Theorems about Lines and Angles

Today's Standard

HSG.CO.C9 - Prove theorems about lines and angles. Theorems include: vertical angles are congruent; when a transversal crosses parallel lines, alternate interior angles are congruent and corresponding angles are congruent; points on a perpendicular bisector of a line segment are exactly those equidistant from the segment's endpoints.

Cues	Notes
What are vertical angles?	Vertical angles are the angles opposite each other when two lines cross. They are always congruent.
What happens when a transversal crosses parallel lines?	When a transversal crosses parallel lines, alternate interior angles and corresponding angles are congruent.
What is a perpendicular bisector?	A perpendicular bisector of a line segment is a line that divides the segment into two equal parts at a 90-degree angle. Points on this bisector are equidistant from the segment's endpoints.
How to prove angle congruence?	To prove angle congruence, use properties of parallel lines, transversals, and perpendicular bisectors. Diagrams and logical reasoning are essential.
Examples of real-world applications?	Applications include designing buildings, creating graphics, navigation, engineering, and traffic analysis.

Summary

This standard involves proving theorems about lines and angles, focusing on vertical angles, transversals with parallel lines, and perpendicular bisectors. Understanding these concepts is crucial for solving complex geometric problems and has various real-world applications.