## Unit 2 Lesson 12: Proofs about Quadrilaterals

### 1 Play with Parallelograms (Warm up)

#### Images for Launch



#### Student Task Statement

1. Make several parallelograms with your strips.
2. Make several **rectangles** with your strips.

#### Activity Synthesis



### 2 From Conjecture to Proof

#### Student Task Statement

Here are some conjectures:

* All rectangles are parallelograms.
* If a parallelogram has (at least) one right angle, then it is a rectangle.
* If a quadrilateral has 2 pairs of opposite sides that are congruent, then it is a parallelogram.
* If the diagonals of a quadrilateral both bisect each other, then the quadrilateral is a parallelogram.
* If the diagonals of a quadrilateral both bisect each other and they are perpendicular, then the quadrilateral is a **rhombus**.
1. Pick one conjecture and use the strips to convince yourself it is true.
2. Re-write the conjecture to identify the given information and the statement to prove.
3. Draw a diagram of the situation. Mark the given information and any information you can figure out for sure.
4. Write a rough draft of how you might prove your conjecture is true.

### 3 Checking a Proof

#### Student Task Statement

Exchange proofs with your partner. Read the rough draft of their proof. If it convinces you, write a detailed proof together following their plan. If it does not convince you, suggest changes that will make the proof convincing.

#### Activity Synthesis





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