

## 5.7 Guess My Parallelogram

### *A Practice Understanding Task*

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Tehani and Tia are playing a guessing game in which one person describes some of the features of a quadrilateral they have drawn and the other person has to name the type of quadrilateral.



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Here are some of the clues they gave each other. Decide what type of quadrilateral they are describing, and explain how you know.

1. The diagonals of this quadrilateral are perpendicular to each other.
2. The diagonals of this quadrilateral are congruent.
3. When rotated  $90^\circ$ , each diagonal of this quadrilateral gets superimposed on top of the other.
4. Consecutive angles of this quadrilateral are supplementary (that is, they add to  $180^\circ$ ).
5. Consecutive angles of this quadrilateral are congruent.
6. The diagonals of this quadrilateral are congruent and perpendicular to each other.



# 5.7 Guess My Parallelogram – Teacher Notes

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**Purpose:** The purpose of this task is to become fluent in identifying special types of quadrilaterals based on descriptive features of the quadrilateral. Students will also practice explaining the underlying reasoning that allows them to draw these specific conclusions from the descriptions.

### **Core Standards Focus:**

**G.CO.11** 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.

**Mathematics II Note for G.CO.10:** Encourage multiple ways of writing proofs, such as in narrative paragraphs, using flow diagrams, in two-column format, and using diagrams without words. Students should be encouraged to focus on the validity of the underlying reasoning while exploring a variety of formats for expressing that reasoning

### **Related Standards:**

#### **Launch (Whole Class):**

Explain the context of this game—that students are to identify the type of quadrilateral being described based on a single clue. Point out that it is not sufficient to say what special type of quadrilateral is being described, but they must also provide a supporting argument.

#### **Explore (Small Group):**

Make sure that students aren't over-generalizing the given statements. For example, in question 1 make sure students haven't assumed that the diagonals are congruent in addition to the given statement that the diagonals are perpendicular. Encourage students to draw diagrams or use other exploratory tools to sort out what is given and what it implies about the quadrilateral.

#### **Discuss (Whole Class):**

A marked diagram and a verbal argument is sufficient work for a presentation on each of these questions.

### **Aligned Ready, Set, Go: Geometric Figures 5.7**

