Tens and Ones Builders

Teacher		**Class**	Grade 1
Subject	Math	**Topic**	Tens and ones
Date		**Room**	
Lesson length	60 minutes	**Country**	United States

Students learn that two digits show tens and ones. They build numbers with strips and squares and say the tens and ones.

Curriculum links

- Understand that the two digits of a two-digit number represent amounts of tens and ones [2]
- 10 can be thought of as a bundle of ten ones — called a “ten” [2]
- The numbers from 11 to 19 are composed of a ten and one, two, three, four, five, six, seven, eight, or nine ones [2]
- The numbers 10, 20, 30, 40, 50, 60, 70, 80, 90 refer to one, two, three, four, five, six, seven, eight, or nine tens (and 0 ones) [2]

Learning objectives

- Students will show that 10 loose ones make 1 ten.
- Students will build two-digit numbers as tens and leftover ones.
- Students will read the tens digit as tens and ones digit as ones.

Success criteria

- I can trade 10 ones for 1 ten.
- I can show a number with tens and ones.
- I can tell what each digit stands for.

What students already know

Show 12 loose cubes. Ask: How can we count these fast without counting one by one? Listen for making a group of ten and counting leftovers.

Key words

tens	groups that each hold as many as fingers on two hands [2]
ones	single loose things counted on their own [8]
bundle	sticks tied with a band to make one group [5]
digit	one written 0 to 9 mark used to write numbers
place value	what a mark is worth because of where it sits in a number [13]

Materials

- pre-cut paper strips of 10
- small paper squares for ones
- glue sticks
- Tens and Ones chart with Tens and Ones columns
- number cards 11 to 99

Before the lesson

- Print Tens and Ones chart for each student and number cards 11 to 99
- Print Worksheet Task A for each student and pre-cut paper strips of 10 and small paper squares

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- craft sticks and rubber bands for teacher demo
- base-ten ten-rods and ones cubes for demo
- mini-whiteboards and markers
- Slides 2, 3-4, 5-7, 9, 10-11
- Video clip 1 (0:00–4:27)
- Worksheet Task A copies

- Test Slides 2, 3-4, 5-7, 9, 10-11 and Video clip 1 (0:00–4:27) with sound
- Set out craft sticks, rubber bands, ten-rods, ones cubes, glue sticks and mini-whiteboards

Lesson outline

0–5 min **Starter** 5 min · Whole class

Activate fast-counting ideas and hook builders to tens and ones.

YOU DO

1. Show Slide 2 with lots of cubes and read the vote choices aloud.
2. Ask students to vote: count one by one, make groups of ten, or just guess.
3. Count a small pile one by one slowly, then say the builder hook.
4. Point to long paper strips and tiny squares on the table.

STUDENTS DO

1. Vote with fingers and explain their choice to a partner.
2. Look at the strips and squares and say what looks fast to count.

Say: We are going to build numbers like builders — long strips and tiny squares! Builders do not count every speck one by one. They use long tens and tiny ones to count fast.

Ask: Why is counting one by one slow and messy? (It takes a long time and we lose track.) · How could groups of ten help us count fast? (We can count ten, twenty, then add leftovers.)

Check understanding: Hands up for groups of ten. If most still choose one by one, quickly group 10 cubes and show 10 is faster to see.

Support: Let a student touch and move 10 cubes into a line while the class counts to 10 together. **Stretch:** Ask what we could do if we had 29 cubes to count fast.

Use: Slides 2

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5–15 min **Teaching** 10 min · Whole class

Model that 10 loose ones can be traded for 1 ten.

YOU DO

1. Show Slide 3 and count 10 loose craft sticks into the Ones column.
2. Wrap the 10 sticks with a rubber band and move the bundle to the Tens column.
3. Show Slide 4 and read: 10 ones make 1 ten.
4. Model 13 as 1 bundle plus 3 loose and write 13 under the chart.

STUDENTS DO

1. Count aloud to 10 with the teacher and clap when the bundle is made.
2. Point to Tens and Ones columns and repeat: 1 ten and 3 ones makes 13.

Say: Ten loose ones can be traded for one group of ten. Watch me count ten loose sticks and tie them. Now this bundle is one ten, and it is much faster to count.

Worked example: Count 13 sticks: count 1, 2, 3...10, tie to make 1 ten [2]. Leave 3 loose. Point to chart: 1 ten and 3 ones makes 13. Use small sticks that can be grouped and bundled to make tens [5].

Ask: What did 10 loose ones become? (One ten, a bundle of ten ones.) · In 13, where is the ten and where are the ones? (1 bundle in Tens, 3 loose in Ones.)

Check understanding: Hold up 10 fingers when asked how many ones make a ten. Re-count and re-wrap if any say 9 or 11.

Support: Count slowly touching each stick and stop at 10 together before wrapping. **Stretch:** Ask what 2 full bundles would be and let them count 10, 20.

Use: Slides 3–4

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15–27 min **Guided teens** 12 min · Whole class

Learn that teen numbers are one ten plus leftover ones.

YOU DO

1. Show Slide 5 and ask: How many tens in 14? Take pair ideas.
2. Play Video clip 1 on Slide 6 and pause to find the one ten.
3. Build 14 with a filled ten-frame and 4 extra counters.
4. Teach Slide 7 words by pointing to the ten-frame, loose cubes and bundle.

STUDENTS DO

1. Turn and tell a partner how many tens they see in 14.
2. Watch, count the ten and the leftovers aloud, and repeat the words tens, ones and bundle.

Say: Teen numbers have one full ten and some extra ones. Fourteen is one ten and four ones. The left number tells tens and the right number tells ones.

Worked example: Show 14 as one ten and four ones [8]. Fill one ten-frame with 10 counters, put 4 loose beside it. Say: 1 ten and 4 ones is 14, since the numbers from 11 to 19 are composed of a ten and some ones [2].

Ask: How many tens and ones are in 14? (1 ten and 4 ones.) · How is 15 like 14? (Both have 1 ten, 15 has 5 loose ones.) · What does bundle mean? (Ten tied together to make one group.)

Check understanding: Mini-whiteboards: write tens and ones for 15. If many write 5 tens, rebuild 15 with ten-frame and extras.

Support: Keep to 11 to 14 and count the full ten out loud one by one before saying ten. **Stretch:** Order cards 11 to 19 and explain how the ones part grows.

Use: Slides 5–7, Video clip 1 (0:00–4:27)

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27–50 min **Main activity** 23 min · Pairs

Build two-digit numbers with paper tens and ones and name the parts.

YOU DO

1. Show Slide 9 and model 36 with 3 paper tens strips and 6 ones squares on the chart.
2. Read the numeral aloud as 3 tens and 6 ones makes 36 and write 36 beside it.
3. Hand out number cards 11 to 99, strips, squares, charts and Worksheet Task A.
4. Circulate, ask pairs to read their build and check the written tens and ones.

STUDENTS DO

1. Pick a number card, lay out tens strips and ones squares on the Tens and Ones chart.
2. Say _ tens and _ ones makes _ and complete Worksheet Task A by writing tens and ones parts.
3. Swap builds with another pair, count strips and squares, and check the numeral.

Say: Pick a card, lay long strips in Tens and tiny squares in Ones. Then say your tens and ones and write the number. Your strips, squares and written number all show the same amount.

Worked example: Build 36: lay 3 tens strips and 6 ones squares. The blocks on the place value chart and the numeral written on the sheet represent the same amount [4]. Say: 3 tens is 30 and 6 ones is 6, so 30 + 6 = 36 [13]. Left digit 3 counts tens, right digit 6 counts ones.

Ask: In 36, what does the 3 stand for? (3 tens, which is 30.) · How do you know you have 42 and not 24? (42 has 4 tens strips and 2 squares, 24 has 2 strips and 4 squares.)

Check understanding: Pairs hold up builds and read tens and ones. If strips are in Ones column, remodel placement on the large chart.

Support: Start with 11 to 19 and give a model that shows 1 strip plus the exact ones, since showing 14 as one ten and four ones helps make the teen numbers clear [8]. **Stretch:** Have students build two numbers that use the same digits, like 34 and 43, and tell how the strips are different.

Use: Slides 9, Worksheet Task A

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50–60 min **Plenary** 10 min · Whole class

Generalize that left digit counts tens and right digit counts ones.

YOU DO

1. Show Slide 10 and point: left digit counts tens, right counts ones.
2. Build 27 and 72 with cubes to show the tens digit counts groups of ten [13].
3. Show Slide 11 true or false and vote on each line.
4. Link back to builders: strips are tens, squares are ones.

STUDENTS DO

1. Point to digits on large cards and say 2 tens is 20 or 2 ones is 2.
2. Vote true or false with thumbs and explain using tens and ones.

Say: In a two-digit number the left mark counts tens and the right mark counts ones. Forty-seven means 4 tens plus 7 ones [13]. If we switch marks, the worth changes.

Worked example: 17 is 1 ten and 7 ones — true. 20 is 2 tens and 0 ones — true, since 20 is 2 tens [2]. 34 is 3 ones and 4 tens — false. It is 3 tens and 4 ones.

Ask: Is the 2 in 27 the same as the 2 in 72? (No, 2 tens is 20 but 2 ones is 2.) · How many tens and ones are in 20? (2 tens and 0 ones.)

Check understanding: All vote on 34 is 3 ones and 4 tens. If many say true, rebuild 34 with 3 strips and 4 squares and recount.

Support: Use color-coded digit cards with tens in one color and ones in another and match cubes to each color. **Stretch:** Ask what happens to the worth if digits in 34 switch places to make 43.

Use: Slides 10–11

Common mistakes

Mistake	How to spot it	How to fix it
Reversing teen numbers, writing 71 for 17	Build shows 1 ten and 7 ones but numeral is written 71	Say one ten and seven ones while placing 1 ten-strip then 7 squares and write left tens then right ones [14].
Swapping tens and ones, saying 34 is 3 ones and 4 tens	Student points to 3 as ones and 4 as tens on Slide 11 vote	Count strips as 10, 20, 30 to show 3 tens is 30, and 4 squares is 4 [13].
Counting a ten-strip as 1 instead of 10	Student counts 3 strips and 4 ones as 7 total	Open one strip and count the 10 small parts inside once slowly, then recount by tens [14].

Support

- Start with 11 to 19 and give a model that shows 1 strip plus the exact ones
- Build and count by tens together slowly, touching each tower or strip while counting 10, 20, 30
- Let students collect ones on a ten-frame first so they can see when it is full and ready to trade

Stretch

- Have students build two numbers that use the same digits, like 34 and 43, and tell how the strips are different
- Add 1 to 5 loose cubes to a tower set and ask students to name the new number
- Compare numbers with the same tens, like 45 and 48, and ask why the ones now matter

For the LSE or teaching assistant

Stay with the main build table. Help pairs place strips in Tens and squares in Ones, rehearse the sentence _ tens and _ ones makes _, and pre-check Worksheet Task A for reversed digits.

Check for understanding

Question	Answer
Show 17. How many tens and ones?	1 ten and 7 ones
In 42, what does the 4 stand for?	4 tens, which is 40
Build 30. How many tens and ones?	3 tens and 0 ones

Homework

Finish Worksheet Task E: match each number to its tens and ones.

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