# Lesson Seed: I.OA.A.1-2 Combinations to 20

(Lesson seeds are ideas for the domain/cluster/standard that can be used to build a lesson.
Lesson Seeds are not meant to be all-inclusive, nor are they substitutes for instruction.)

**Domain:** Operations and Algebraic Thinking

**Cluster:**  Represent and solve problems using addition and subtraction.

**Standard: 1.OA.A.1** Use addition and subtraction within 20 to solve word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions, e.g., by using objects, drawings, and equations with a symbol for the unknown number to represent the problem.
**Standard: 1.OA.A.2** Solve word problems that call for addition of three whole numbers whose sum is less than or equal to 20, e.g., by using objects, drawings, and equations with a symbol for the unknown to represent the problem.

**Purpose/Big Idea:**
- Students are able to make combinations up to 20.
- Students solve word problems that call for addition of three whole numbers whose sum is less than or equal to 20, e.g., by using objects, drawings, and equations with a symbol for the unknown number to represent the problem.
- Students are able to find more than one solution for an open-ended problem.

**Materials:**
- Resource Sheet 1: Double Ten Frame
- Resource Sheet 2: How Many Boys and How Many Girls?
- Resource Sheet 3: Three Different Colored Counters
- Resource Sheet 4: How Many Cats, Dogs, and Rabbits

**Activity 1:**
- Distribute Resource Sheet 1, 1 sets of two-colored Counters (20 of each color), and Resource Sheet 2.
- Share the following problem with your students and ask them to record all their combinations on Resource Sheet 2 as number sentences.

The teacher has some boys and some girls in her class.  She has a total of 20 students.  How many boys and girls could she have in her class?

Show as many combinations of boys and girls as you can find.

For an easier version, see http://www.k-5mathteachingresources.com/1st-grade-number-activities.html
Making Apple Ten Packs activity for working within 10.

**Activity 2:**

- Distribute Resource Sheet 1, sets of three-colored counters (20 of each), and Resource Sheet 4.
- Share the following problem with your students and ask them to record all their combinations using three different addends on Resource Sheet 2. Remind them to write their answers as number sentences.

Sammy and Rosa went to the Pet Store. They looked at the cats, the dogs, and the rabbits. There were twenty animals at the Pet Store. How many of each could there be?

Show as many combinations of cats, dogs, and rabbits as you can find.

**Guiding Questions:**

As the teacher circulates around the room, some questions that can be posed to the groups as they work might be:

- Can you think of another way?
- What can you do if you get stuck?
- How do I know where to begin to solve this problem?
- How do I know if my results are reasonable?

Encourage the students to build their solutions on the Double Ten Frame. This is a form of Modeling as described in the Standards for Mathematical Practice. Then ask them to record each solution they find on the Resource Sheet as a number sentence or equation.
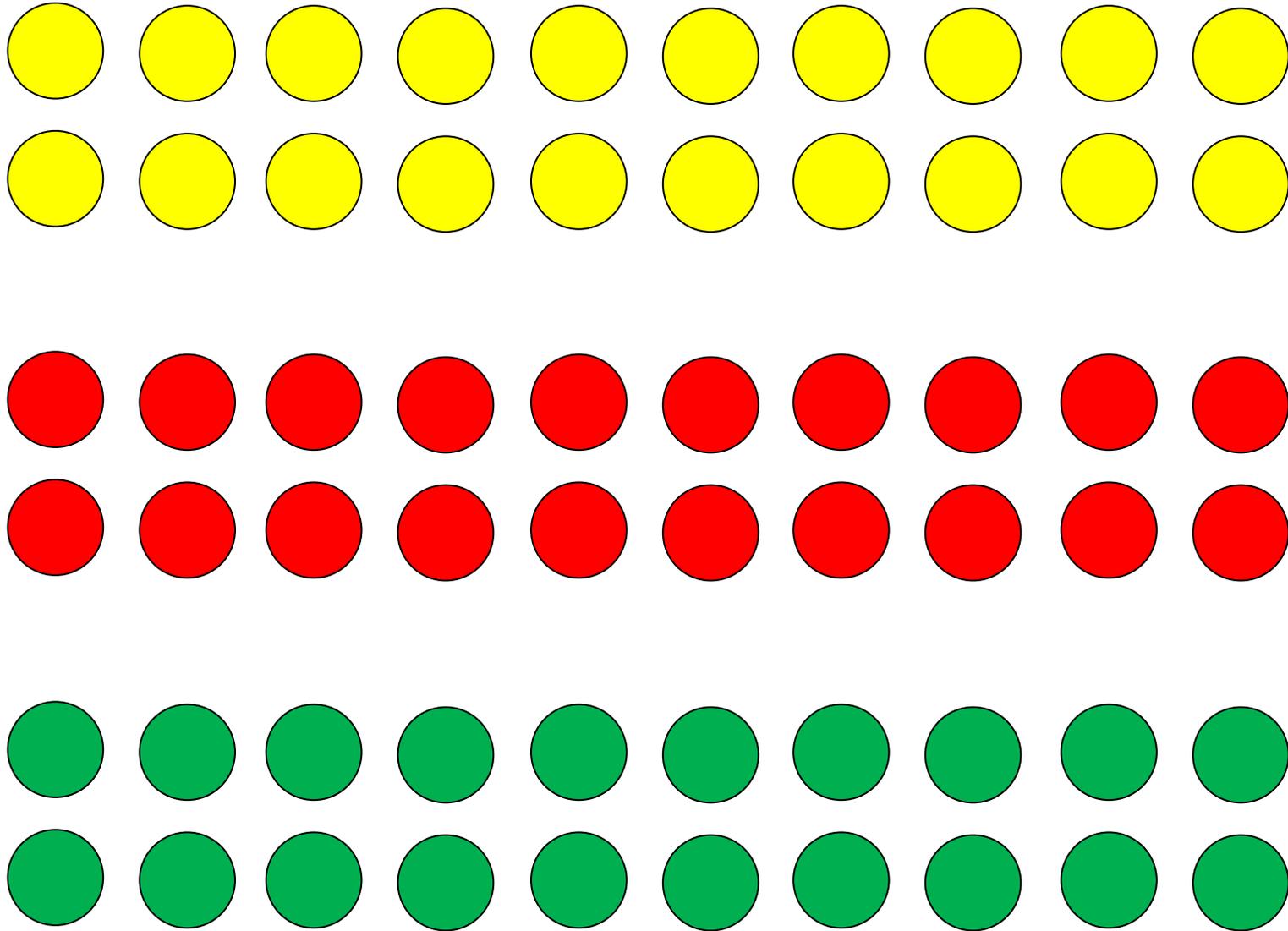
# Double Ten Frame

# How Many Boys and How Many Girls

The teacher has some boys and some girls in her class.  She has a total of 20 students.  How many boys and girls could she have in her class?

Show as many combinations of boys and girls as you can find.

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# Three Different Colored Counters

# How Many Cats, Dogs, and Rabbits

Sammy and Rosa went to the Pet Store. He looked at the cats, the dogs, and the rabbits. There were twenty animals at the Pet Store. How many of each could there be?

Show as many combinations of cats, dogs, and rabbits as you can find.

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