

Addition and Subtraction Fluency Set of Tasks

Sample task from achievethecore.org

Task by YouCubed, annotation by Student Achievement Partners

GRADE LEVEL First

IN THE STANDARDS 1.OA.C.6

WHAT WE LIKE ABOUT THISTASK

Mathematically:

- Uses the relationship between addition and subtraction to help students develop fluency with addition facts.
- Builds on students' understanding of decomposing numbers in different ways.
- Includes the use of tools (e.g., concrete models) to reinforce the conceptual understanding that anchors fluency (MP5).
- Part of a carefully considered progression toward fluency and memory with single-digit sums.




In the classroom:

- Allows teachers to choose targeted sums to tailor practice based on student need.
- Builds fluency in an engaging way.
- Offers multiple opportunities for students to practice their facts to ensure fluency.

This task was designed to include specific features that support access for all students and align to best practice for English Language Learner (ELL) instruction. Go [here](#) to learn more about the research behind these supports. This lesson aligns to ELL best practice in the following ways:

- Provides opportunities for students to practice and refine their use of mathematical language.
- Allows for whole class, small group, and paired discussion for the purpose of practicing with mathematical concepts and language.
- Includes a mathematical routine that reflects best practices to supporting ELLs in accessing mathematical concepts.
- Provides opportunities to support students in connecting mathematical language with mathematical representations.

MAKING THE SHIFTS

	Focus	Belongs to the Major Work ² of first grade
	Coherence	Develops fluencies that students will rely on in subsequent grades as they progress to full fluency with multi-digit addition and subtraction using the standard algorithm
	Rigor ³	Conceptual Understanding: secondary in this set of tasks Procedural Skill and Fluency: primary in this set of tasks Application: not targeted in this set of tasks

¹For more information read [Shifts for Mathematics](#).

²For more information, see [Focus in Grade One](#).

³Tasks will often target only one aspect of rigor.

INSTRUCTIONAL ROUTINE

The steps in this routine are adapted from the [*Principles for the Design of Mathematics Curricula: Promoting Language and Content Development*](#).

Engage students in the [Discussion Supports Mathematical Language Routine](#) for both tasks in this set using multi-modal strategies to help students make sense of decomposing numbers in different ways. Use whole class discussion supports as a way to guide their discussions. This will further develop their fluency strategies by requiring that they make the connections to the full number combinations instead of simply responding with the numerical answer. As students participate, encourage them to use the following sentence frame examples:

"I started with ___ cubes. How many are hiding? How do you know?"

"My train started with ___ cubes. How many am I hiding?"

"You are hiding ____. I know that because ___ plus ___ equals ____."

"I saw ___ and I counted up to ____."

"___ plus ___ equals ____."

LANGUAGE DEVELOPMENT

Ensure students have ample opportunities in instruction to read, write, speak, listen, and understand the mathematical concepts that are represented by the following terms and concepts:

- Plus
- Equals
- Counted

Students should engage with these terms and concepts in the context of mathematical learning, not as a separate vocabulary study. Students should have access to multi-modal representations of these terms and concepts, including: pictures, diagrams, written explanations, gestures, and sharing of non-examples. These representations will encourage precise language, while prioritizing students' articulation of concepts. These terms and concepts should be reinforced in teacher instruction, classroom discussion, and student work.

ELLs may need support with the following vocabulary words during the classroom discussion:

- Train
- Hide
- Snap
- Leftovers
- Cubes

ADDITIONAL THOUGHTS

Reaching fluency in addition and subtraction takes time and practice. Students will need many opportunities and varying activities to develop this fluency and practice should be incorporated into math instruction on a regular basis. Traditional approaches to teaching fluency tend to rely on worksheets that ask students to recall facts: these tasks illustrate a different type of practice that will also help students develop fluency. These two tasks are part of a larger set of tasks for grades K–High School from YouCubed, and the full task bank can be found [here](#).

These tasks may be modified as students are first developing fluency for addition and subtraction within 5 (K.OA.A.5), and as students continue to work toward fluency with sums and differences within 20 (2.OA.A.2). Teachers may further differentiate these tasks for their students by targeting specific sums and differences with which they see their students struggle. For more on how students can gain fluency in addition and subtraction in grade 1, read pages 14–17 of the progression document, *K Counting and Cardinality; K–5 Operations and Algebraic Thinking* available at <http://www.achievethecore.org/progressions>.

Topic(s): Addition,
Subtraction

Concept(s): Number Sense

Mathematical Practice(s):
MP5, MP6

Grade(s): K 1st 2nd

How Many Are Hiding

In this class activity, students find the missing number to complete a number sentence while also seeing different representations made by other students.

Material:

- 10 or more snap cubes /objects per player
 - a cup for each player
-

Task Instruction

- In this activity each child has the same number of cubes and a cup.
- They take turns hiding some of their cubes in the cup and showing the leftovers.
- Other children work out the answer to the question “How many are hiding,” and say the full number combination.

Example: I have 10 cubes and I decide to hide 4 in my cup. My group can see that I only have 6 cubes. Students should be able to say that I’m hiding 4 cubes and that 6 and 4 make 10.

Topic(s): Addition

Concept(s): Number Sense

Mathematical Practice(s):

MP5, MP6

Grade(s): K 1st 2nd

Snap It

Students work together to make different number combinations for a given number.

Material:

- 10 or more snap cubes per student
-

Task Instruction

- This is an activity that children can work on in groups.
 - Each child makes a train of connecting cubes of a specified number.
 - On the signal “Snap,” children break their trains into two parts and hold one hand behind their back.
 - Children take turns going around the circle showing their remaining cubes.
 - The other children work out the full number combination.
-