Decomposing Common Fractions

In this activity, students decompose common fractions into a sum of unit fractions.

resources

Each student will need:
- 1 copy of Enrichment Page 6.1

activity

- Project the Step In discussion and explain that $^3/_4$ of a pie was left over at a party. Ask, How could you prove that the pie was cut into fourths? Guide the students to explain that the pie was cut into four equal pieces and that one of the pieces has already been eaten. Reinforce that there are four counts of one-fourth in one whole.

- Ask, How could we share the left over pie equally among the three friends? Invite three volunteers to the front to act as the three friends. Ask, How many pieces of pie should they each get? (1.) What fraction of the leftover pie is each person given? ($^1/_4$.)

- Project the incomplete equation and ask, How can we complete this equation to show how the leftover pie was just shared? Elicit that three counts of one-fourth is equal to three-fourths. Invite a volunteer to complete the equation.

- Project the pie that is split into eighths and repeat the discussion. Ask questions such as, How do you know that the pie is cut into eighths? How many eighths are in one whole? How many eighths are left over? How could you share the leftover pie equally among five friends? What fraction of the pie is in each share? Invite five volunteers to act as the five friends. Guide the students to explain that each person is given one piece of the leftover pie and that each piece is equal to one-eighth of the whole pie. Project the incomplete equation and have a confident student complete the sentence.

- Ask, How could two people share the same amount of leftover pie? The amount in each share does not have to be the same. Invite two volunteers to act as the two people. Ask one student, (Jacob) how many pieces of pie would you like to take? (3.) Ask the second student, (Emma) how many pieces of pie are left for you to take? (2.) What fraction of the whole pie do you each take?

- Write the incomplete equation $\frac{5}{8} = \underline{\quad} + \underline{\quad}$ on the board and ask the class, How many eighths of the pie does Jacob take? ($\frac{3}{8}$.) How many eighths of pie does Emma take? ($\frac{2}{8}$.) Then have the two students each write their matching fraction to complete the sentence. Repeat the activity with other students, sharing the pie in different ways. Point out that the denominator in each situation remains the same, while the numerator is split into two parts.

- Have the students work independently to complete the enrichment page. Afterward, the students can come together to share their solutions and strategies. Ask the students to share the different ways they split the pie between two people in Question 3.

assessment 👁

- Can the student decompose a common fraction into a sum of unit fractions?

- Can the student decompose a common fraction into a sum of two common fractions with the same denominator e.g. $\frac{5}{8} = \frac{1}{8} + \frac{4}{8}$?