

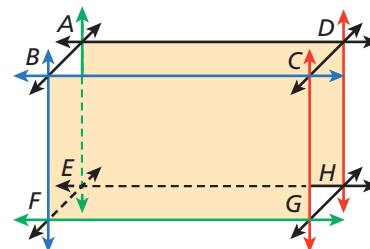
Section Overview

Exploring Lines and Angles

Lesson 3-1

Why? Basic postulates about lines and planes will provide essential concepts for the deductive development of geometry.

Definition	Examples
Parallel lines lie in the same plane and do not intersect.	$\overleftrightarrow{CG} \parallel \overleftrightarrow{BF}$
Perpendicular lines intersect at right angles.	$\overleftrightarrow{BC} \perp \overleftrightarrow{BF}$
Skew lines are not coplanar, are not parallel, and do not intersect.	\overleftrightarrow{FG} and \overleftrightarrow{AE} are skew.
Parallel planes do not intersect.	plane $BCG \parallel$ plane ADH

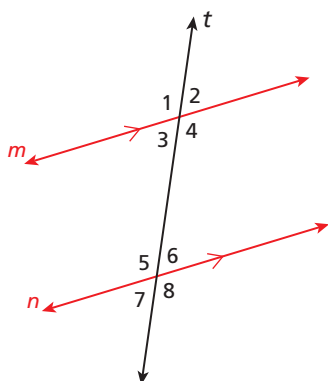


Exploring Parallel Lines and Transversals

Lessons 3-2, 3-3

Why? Students will use properties of parallel lines and related angles to justify theorems about triangle congruence and similarity.

Given: two lines m and n cut by a transversal t



$m \parallel n$

Corresponding \sphericalangle
$\sphericalangle 1 \cong \sphericalangle 5$ $\sphericalangle 3 \cong \sphericalangle 7$ $\sphericalangle 2 \cong \sphericalangle 6$ $\sphericalangle 4 \cong \sphericalangle 8$
Alternate interior \sphericalangle
$\sphericalangle 3 \cong \sphericalangle 6$ $\sphericalangle 4 \cong \sphericalangle 5$
Alternate exterior \sphericalangle
$\sphericalangle 1 \cong \sphericalangle 8$ $\sphericalangle 2 \cong \sphericalangle 7$
Same-side interior \sphericalangle are supplementary.
$m\angle 3 + m\angle 5 = \sphericalangle 180^\circ$ $m\angle 4 + m\angle 6 = \sphericalangle 180^\circ$

Exploring Perpendicular Lines

Lesson 3-4

Why? Students will apply their knowledge of perpendicular lines when they study properties of polygons, quadrilaterals, solids, and circles.

If $\sphericalangle 1 \cong \sphericalangle 2$, then $\ell \perp m$.
 If $\ell \perp p$ and $p \parallel m$, then $\ell \perp m$.
 If $p \perp \ell$ and $\ell \perp m$, then $p \parallel m$.

