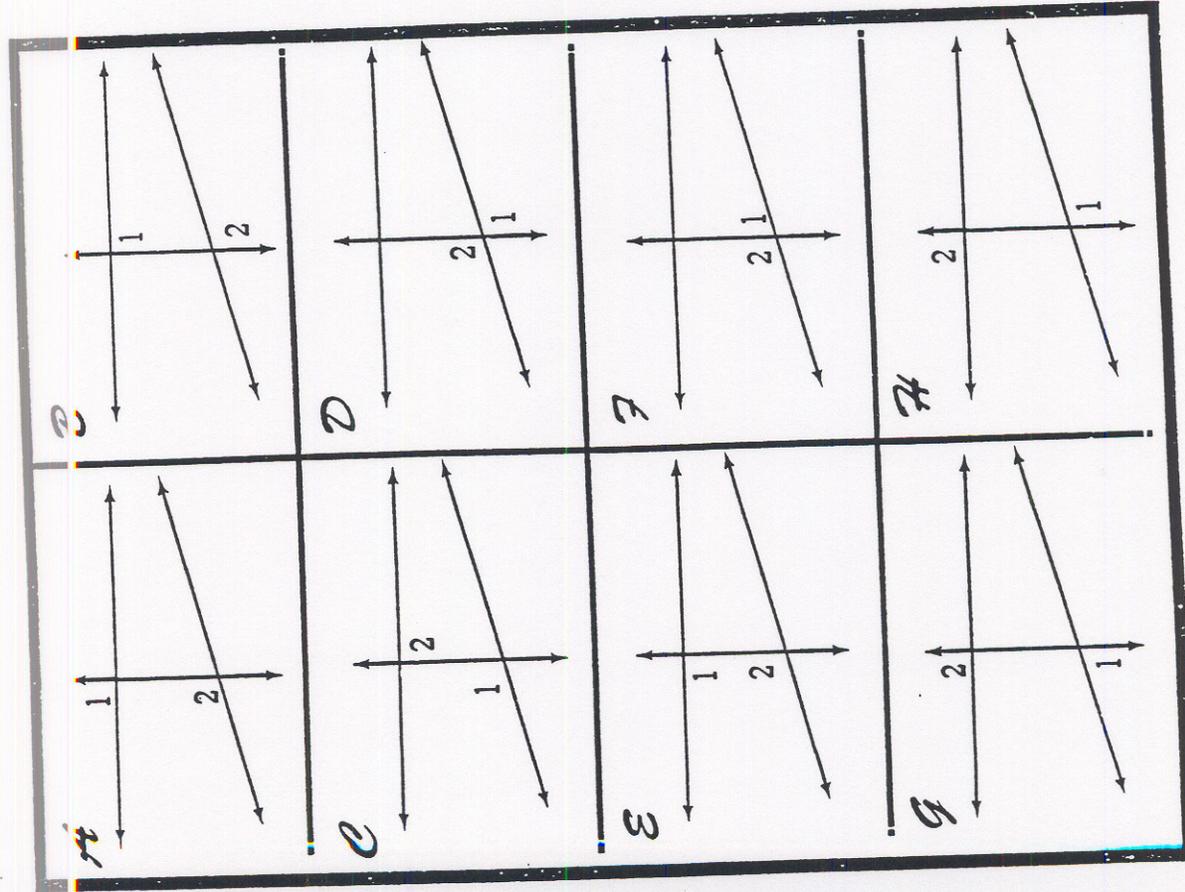


**ANGLES  
FORMED BY  
PARALLEL  
LINES**



CORRESPONDING ANGLES	CORRESPONDING ANGLES
ALTERNATE INTERIOR ANGLES	VERTICAL ANGLES
SAME SIDE INTERIOR ANGLES	LINEAR PAIR
SAME SIDE EXTERIOR ANGLES	ALTERNATE EXTERIOR ANGLES

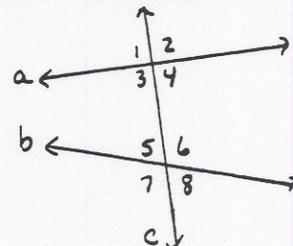
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Group Activity - ANGLES FORMED BY PARALLEL LINES

**DEFINITIONS:** **TRANSVERSAL** - line that intersects two or more coplanar lines at different points.

**PARALLEL LINES** - coplanar lines that do not intersect.

**I. USING THE PICTURE AT THE RIGHT AND YOUR TEXT IF NECESSARY, ANSWER THE FOLLOWING QUESTIONS.**

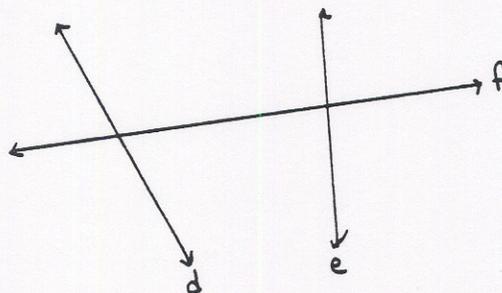


1. Line \_\_\_\_\_ is the transversal.
2. Name the interior angles \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_  
(They are between the two lines other than the transversal)
3. Name the exterior angles \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_
4. Name the 2 pairs of alternate interior angles. \_\_\_\_\_ & \_\_\_\_\_; \_\_\_\_\_ & \_\_\_\_\_  
(Nonadjacent interior angles on opposite sides of the transversal)
5. Name the 2 pairs of same-side interior angles \_\_\_\_\_ & \_\_\_\_\_; \_\_\_\_\_ & \_\_\_\_\_  
(Nonadjacent interior angles on the same side of the transversal)
6. Name the 4 pairs of corresponding angles. (Angles that match in position when one line is slid over the other line)

\_\_\_\_\_ & \_\_\_\_\_; \_\_\_\_\_ & \_\_\_\_\_; \_\_\_\_\_ & \_\_\_\_\_; \_\_\_\_\_ & \_\_\_\_\_

**II. CLASSIFY EACH PAIR OF ANGLES AS ALTERNATE INTERIOR, SAME SIDE INTERIOR, CORRESPONDING, VERTICAL ANGLES, OR NONE OF THESE.**

- |                                 |                                 |
|---------------------------------|---------------------------------|
| 1. $\angle 9, \angle 11$ _____  | 5. $\angle 13, \angle 16$ _____ |
| 2. $\angle 10, \angle 15$ _____ | 6. $\angle 10, \angle 12$ _____ |
| 3. $\angle 10, \angle 11$ _____ | 7. $\angle 14, \angle 11$ _____ |
| 4. $\angle 11, \angle 16$ _____ | 8. $\angle 14, \angle 15$ _____ |



III. NAME THE DIFFERENT PAIRS OF ANGLES ON THE TWO DIAGRAMS. (NOTE THAT  $a \parallel b$  and  $c \nparallel d$ ). NEXT CUT ALONG THE DASHED LINE TO REMOVE THE DIAGRAM. NEXT, CUT THROUGH THE "WAVY LINE." PLACE LINE a OVER LINE b AND COMPARE ANGLE MEASURES. MAKE SIMILAR CUTS ON THE SECOND DIAGRAM AND PLACE LINE c OVER LINE d AND COMPARE ANGLE MEASURES.

1. Name the two pairs of alternate interior angles.

\_\_\_\_\_ and \_\_\_\_\_

2. Name the four pairs of corresponding angles.

\_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, & \_\_\_\_\_

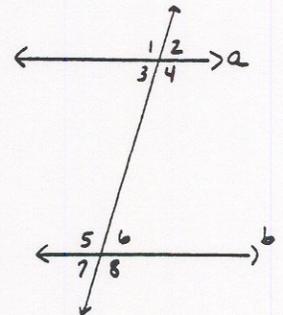
3. Name the two pairs of same-side interior angles.

\_\_\_\_\_ and \_\_\_\_\_

4. After cutting through the "wavy line" and placing line a over b, how does each pair of corresponding angles compare? \_\_\_\_\_

5. Turn line a and place it over line b so that the alternate interior angles are placed over each other. How do they compare in measure? \_\_\_\_\_

6. Cut out  $\angle 3$  by cutting along its two rays. Place  $\angle 3$  adjacent to  $\angle 5$ .  $m\angle 3 + m\angle 5 =$  \_\_\_\_\_. Thus,  $\angle 3$  and  $\angle 5$  are \_\_\_\_\_ angles.



1. Name the two pairs of alternate interior angles.

\_\_\_\_\_ and \_\_\_\_\_

2. Name the four pairs of corresponding angles.

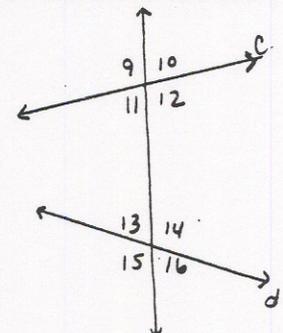
\_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_ & \_\_\_\_\_

3. Name the two pairs of same-side interior angles.

\_\_\_\_\_ and \_\_\_\_\_

4. After cutting through the "wavy line" and placing line c over d, how does each pair of corresponding angles compare? \_\_\_\_\_  
How does each pair of alternate interior angles compare? \_\_\_\_\_

5. Cut  $\angle 11$  by cutting along its two rays. Place  $\angle 11$  adjacent to  $\angle 13$ . Does  $m\angle 11 + m\angle 13 = 180$ ? \_\_\_\_\_ Are they supplementary? \_\_\_\_\_



### CONCLUSIONS:

In the case of parallel lines, what seems to be true about alternate interior angles? \_\_\_\_\_ corresponding angles? \_\_\_\_\_ same side interior angles? \_\_\_\_\_

In the case of nonparallel lines, can you make any generalizations about the three different angle pairs? \_\_\_\_\_

