In these activities you will use arithmetic structure to find solutions to equations that can be converted to the form $ax = b$ or $x + a = c$. After completing the activities, discuss and/or present your findings to the rest of the class.

Activity 1 [Page 1.3]

1. Tammy generated the equation $29 = 2(x - 11) - 3$.

   a. She reasoned that if she highlighted $2(x - 11)$ it would be like figuring out what number minus 3 is 29. Do you agree or disagree with Tammy? Explain your thinking.

   b. What equation would her reasoning produce? What arithmetic question could she then ask?

   c. Tim followed Tammy's advice and ended up with the equation $x - 11 = 3$. What would you say to Tim?

   d. Tammy ended up with $x - 11 = 16$. What would you say to Tammy?

2. Suppose you generated the equation $36 = 4(x - 3) + 8$.

   a. Think about highlighting different parts of the expression on the right in the equation above. Which helps you think about an easier arithmetic problem?

   b. Use the highlight method to find a value for x that makes the equation true.

3. Work with a partner. Use **New** or **menu> Equations> New** to generate four different equations of the form $ax = b$; $ax + b = c$; $\frac{ax}{b} = c$; or any of those forms with the constant term on the left side of the equals sign. Find the value of *x* that makes the equation true for each equation. Write down the equations and how you found the value for *x*. Be ready to share your equations and solutions with the class.

4. Select **New** or **menu> Equations> New** (Depending on your teacher's instructions, you may want to choose equations of the same form as those in problem 3.)
   a. Find a value for *x* that makes the equation true using the highlight method.
   b. Write an explanation for someone who was absent from class explaining how you can use the file to find a value for *x* that makes your equation true. Share your explanation with a partner to see if they agree.

Activity 2 [Page 1.3]

1. Generate a new equation. Write a story for your equation. Then exchange your story with a partner and solve each other's stories.

Activity 3 [Page 1.5]

1. Use **New** or **menu> Equations> New** to generate six equations.

   a. Write down each equation and its solution. Work with a partner to separate the twelve equations you have into two to four groups according to some criteria that makes sense to you. Generate two more equations and see in which of your groups they could be placed. Be ready to share your thinking with the class.

   b. Do you notice anything about the equations in any of your groups? About their solutions?