Lesson 10: Rectas perpendiculares y medidas de ángulos

Standards Alignments

Addressing   4.G.A.1, 4.MD.C.5.b, 4.MD.C.6, 4.NBT.B.6

Teacher-facing Learning Goals

- Recognize that perpendicular lines meet or cross at a right angle.
- Use a protractor to measure angles.

Student-facing Learning Goals

- Midamos todo tipo de ángulos.

Lesson Purpose

The purpose of this lesson is for students to practice using a protractor to measure angles and to learn that lines that intersect at a right angle are **perpendicular lines**.

In a previous lesson, students learned that a 1-degree angle measures a turn through $\frac{1}{360}$ of a circle and that a protractor could be used to measure angles in degrees.

In this lesson, students practice using a protractor to measure a variety of angles—angles formed by rays or line segments and those that are in other two-dimensional figures. Students consider how to position the tool, which set of numbers to use, and whether their measurements make sense.

Next, students are prompted to fold paper to create two lines that form right angles. They learn that intersecting lines that form 90° angles are **perpendicular**. They then practice identifying perpendicular lines and segments.

Access for:

♿ Students with Disabilities

- Representation (Activity 2)

🌐 English Learners

- MLR8 (Activity 1)

Instructional Routines

MLR2 Collect and Display (Activity 2), Number Talk (Warm-up)

Materials to Gather

- Colored pencils: Activity 2
- Paper: Activity 2
- Protractors: Activity 1
- Rulers or straightedges: Activity 1, 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

In the past few lessons, students may have made assumptions (correct or incorrect) about angle sizes based on their appearance. In this lesson, they may have done the same when looking for perpendicularity. What questions can you ask, or what instructional moves can you consider, to encourage students to check their assumptions?

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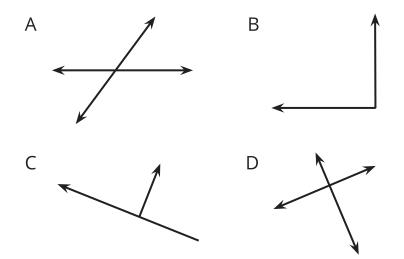
Mide ángulos

Standards Alignments

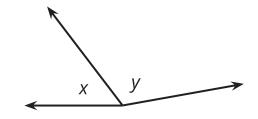Addressing   4.G.A.1, 4.MD.C.5.b, 4.MD.C.6

Student-facing Task Statement

1. ¿Cuáles figuras muestran rectas o rayos perpendiculares?

A

B

C

D

2. Usa un transportador para medir los ángulos que están marcados en la figura.

x y

Student Responses

1. B, C, and D
2. Angle x is $53°$. Angle y is $117°$.