Bean Counters

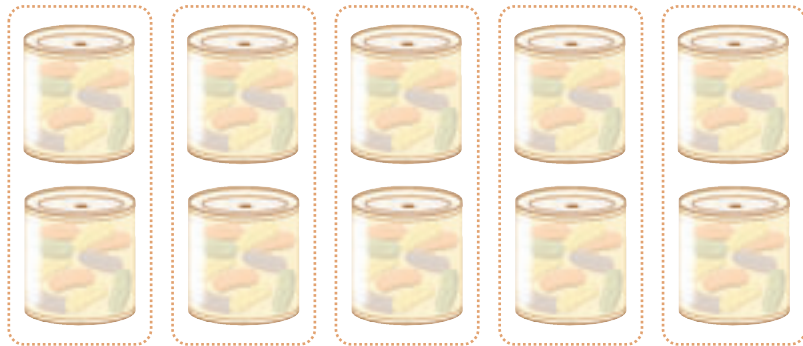**You need** ☑ beans and canisters (optional)   ☑ a classmate

Activity

1. Aronui uses beans and canisters to help her work out **5 x 20**.
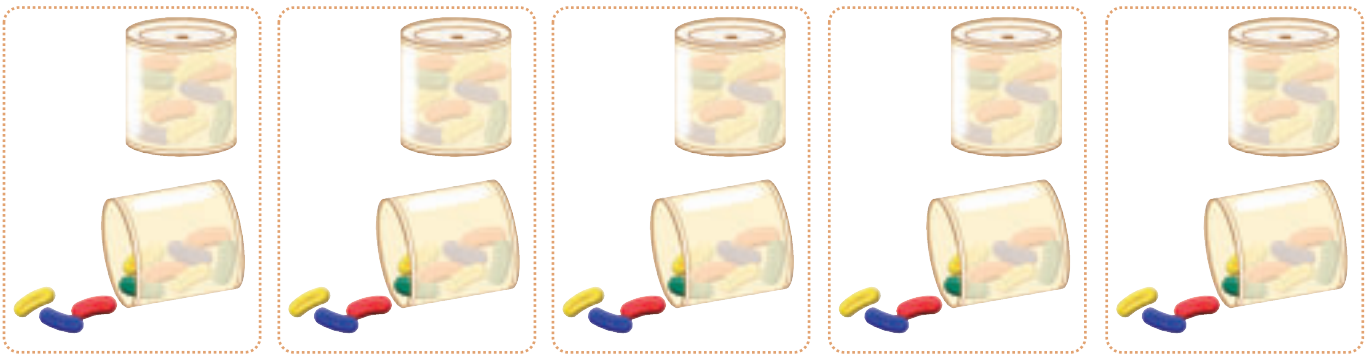Each canister has 10 beans in it.

> There are 20 beans in 2 canisters, so I need 5 groups of 2 canisters.

> I know that 5 groups of 2 canisters is 10 canisters because 5 x 2 = 10, but what's 5 x 2 tens?

How does Aronui use the fact she knows (5 x 2 = 10) to solve 5 x 20?

2. Now Aronui wants to work out **5 x 17**.
She takes 3 beans out of each group and lays them on the table.

    a. In each group, how many beans are still in the canisters?

    b. How many beans altogether are lying on the table?

    c. Aronui knows how to work out 5 x 20.
    How can she use this to work out 5 x 17?

Using tidy numbers and compensating to solve multiplication problems

3. Aronui makes 3 groups of 20 to help her solve **3 x 18**.

   a. How many beans does she have altogether in her 3 groups of 20?

   b. Aronui takes 2 beans out of each group.

   How can she use the beans she has taken out of the canisters to work out 3 x 18?

   Don't forget that each full canister has 10 beans in it.

4. Aronui makes 3 groups of 30 to help her solve **3 x 29**.

   a. How many beans does she have altogether in her 3 groups of 30?

   b. Draw a picture of what Aronui's beans and canisters would look like after she takes out some beans to leave 3 groups of 29 inside the canisters.

   c. How could Aronui use the beans she has taken out of the canisters to work out 3 x 29?

5. Aronui decides that she doesn't need to use beans and canisters any more.

   I know that 5 x 100 = 500, so I can use my strategy to solve **5 x 98**.

   What would she do to solve 5 x 98?

6. Write a problem that could be solved easily using Aronui's strategy and solve it. Swap your problem with a classmate's.