3. Making Cookie Shapes (Grade 3)

Learning Goals: Identifying fractional parts that add to one whole; writing fraction expressions (modeling addition and subtraction of fractions and writing fraction number sentences)

Materials: Pattern blocks, Hexagon Cookies (Student Sheet 5), Fill the Hexagons Gameboard (Student Sheet 2), pattern block templates, fraction dice

Task: Using the record of building hexagon cookies, write the corresponding fraction in each pattern block. Write a number sentence next to each hexagon to show what fractions were used to make one whole.

Discussion: What are some of the fraction sentences you wrote next to your hexagons?

Task: Play the Fraction Cookie Game (Beginning Level). Taking turns with a partner, roll the fraction die, take the fractional part or parts and place them anywhere on the gameboard. Once placed in one of the six hexagons, a pattern block must remain in that hexagon. Fill the gameboard with pattern blocks, with no empty spaces. If you can't use the fraction rolled, your turn is over. First one to fill all six of the hexagons on his or her gameboard wins the round.

Play the Fraction Cookie Game (Intermediate Level). Roll two fraction dice and add the fractions to determine how much cookie to place on the gameboard. Continue until your gameboard is filled.

Play the Fraction Cookie Game (Advanced Level). Start with two hexagons filled with any combination of pattern blocks. Roll three fraction dice (one of which is a different color than the other two). Add the amounts on the two dice of the same color and subtract the amount of the third die to determine how much cookie to place on the gameboard. Continue until your gameboard is filled.

Discussion: Solve these fraction expressions. You may use mental images or models with pattern blocks, but not traditional calculations with common denominators.

$1/2 + 1/3 + 1/6 = \square$

$5/6 + 1/3 = \square$

$1\ 2/3 + 1/2 = \square$

$2\ 1/3 + 3\ 5/6 = \square$

$5/6 - 1/2 = \square$

$2\ 1/2 - 1\ 5/6 = \square$