Building Tens at the Lego Factory

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WHAT WE LIKE ABOUT THIS LESSON

Mathematically:
- Connects numerical representations with combination and composition of base-ten units
- Encourages students to organize quantities into groups of tens and ones to represent two-digit numbers
- Provides opportunities for students to practice choosing an efficient strategy for representing a two-digit number as an amount of tens and ones
- Asks students to generalize place value understandings to prepare for future work with two-digit numbers
- Encourages student to use appropriate tools strategically (MP.5) (see Additional Thoughts below)

In the classroom:
- Uses concrete and pictorial models to make the mathematics explicit
- Prompts students to share their developing thinking and understanding
- Allows for whole class, partner, and individual work in one lesson
- Provides opportunities and suggestions for meaningful differentiation
- Gives formal and informal opportunities for teachers to check for understanding

MAKING THE SHIFTS[1]

	Focus	Belongs to the major work[2] of first grade
	Coherence	Builds on key understandings of place value (K.NBT.A); Lays foundation for using place value understanding to add and subtract in grades 1 and 2 (1.NBT.B, 2.NBT.B) and to count to 1,000 in grade 2 (2.NBT.A.2)
	Rigor[3]	Conceptual Understanding: primary in this lesson
		Procedural Skill and Fluency: primary in this lesson
		Application: secondary in this lesson

[1]For more information read Shifts for Mathematics.
[2]For more information, see Focus in Grade One.
[3]Lessons may target one or more aspect(s) of rigor.

The "Building Tens at the Lego Factory" lesson focuses on developing place value understanding with two-digit numbers so that students will later be able to use their understanding of place value to solve addition and subtraction problems. This lesson is part of a 13-lesson unit that focuses on counting to, and building an understanding of, numbers up to 100; students will not meet the full expectations of the grade-level standards through this lesson alone. It is worth nothing that 1.NBT.A sets an expectation for first graders to be able to count to 120, so more work on counting should occur in later units. This lesson is not intended as an introduction to using tens and ones to represent two-digit numbers, as observed in the "setting up the learning" section.

There are many opportunities for students to meet the full intent of MP.5, use appropriate tools strategically, within this lesson. During the work time, students will be able to choose different tools (cubes, place value blocks, ten frames, and drawings) to help them with their work. There are guiding questions provided which allow the teacher to push student thinking beyond the specific tool chosen. The questions connect the various tools to each other and, more generally, to the structure of numbers (MP.8).

For more insight on the grade-level concepts addressed in this lesson, read page 6 of the progression document K–5, Number and Operations in Base Ten.