

## Class Activity 9K Encoding and Decoding Secret Numbers

Work with a partner and try this method of encoding and decoding secret numbers.

Pick a secret number and encode it as follows, without showing your partner:

**Step 1:** Multiply your secret number by 5.

**Step 2:** Add 3 to the result.

**Step 3:** Multiply the result by 6.

**Step 4:** Subtract 11 from the result.

The final result is your encoded secret number. Give this encoded number to your partner. Your partner can now decode your secret number as follows:

**Step 1:** Subtract 7 from the encoded number.

**Step 2:** Divide the result by 10.

**Step 3:** Divide the result by 3.

The final result should be your original secret number.

Work with your partner to figure out why this works. Define a variable and write expressions to help you unravel the mystery.