

Activity 2: DRAWING INTEGER COMBINATIONS

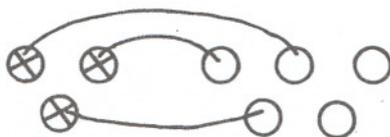
(Pictorial Action)

Materials: Paper
Pencil
Small counters (optional)

Management: Partners (30 minutes)

Directions:

1. Have students draw circles to show different integer situations. Use small circles with a large X inside each to show negative amounts and small plain circles to show positive amounts. Occasionally use the *water in-water out* language from Activity 1 to describe the integers being combined in an exercise. Some students may still need to work with the counters from Activity 1; this is quite acceptable. Have them show each exercise with their counters first, then draw pictures of the steps they used with their counters.
2. Begin with the combination: $(-3) + (+5)$. Students should draw 3 negative circles and 5 positive circles, then form positive-negative pairs to make 0-pairs. 2 positive circles will be left unmatched. Record the result: $(-3) + (+5) = +2$.



3. Write other combinations on the chalkboard for students to draw in order to solve. Number sentences can be written to record the results. Be sure to include all four (positive/negative) types. Here are some examples, one per type:

(a) $(+2) + (+7) = ?$

(b) $(-5) + (-3) = ?$

(c) $(+4) + (-6) = ?$

(d) $(-5) + (+8) = ?$

[Note: In (c) there are more negative units; in (d) there are more positive units.]

Also use exercises involving inverses like $(-4) + (+4) = ?$

4. After students have drawn models for at least two exercises of each type listed above, ask partners to write down any patterns they have discovered for combining or adding two integers. Have different students share their ideas with the entire class. Typical responses will be as follows:

- (a) If two integers have the same sign, their amounts of units (positive or negative) are just totalled and keep that same sign.
- (b) If two integers have different signs, then the two amounts of units are matched to form 0-pairs and the leftover units will have the sign of the integer representing the larger amount of units.

Allow students to develop their own wording for these relationships.