Is it a Half?

Clip 2: *What makes something ½?*

Brief description of focus of video: Video clip #2 shows a classroom researcher tries to get them to expand their thinking about ½ and use a definition of ½ based on area to categorize determine whether each card does or does not represent ½.

After this, the students work developing their thinking. (See clips 3a. 3b and 3c.)

Clip 2 *What makes something ½? (Especially when it doesn't "look like it"?)*

00:06 – 2:33

R: [*drawing squares and splitting them into 4 smaller squares*] Okay, so I think you guys agree if I do this and shade over here [*shades 2 out of the 4 smaller squares in the square*] you are going to tell me half is shaded.

G1 and G2: Yeah.

R: Okay you agree to that. Now what if I go like this [*draws another square*] and I cut it into 4 again [*splits square into 4 smaller squares]* and I do this and this [*shades 2 smaller squares in the square that are not next to one another*]. Is half of the area of that square shaded?
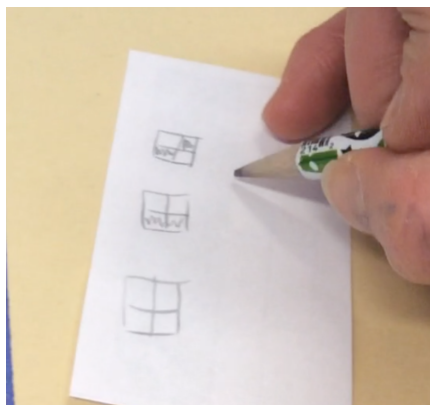
G1: Well actually it is because that is the same size as that one. [*pointing to smaller squares within square]*

00:30

R: [inaudible] piece together are the same size?

G1: Well, no it's still not half. Because…

G2: Because they have to be the same size, same shape,….

R: Oh, but if I do my shaded pieces, there's two. You see those are the shaded pieces? [*draws the two shaded smaller squares on their own outside of the larger square*]

G1 and G2: Oh yeah.

R: And the nonshaded is like this at least, right? [*draws nonshaded smaller squares on their own outside of the larger square*]

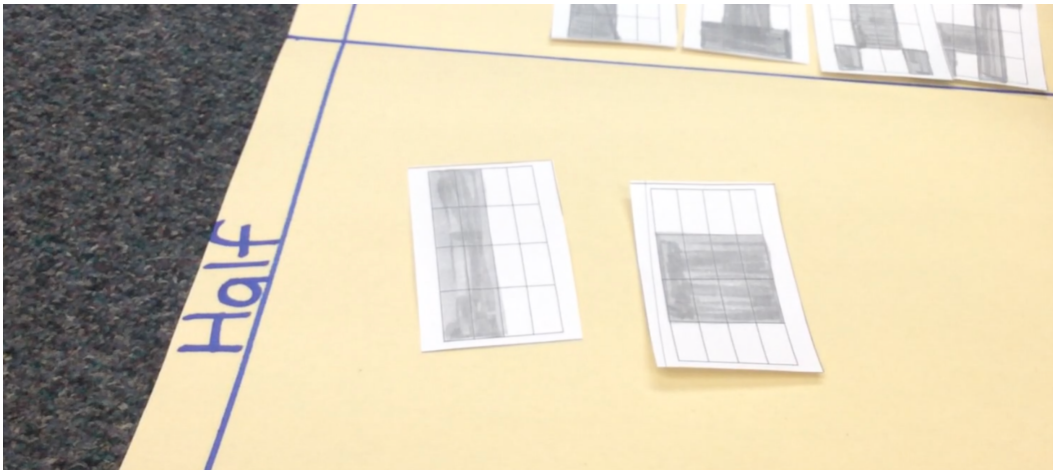G1: Oh yeah. So it is half.

01:00

R: It is half in that case. [*G1 has picked up a card that had been in Not A Half*] Now, so are you now agreeing this one is half, too?

G1: Yeah. She agrees [*referring to G2*].

R: [*asking G2*] Okay so what do you think? You're not sure yet?

G2: It looks like it.

R: It looks like it. So the way we decide half is going to be based on area.

G2: Actually, it kind of makes sense because these two are together [*pointing to shaded region from previous example*] and these two are together [*pointing to shaded region from original example*]. These two may not be together [*pointing to nonshaded from original example*] but that still doesn't mean it has to be.
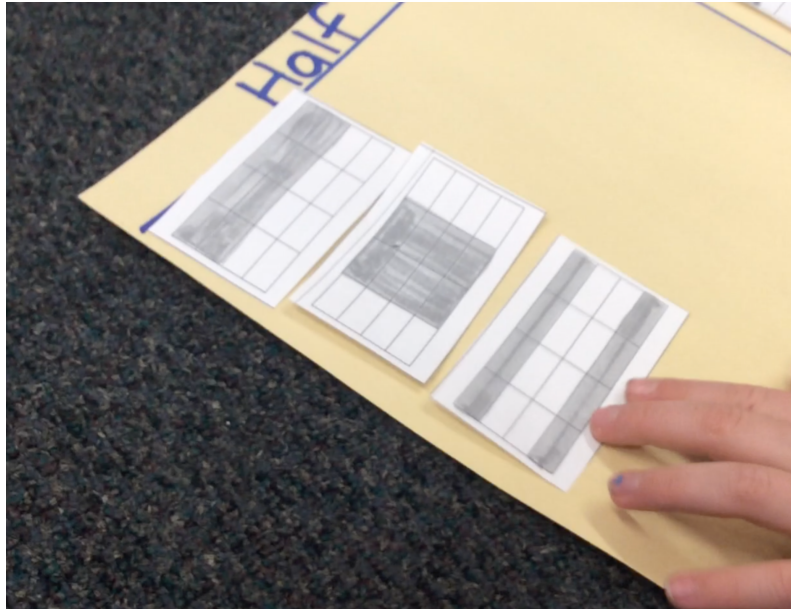
G1: Yeah, but it would make more sense if they're together. But, it can still be like that.

01:35

R: Okay, I would agree. It's easier to see when it's together, but - .

G1: [*picking up another card*] And this one also.

R: And that one also. Tell me about that one now.

G1: That one [*pointing to a different example and placing it under the "Half" column*] I think is it, because it's also like that.

R: Okay, so can you give me a really clear couple of sentences to convince me that half of the area is shaded? How do you know it's half of the area?

G1: Well, because these are the two same [*pointing to shaded region*] as that one [*pointing to the nonshaded regions*]. And it doesn't make any difference if it's that one [*pointing to shaded region from previous example*] and that one [*pointing to nonshaded region from previous example*]. They're almost the same, but these two are on the side and the white ones are in the middle [*pointing to previous example*].
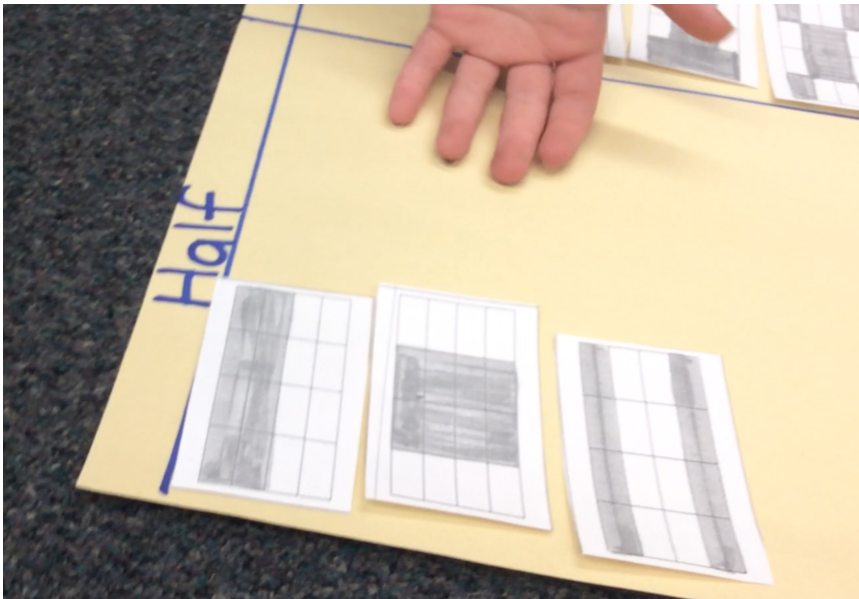
02:10

R: Okay. You want to give an argument too? [*turning towards G2*]. I'd like to hear your thinking about it.

G2: It's just the same thing. These two are together again [*pointing at previous example*] and…yeah…and… It's just like ...so it's getting mixed up kind of. So like these two [*pointing to previous example*] are not together, these two are together [*pointing to nonshaded regions, then shaded regions*]. These two, these two are together *[pointing to nonshaded regions]* and these two are not *[pointing to shaded regions]*. It's just like…[interrupted by G1]

02:34