

# Rigor

Task Handout, Kindergarten

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“A social justice priority in mathematics education is to openly challenge deficit thinking and the institutional tools and practices that perpetuate static views about children and their mathematics competencies. Eliminating the deficit discourse by focusing on learning rather than labels is a key step toward a more just and equitable mathematics education.” —*National Council of Supervisors of Mathematics and TODOS: Mathematics for All*

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# Conceptual Understanding Task #1

## Task

This activity can be done as an entire class or in small groups.

## Materials

Paper bags and marbles (or some other counter, as long as it is relatively noisy).

## Actions

(Whole-class version) The teacher secretly places between 1 and 10 marbles in a paper bag, then shows the bag to the class. After shaking it enough times for students to hear the marbles inside, and four or five students guess how many marbles are in the bag. The teacher writes the guesses on the board. Afterwards the contents of the bag are revealed and counted out. The teacher writes the number representing the total on the board, and the students then help sort their guesses into less than, greater than, or equal to the number of marbles in the bag. The game repeats until everyone has had a chance to guess at least once.

(Small group version) This works like the class version but one student in a group fill the bag with marbles themselves and the rest of the group tries to guess the number. With this variation it is practical to allow the students to both hear and feel the marbles inside the bag before they make their guess.

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# Conceptual Understanding Task #2

## Task

Adding two numbers to make an equation.

## Materials

- One pair of dice per student
- A recording sheet for the activity. For example:

Dice Addition		
___	+	___ = ___
___	+	___ = ___
___	+	___ = ___

## Action

The students roll the dice. They record the numbers on the dice, one as the first addend and the other as the second addend in the equation, with numerals or dot pattern from the dice. They count all the dots and record the total in the equation.

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# Procedural Skills and Fluency Task #1

## Task

Have students stand and form a circle facing in toward each other.

Select a counting sequence to be practiced with no more than 8–10 numbers in the sequence.

Have the students start counting around the circle one by one until the last number in the sequence is reached.

When the last number is reached all students clap and that student is out and sits down on the floor in the middle of the circle.

Start the counting sequence over again until another student reaches the number at the end of the sequence; everyone claps and that student sits in the center with the first student.

Continue repeating the sequence until only one child is left standing and the rest are seated in the center of the circle. For example: for the counting sequence 1–10: the first student says "one," the next student says "two," and so on until the 10th student gets to "ten" at this point everyone claps and the tenth child sits in the center of the circle. The eleventh student starts over with "one" and so on.

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# Procedural Skills and Fluency Task #2

## Task

Have students form a circle and sit facing in toward each other. The teacher selects a range of the number sequence to practice. Start with the teacher walking around the outside of the circle while counting aloud starting at the beginning of the selected counting sequence.

After a few moments the teacher taps a student on the head and sits in the student's spot. The student then gets up from the circle and continues the counting at the point that the teacher left off while walking around the outside of the circle.

At the teacher's signal the student who is counting selects the nearest student to them by tapping them on the head to take over counting and sits in that student's spot. The next child then continues the counting sequence until the teacher indicates a change and so on until each child has had a turn. If the class reaches the end of the counting sequence before each child has participated simply start the sequence over again.

This is similar to Duck, Duck, Goose but without the chasing to get to a spot.

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# Application Task #1

## Task

## Materials

- *Ten Flashing Fireflies* by Philemon Sturges
- 10 frame and 10 counters per student

## Activity

Begin with 10 counters off the 10 frame mat with the yellow side facing up to represent the fireflies in the sky. As you read the story, the students should move a yellow counter to the ten frame to represent the firefly in the jar. Stop several times during the story to allow the students time to talk with their partner about how many fireflies are in their jar and how many are in the sky. Ex. There are 3 fireflies in my jar and 7 fireflies are in the sky. That equals 10 fireflies all together. At the end of the story, let the students put the counters away to represent the fireflies flying away. As a group, have the students come together to write a class list of all the combinations for 10 that were made.

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# Application Task #2

## Task

Show the student 6 counters (small, flat objects). Ask the student to close his/her eyes. Hide some of the counters under a sheet of heavy paper. When the student opens his/her eyes, s/he determines how many were hidden based on the number of counters still showing.

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