Shelf Work: Adding and Subtracting Integers:

Ingredients:

- ☐ **Equations Envelopes** (~50) containing = - + and integer cards
- ☐ Guide Sheet
- ☐ Control of Error
- ☐ Integer Addition and Subtraction Reference Tables
- ☐ **Mixed Integer Addition and Subtraction Parts** envelope

Instructions

1. Use one envelope at a time.
2. Assemble the parts in the envelope into valid equation.
3. When you are sure the equation is correct, return the parts to the envelope, set it aside and select another.
4. Assemble as many correct equations as you like.

Exploration / extending your learning:

1. Make sure the Equations Envelopes are put back carefully.
2. Open the **Mixed Integer Addition and Subtraction Parts** envelope.
3. Try to generate new true equations.

What ways can you find to rearrange subtraction equations?

What ways can you find to make valid chains of numbers, operations, and equations?

Guide

When adding, the order of the addends does not matter.

Adding two positives example:
$10 + 9 = 19$ and $9 + 10 = 19$ are the same.

Adding two negatives: example:
Is $-10 + -9 = -19$ the same as $-9 + -10 = -19$?

Adding a negative and a positive: examples:

$-10 + 9 = -1$

$9 + -10 = -1$

$10 + -9 = 1$

$-9 + 10 = 1$

When subtracting, the order of the minuend and the subtrahend matters.

Subtracting a positive from a positive
$10 - 9 = 1$

Subtracting a positive from a negative
$-10 - 9 = -19$

Subtracting a negative from a positive
$10 - (-9) = 19$

Did you notice…? Subtracting a negative from a positive is the same as adding a positive
$10 - (-9) = 19 \quad = \quad 10 + 9 = 19$

Subtracting a negative from a negative
$-10 - (-9) = -1$

Did you notice…? Subtracting a negative from a negative is the same as adding a positive
$-10 - (-9) = -1 \quad = \quad -10 + 9 = -1$