Applications of Equations
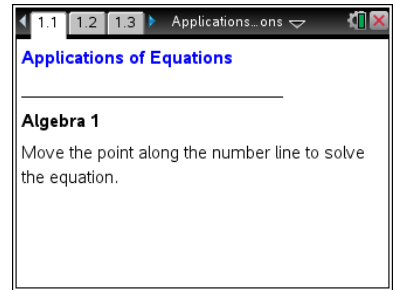**Student Activity**

Name _____

Class _____

Open the TI-Nspire document *ApplicationsOfEquations*.

Real-world problems can be solved with an equation. However, it is important to understand what the variable represents and how its possible values are limited.

1.1 1.2 1.3 ▶ Applications...ons ▽

Applications of Equations
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Algebra 1
Move the point along the number line to solve the equation.

Move to pages 1.2 – 1.4.

Press `ctrl` ▶ and `ctrl` ◀ to navigate through the lesson.

A certain exhibit at a museum can only be viewed by small groups of people. In the morning, a group of 5 people visited the exhibit. In the afternoon, groups of 2 people visited the exhibit. If a total of 17 people viewed the exhibit that day, how many groups of 2 people visited in the afternoon?

1. The equation that represents the problem is shown on page 1.2. What does x represent?

2. Why is x multiplied by 2 and not 5?

Move to pages 1.5 – 1.6.

Move the point along the number line. When the value of x satisfies the equation, the word "false" will change to "TRUE."

> **Tech Tip:** If you have trouble dragging a point, check to make sure you move the cursor (arrow) until it becomes a hand (✍) getting ready to grab the point. Then press `ctrl` 🖱 to grab the point and close the hand (✍). When finished moving the point, press `esc` to release the point.

3. What is the value of the left side of the equation when the word "false" changes to "TRUE?" What is the value of x?

4. Explain how the value of *x* can help you answer the question.

Move to pages 21 – 2.6.

Sarah ordered flowers from an online florist that sells flowers by the dozen (12 flowers). The special that week included an additional 10 flowers with each flower order. If Sarah received 46 flowers, how many dozens of flowers did she order?

5. Write an equation to represent the problem in terms of *x*. Explain what *x* represents.

On page 2.3, change the numbers in each box to match your equation from Question 5. To change the equation, double click on the portion of the equation that you want to change, type in the new text, and press ⌷enter⌷.

6. What value(s) of *x* on the number line would not make sense for the problem? Explain your reasoning.

7. How does the value of the expression on the left side of the equation change as the point moves to the right? To the left?

8. Explain how you can move the point to help you answer the question.