

MIXED UP FRACTIONS

Introducing the Problem:

Say: We have been studying fractions and ask students to name some fractions. When I write the fractions you name they look like these: (Write 3 or 4 of them on the overhead.)

Write numbers such as the following on the overhead: $3\frac{1}{2}$, $2\frac{1}{4}$, $3\frac{3}{8}$

Ask students how these numbers are different from the fractions and what they might be called. Where are some places where we might use these numbers?

Exploring with Fraction Factory™ Pieces:

1. Tell the students to put out a recording sheet where everyone in the group can see it. Take the black Fraction Factory piece and fit it into the space at the top. Now move it to cover each whole space in the shape. **How many whole pieces fit in the shape?** (3)
2. Tell the students to find a piece that will fit in the leftover part of the shape. **What is this piece?** ($\frac{1}{2}$) **So, the name of this shape when we cover it with Fraction Factory Pieces is three and one-half.** Write the mixed number where students can see it.
3. Ask the students to use $\frac{1}{2}$ pieces to find out how many halves it would take to cover the shape. (7) So $3\frac{1}{2}$ is the same as $\frac{7}{2}$.

Recording the Connection:

1. Someone in each group should trace, color, and label a recording sheet to show the number of $\frac{1}{2}$ pieces in the shape. They should complete the equation.
2. Tell students to choose another color Fraction Factory Piece and try to cover the shape with that color. If they are successful, they should complete a recording sheet for that piece.
3. Have students continue with all the different Fraction Factory Pieces.
4. When each group thinks they have found all the possible ways to show $3\frac{1}{2}$, they should write a few sentences to tell what they found out. ($\frac{7}{2}$, $\frac{14}{4}$, $\frac{21}{6}$, $\frac{28}{8}$, $\frac{35}{10}$, $\frac{42}{12}$)

Discussion:

Ask students if they think other mixed numbers can be changed to fractions.

[Source: Connections: Linking Manipulatives to Mathematics Grade 4, p.56-59, Creative Publications, Inc.]