

# 1.OA Cave Game Subtraction

## Task

### Materials

- A cup for each student to represent his/her cave
- Counters
- Recording sheet

### Actions

The teacher begins by counting out a certain number of counters to find the total number of counters in the whole collection. For example,

*One, two, three, four, five, six, seven, eight nine, ten. There are ten counters all together.*

This number should be small enough that the students have already found sums equal to that number, for example, 10. The teacher then hides some in the cup, calling it a cave. The students are shown how many counters are remaining outside of the cup, but not how many are in the cup. The number outside of the cup is called the part that they know.

Next, the teacher shows the students an equation like this

$$10 - \underline{\quad} = 6$$

if the teacher is hiding 4 counters. The students need to find the missing number. By adding, or counting on to 6, the students determine that the teacher is hiding 4 counters. The equation is completed, and checked for accuracy by seeing how many counters are hidden under the cup.

The students are then asked to help the teacher find another way to play the game with the same total number and a different part that they know. The goal is to find all the subtraction equations for the total they started with. When the teacher determines that the students understand the procedures of the game, they may play independently or in partners.

## IM Commentary

The purpose of this task is for students to practice creating and memorizing subtraction equations, while focusing on missing addends.

Once the students understand how to play the game, they can be given total numbers to work with that are applicable to their level of understanding. This is an excellent game to play with small groups of students, with whole numbers ranging from 5 up to 20. It can also be played several times throughout the school year, whole class, in groups, or in partners, using larger numbers as the class as a whole becomes more advanced.

There are various ways to provide extra support for students who might require it beyond simply using a smaller number. This might become necessary as many solutions are found, and only one or two remain. For example, a student might find  $5-0=5$ ,  $5-1=4$ ,  $5-2=3$ ,  $5-4=1$ ,  $5-5=0$ , but still be missing  $5-3=2$ . Another student or the teacher could hide the 3 counters for the student.

## Solution

$$4 - 0 = 4$$

$$4 - 1 = 3$$

$$4 - 2 = 2$$

$$4 - 3 = 1$$

$$4 - 4 = 0$$



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