Teacher Supporting Materials for
Lesson 2 Episode 1: Making Sense

Episode Description

Keoni notices that the grid allows them to measure the distance between some points and lines. Sasha and Keoni use the grid and the definition of a parabola to validate that three points are on the parabola.

Students' Conceptual Challenges

Students may be confused about what measuring system to use with a coordinate grid, especially after having used a ruler to measure similar distances in Lesson 1.

➡️ In Episode 1, Sasha and Keoni measure distances in terms of units (e.g., a point is 2 units to the right of the origin) [**1:13**]. But in Episode 2, Sasha wants to use a ruler and Keoni convinces her that it is not needed [**1:14, Episode 2**].

Focus Questions

For use in a classroom, pause the video and ask these questions:

1. [Pause video at **1:19**]. What do Sasha and Keoni know about the coordinate grid? What else do you know about the coordinate grid?

2. [Pause video at **3:32**]. How is Sasha measuring the distances between the point on the parabola and the focus and the directrix? Why does her method work?

Supporting Dialogue

Invite students to reflect on initiating problem solving by asking this question:

- Sasha and Keoni show that two coordinate pairs are on the parabola. Discuss with your partner why they might have started with those two points.

Math Extensions

1. Why are the axes on a coordinate grid perpendicular? How is that helpful?

1. Describe any other ways you know about to describe and measure points on a plane.