Playing the *Fraction Cookie* Game

The class is playing the *Fraction Cookie* game in Session 2.1. The teacher listens in as Elena and Gil talk to each other while they play. She occasionally asks the students questions about the moves they are making.

Elena: I rolled one sixth, so I need a green.

She takes a green triangle and fits it onto one of the hexagons on her copy of the Hexagon Cookies page.

Gil: I got one half. So I'll take a red. And I can trade in my two reds for one yellow.

He makes this trade and places a yellow block on the hexagon he has just filled in on his Hexagon Cookies page.

Teacher: Gil, why did you trade your two reds for a yellow?

Gil: I know that they're both halves, and two halves are one whole. [He writes $\frac{2}{2} = 1$ on his recording sheet.]

Elena: Okay, my turn. I got one third. That's a blue. Can I do any trades? I could trade my green and blue for a red.

Teacher: How come, Elena?

Elena: They fit together to make the same shape as the red, like this. [She demonstrates.]

Teacher: So what does that tell you about fractions of a whole cookie?

Elena: That they go together. If you put a third and a sixth together, you get a half of a cookie.

Gil: If you had two blues, you could trade them for four greens.

Elena: But that would be more pieces, and I want less.

Gil: [as he rolls the fraction cube] Two thirds, that's two blues. And I have another blue. I'm trading these three blues for a yellow.

Teacher: How do you know that all those pieces will make a whole cookie?

Gil: Three blues—that's three thirds—it's the same as two halves, and they're all just one yellow. But we ran out of yellows. I'll just color in a yellow and then I'll know I made a whole.

The teacher is helping these students focus on the pattern block pieces as representations of fractions. Both students are moving back and forth between naming the pieces by color and by their fraction names. As they do this, they are developing a strong visual image of how thirds, sixths, and halves combine to make a whole. They are also becoming familiar with a number of basic fraction equivalencies, such as the relationship between thirds and sixths.