# Parallelogram Theorems and Properties

## Today's Standard

HSG.CO.C11 - Prove theorems about parallelograms. Theorems include: opposite sides are congruent, opposite angles are congruent, the diagonals of a parallelogram bisect each other, and conversely, rectangles are parallelograms with congruent diagonals.

## Real-World Applications for this Standard

Architectural design involving rectangular and parallelogram shapes.; Engineering projects requiring structural integrity of parallelograms.; Computer graphics and game design using geometric shapes.; Art and design projects involving symmetry and congruence.

## Today I Learned

Today, I learned about parallelograms. A parallelogram is a shape with two pairs of opposite sides that are the same length and two pairs of opposite angles that are the same size.

## Common Stumbling Blocks

Some students think that all shapes with equal diagonals are parallelograms, but that's not true. Also, some think that a shape with one pair of equal sides is a parallelogram, but both pairs need to be equal.

## Quiz Me

- What shape has two pairs of equal sides?
- What shape has two pairs of equal angles?
- Do the diagonals of a parallelogram bisect each other?
- Are rectangles a type of parallelogram?
- Can you name a property of a parallelogram?

## Help Me

A parallelogram is like a rectangle that can be tilted. It has two pairs of sides that are the same length. This is helpful when building things like ramps or roofs, where you need to know the sides will fit together perfectly.