

# Hands-On Equations: Student Worksheet

## Hook

Using manipulatives allows students to better visualize mathematical concepts. The Hand-On Equations manipulatives help students "balance" the scale and "solve" equations. Students need to remember the property of equality, "whatever you do on one side of the equation, you must do to the other side"

## Group Arrangement

Students work individually or in pairs

## Tools

- Hands-On Equations Manipulatives
- Worksheet with balance scale

## Procedure

1. Each student receives the Hands-On Equations kit.
2. Review the property of equality, "whatever you do on one side of the equals sign, you must do on the other side."
3. Review how to make zero sets.
4. Goal: to get the variable on one side of the equation by itself.
5. Demonstrate examples:  $x = 5$   
 $0 = 0$ , then  $-2 + 2 = 0$   
 $x + 3 = 5$   
 $2x = x - 2$   
 $3x - 1 = x + 5$
6. Have students demonstrate  $3x - 1 = x + 5$ .
7. Hand out the Hands-On worksheet.

## Hands-On Equations Worksheet

Use your Hands-On Equations kits to find the value of  $x$ . Then, check your answer on your paper.

1.  $x - 3 = 1$                        $x = \underline{\hspace{2cm}}$                       check:

2.  $2x = x + 5$                        $x = \underline{\hspace{2cm}}$                       check:

3.  $x + 6 = 2x - 3$                        $x = \underline{\hspace{2cm}}$                       check:

4.  $x - 2 = -2x + 1$                        $x = \underline{\hspace{2cm}}$                       check:

5.  $2(x + 1) = x + 9$                        $x = \underline{\hspace{2cm}}$                       check:



## **Math Connection**

As a result of this activity, students can visualize the equality principle and will be able to have a better understanding of the steps used in solving equations.