

## **Explicit Teaching in Problem-based Mathematics Surface Big Ideas and Uncover Curriculum**

[MUSIC]

NARRATOR 1: Surface big ideas and uncover curriculum.

NARRATOR 2: Determine your teaching focus. Select mathematical tasks that surface big ideas and uncover curriculum expectations. In this resource teachers focus on area and perimeter concepts, and spatial and algebraic reasoning. Arranging, composing, decomposing, and analyzing different shapes with the same area helps students uncover and generalize the foundational relationships between area and perimeter.

STUDENT 1: One, two, three, four, five, six. Okay, you do it.

STUDENT 2: [INAUDIBLE] you do that one.

BRENDA KRESS: Today our big idea is relating area and perimeter and the students will be involved with a task where area stays the same, but the perimeter is changing based on how they arrange the shape.

STUDENT 3: The one on the top.

BRENDA KRESS: I anticipate that as the students start to create their arrangements they will notice that the area stays the same however the perimeter will begin to change. I'm wondering if students will notice that these two arrangements are actually the same.

STUDENT 4: One, two.

BRENDA KRESS: So I'm wondering if they'll understand or notice that congruent, that these are actually congruent by reflecting, translating, rotating.

ALLISON BERSCHT: When I see how students are organizing their work it allows me some insight into how they are thinking and what their thinking process is. In specific in this activity seeing how some of the students are taking and grouping according to the number of sides I can see that they are generalizing already some patterns for area and perimeter and it then opens up to me some new avenues for questioning and where I can take their thinking further.