Lesson 15: Razonemos sobre ángulos (parte 2)

Standards Alignments

Addressing   4.G.A.1, 4.MD.C.7

Teacher-facing Learning Goals

- Represent angle relationships and solve for unknown angle measurements.

Student-facing Learning Goals

- Averigüemos las medidas de algunos ángulos desconocidos.

Lesson Purpose

The purpose of this lesson is to use known angles to reason about unknown angles and write equations to reason about unknown angles.

In this lesson, students use what they know about angles and their measurements to solve problems that are increasingly more complex and abstract. To find measurements of unknown angles, students need to look for structure in the diagrams, reason about the relationships of the angles (including writing equations to represent the relationships), and perform addition, subtraction, and sometimes division.

The problems in the lesson can be solved in more than one way and in different orders, but a small handful of the angles can only be quantified after the values of some other angles are known. Students pay attention to the process and explain why sometimes a certain sequence is necessary.

This lesson has a Student Section Summary.

Access for:

ⓐ Students with Disabilities

- Representation (Activity 1)

🌐 English Learners

- MLR8 (Activity 1)

Instructional Routines

How Many Do You See? (Warm-up), MLR4 Information Gap (Activity 2)

Materials to Copy

- Info Gap: Whole Bunch of Angles, Spanish (groups of 2): Activity 2

Lesson Timeline

Warm-up	10 min
Activity 1	15 min
Activity 2	20 min
Lesson Synthesis	10 min
Cool-down	5 min

Teacher Reflection Question

As you finish up this unit, reflect on the norms and activities that have supported students' development as thinkers. How have students grown in their ability to reason more abstractly and logically? What instructional strategies or routines worked well in supporting this development? What will you continue to do and improve on in Unit 7, and what will you adjust?

Cool-down (to be completed at the end of the lesson) 🕐 5 min
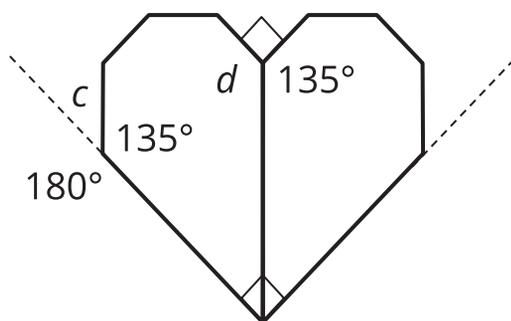
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Standards Alignments

Addressing   4.G.A.1, 4.MD.C.7

Student-facing Task Statement

Encuentra las medidas de los ángulos que están marcados. Muestra cómo razonaste.

Student Responses

The measure of angle c is $45°$ and that of angle d is $135°$. Sample reasoning:

- Angle c and the $135°$ angle together make a straight angle, which is $180°$, so the measure of c is $180 - 135$, which is 45.
- Angle d, the right angle, and the $135°$ angle make $360°$. $90 + 135 = 225$ and $360 - 225 = 135$.