

MATH UNIT

Ten ones make a ten, and what the places say

Grade 1

6 lessons

6 × 30 minutes

5 source books

180 minutes in all

THE QUESTION THIS UNIT FOLLOWS

Why does the same 2 mean two in one column and twenty in the other?

ABOUT THIS UNIT

This unit builds the two-digit number from the bundle up. Children stand nine sticks in a ones column, add one more, band all ten and carry the bundle across — and then have to put something in the column they emptied, which is where zero earns its place. From there the numbers get read, ordered, walked and compared, so that a numeral on a card and a position on a line become two views of the same thing.

The hardest move is in lesson 2, and it is deliberately unsettling: the zero card is slid off the mat while not one stick moves, and children read what the cards now claim against what is still lying on the desk. The gap between the two is the idea. After that the unit spends three lessons making two-digit numbers behave like places — a street of eleven consecutive houses, a count on across a decade where a whole row is worth ten squares, and two temperatures far apart on one line — so that a child who can build twenty can also say which of two numbers is bigger and how much of the line lies between them.

THE MATHEMATICAL ARC

Each lesson does one job the lesson before it made possible.

- 1 Nine, one more, band, carry — and something has to hold the empty column
- 2 Slide the zero off and read what the cards now claim
- 3 Read the numeral as one number word, and put the set in order

- 4 Eleven consecutive numbers in order, and a position read back off the row
- 5 Count on a row at a time, and know the row is worth ten
- 6 Two numbers far apart on one line, and the gap walked

SOURCE BOOKS

Every lesson in this unit is already published under Math lessons. Nothing here asks you to teach anything you cannot open today.



A Place for Zero

2 lessons in this unit



Underwater Counting Even Numbers

1 lesson in this unit



On My Way to Grandma's House

1 lesson in this unit



The Yum-Yum House

1 lesson in this unit



Let's Go, Snow!

1 lesson in this unit

HOW TO USE THIS GUIDE

Open the source lesson before you teach.

Each day names one lesson that already exists under Math lessons, with its book, its number and its title. This guide says what that lesson is doing in the sequence and what to collect from it; the lesson itself carries the steps, the printables and the answers.

Thirty minutes a day.

Five minutes to connect to yesterday, the twenty-minute source lesson, five minutes to close on something you can see. A day that runs long should lose the close, never the core.

Teach a lesson on its own if you need to.

Every day carries a one-sentence opening for a teacher who is using that lesson outside the sequence.

Stop after a checkpoint.

The unit holds together if you stop after either checkpoint and come back to it. Stopping between a checkpoint and the next one leaves a lesson without the evidence it was built on.

WHERE THIS FITS IN YOUR YEAR

When to teach it

After the class can count and skip count to one hundred, and before any two-digit addition. The bundle has to be a thing before regrouping can be a move.

What students need first

Children can count to one hundred, can count ten objects reliably, and know the digits nought to nine by sight.

What this unit develops

Bundling ten ones into one ten; zero holding an emptied column; reading and ordering two-digit numerals; placing consecutive two-digit numbers on a line and reading a position back off it; counting on across a decade; comparing two two-digit numbers on one scale.

What it prepares them for

Two-digit addition and subtraction with regrouping, where the bundle is taken apart and rebuilt, and Grade 2 place value to the hundreds.

CURRICULUM CONNECTIONS

None claimed. The lessons in this unit carry their own standards classifications on their own pages, checked lesson by lesson. A unit-level expectation is a different claim, and none has been verified for this unit, so none is printed here. Use the placement guide above to site the unit in your year, and the individual lesson pages for the codes.

UNIT AT A GLANCE

#	MATHEMATICAL MOVE	SOURCE LESSON	COLLECT
1	Nine, one more, band, carry — and something has to hold the empty column	A Place for Zero lesson 1, Nine Ones, One More, and a Zero to Hold the Place	A mat holding one banded bundle and two cards, the 1 and the zero, read left to right.
2	Slide the zero off and read what the cards now claim <i>Checkpoint after this lesson</i>	A Place for Zero lesson 3, Where the Zero Stands	Four built and read numbers, and a written pair of numbers for twenty: what is on the desk, and what the cards claim once the zero is gone.
3	Read the numeral as one number word, and put the set in order	Underwater Counting Even Numbers lesson 3, Reading the Numbers the Book Prints	An ordered line of numerals to fifty, read aloud from the start.
4	Eleven consecutive numbers in order, and a position read back off the row <i>Checkpoint after this lesson</i>	On My Way to Grandma's House lesson 3, Build Cypress Road	An ordered street with markers on the first house, the middle and the end, and a counter on each of the five houses the story leaves somebody standing at.
5	Count on a row at a time, and know the row is worth ten	The Yum-Yum House lesson 4, Counting On To Eighty-Three	Three counts on to the same target — from 75, from 33 and from 14 — each checked against the book's own sentence.
6	Two numbers far apart on one line, and the gap walked	Let's Go, Snow! lesson 3, Seventy and Thirty-Two on the Same Strip	Both numbers placed on the line and a walked gap, with the number of whole tens said aloud.

UNIT VOCABULARY

Words students say, not words they are taught to define.

bundle Lesson 1's word for ten ones banded together. A child who says ten sticks has not yet got the bundle.

place The column a digit sits in. Named in lesson 1 and used in every lesson after it.

- zero** Not nothing, but what holds an emptied column so the digit beside it can be read.
- numeral** Lesson 3's word: the written form, said aloud as one number word and not as two digits.
- count on** Lesson 5. Carrying a count forward from a number already reached, a row at a time where the gap is long.
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MATERIALS

From the source lessons

Each day's materials are listed on that day's page below and on the source lesson itself. Nothing is duplicated here.

New for this unit

- Checkpoint 1 page, one per child
 - Checkpoint 2 page, one per child
 - Performance task set: twenty-five craft sticks, three bands, a two-column place mat, digit cards nought to nine, a shuffled set of eleven cards numbered 60 to 70, and a hundred chart, one set per pair
 - Performance task page, one per child
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ASSESSMENT PLAN

Daily evidence

Keep the two numbers from lesson 2 — the one on the desk and the one the cards claim — written side by side. A child who reports them as the same number has not seen the gap the lesson is built on, and it is worth knowing that before lesson 5.

Checkpoint 1, after lesson 2: Build it from nine

Nine sticks, one spare, a band and a two-column mat. The child counts the nine, adds the tenth, bands the ten, carries the bundle across, and cards both columns, saying each move aloud.

Book-free. Sticks, a band and a mat, no book.

Look for. The zero card goes into the emptied column without being asked for. A child who leaves the ones column blank has the bundling but not the zero that holds the place.

Checkpoint 2, after lesson 4: Where does this one go?

A row of eleven cards numbered 60 to 70 with three cards removed and handed to the child. The child places all three without moving the others, then reads back the number two places to the left of one of them.

Book-free. Number cards, no book.

Look for. The child places by neighbours rather than by counting from the start of the row. Reading a position back off the row is the half that shows the line is being used and not just built.

Culminating task: Bundle it, build it, place it

Each pair does three things. They build a two-digit number from nine sticks plus one, banding and carrying and carding both columns, and say each move aloud. They then take a shuffled set of eleven cards numbered 60 to 70, lay the street in order with no gaps, and read back the number three places from one end. Finally they start at a number the teacher names and count on to 70 on a hundred chart, choosing rows for a long gap and single squares for a short one, and saying which they chose before they start.

Collect. The carded mat, the ordered row of eleven with one position read back, and the count on to 70 with the method named in advance.

What it assesses. Bundling and the zero that holds a place, reading and ordering two-digit numerals, and counting on across a decade — the three things the unit built, each done once without the book in front of them.

DAILY LESSON PAGES

Lesson 1

Nine, one more, band, carry — and something has to hold the empty column**SKILL LESSON**

A Place for Zero (/math-library/116.html) · lesson 1, Nine Ones, One More, and a Zero to Hold the Place · Grade 1 · 20 minutes

Bundling ten ones into one ten and putting a zero in the emptied ones place

I CAN

I can make a ten out of ten ones and put a zero where they used to be.

BIG IDEA

Ten ones will not fit in the ones column, so they move as one bundle to the next column. The column they leave cannot be left blank, and zero is what holds it.

SUCCESS

The child builds it a second time from nine with nobody naming the order, saying each move aloud as the hands make it.

CONNECT | 5 MIN

First lesson. Write 9 on the board and ask what comes next. Take the answer, then ask which single digit says it.

TAUGHT ON ITS OWN

The king says there is no digit for one plus nine, and Zero answers him by moving house — nine ones stand together, one more joins, the ten move over to the next place, and a zero takes the column they left.

SOURCE CORE | 20 MIN

Children count nine sticks into the ones column one at a time, add the tenth, slide all ten together and band them, carry the bundle across to the tens column, and leave the ones column empty without tidying it.

COLLECT

A mat holding one banded bundle and two cards, the 1 and the zero, read left to right.

CLOSE | 5 MIN

Children take the band off, spill the ten back, clear both cards and build it again from nine with nobody telling them the order, saying nine, one more, band, carry, zero as their hands make each move.

From the source lesson: Craft sticks, twenty-five per pair; Place mat, a sheet ruled into two columns headed tens and ones; Paper bands or elastic bands, three per pair; Digit cards nought to nine, one set per pair; Word cards: ones, tens, place, bundle

Watch for: A child who tidies the emptied ones column away. Leave it empty and visible; it is what the zero is about to answer.

Lesson 2**Slide the zero off and read what the cards now claim****SKILL LESSON****A Place for Zero** (/math-library/116.html) · lesson 3, Where the Zero Stands · Grade 1 ·

20 minutes

Building two-digit numbers with bundles of ten and a zero in the ones place

I CAN

I can build twenty, thirty, sixty and ninety, and say what the zero is holding.

BIG IDEA

The cards can say something the desk does not. Taking the zero away changes the number without moving a single stick, and that gap is what the place system is.

SUCCESS

The child says both numbers — the one on the desk and the one the cards claim — after the zero card is slid off.

CONNECT | 5 MIN

Yesterday one bundle needed one zero. Today every digit gets a turn beside it.

TAUGHT ON ITS OWN

Once ten exists, the book hands every digit a turn beside the zero and prints what they make: twenty, thirty, sixty, ninety.

SOURCE CORE | 20 MIN

Children build twenty, then thirty, then sixty, then ninety on the two-column mat, changing only the bundles and the tens card while the zero card never moves, and read each one aloud from the cards.

COLLECT

Four built and read numbers, and a written pair of numbers for twenty: what is on the desk, and what the cards claim once the zero is gone.

CLOSE | 5 MIN

Children clear the mat, lay a zero in both columns and read it, then put one bundle back and swap the tens card for a 1, and say what the 1 did that the zero could not.

From the source lesson: Pre-banded tens, nine per pair, banded before the lesson; Place mat, a sheet ruled into two columns headed tens and ones; Digit cards nought to nine, one set per pair; Loose craft sticks, ten per pair; Word cards: tens, ones, digit

Watch for: A child who moves a stick when the zero card comes off. Nothing on the desk may change; the point is that the number did.

Checkpoint after this lesson: Build it from nine. The page is at the end of this guide.

Lesson 3 **Read the numeral as one number word, and put the set in order**

SKILL LESSON **Underwater Counting Even Numbers** (</math-library/92.html>) · lesson 3, Reading the

Numbers the Book Prints · Grade 1 · 20 minutes

Reading two-digit numerals aloud and placing them in order to fifty

I CAN I can read a two-digit numeral aloud and put the numbers in order.

BIG IDEA A numeral and a spoken number word are two forms of one number.
Reading 24 as two four means the form has not been understood.

SUCCESS The child reads a numeral from the middle of the line aloud as one
number word and says which numeral the book puts just after it.

CONNECT | 5 MIN The last two lessons built numbers out of sticks. Today the numbers
arrive already written, and they have to be read.

TAUGHT ON ITS OWN This book states almost every count as a digit rather than a word, so
its numerals are what a child has to read to follow it at all.

SOURCE CORE | 20 MIN Children match each heard count to its numeral card and say it
aloud as a number word, then lay the whole set in the book's order,
lowest first, in one long line, checking any doubtful card against the
counting strip.

COLLECT An ordered line of numerals to fifty, read aloud from the start.

CLOSE | 5 MIN Children pull out the two cards at the front that break the two-at-a-
time pattern, say each aloud, and say what the book was doing on
those two pages.

From the source lesson: A set of numeral cards for every count the book prints; A counting strip
printed 0 to 50; Word cards: numeral, order, pattern

Watch for: A numeral read as two digits. Ask for it again as one number word, and let the counting
strip supply it if the word is slow.

Lesson 4

Eleven consecutive numbers in order, and a position read back off the row

SKILL LESSON On My Way to Grandma's House (/math-library/880.html) · lesson 3, Build Cypress

Road · Grade 1 · 20 minutes

Placing eleven consecutive two-digit numbers in order on a line and reading a position back off it

I CAN	I can build the street in order and say which house is where.
BIG IDEA	A line of numbers is a tool, not decoration. One card out of order puts somebody at the wrong house, and everything the story does afterwards is wrong with it.
SUCCESS	The child lays all eleven cards from shuffled with no gaps, and can say the number of a card a partner points at without counting from the start.
CONNECT 5 MIN	Ordering to fifty was a line on the table. Today the line is a street, and people are standing on it.
TAUGHT ON ITS OWN	Every house from 40 to 50 is printed somewhere in the story: 40 and 50 in the sentence that sets the rule, 45 in the middle of the block, and the rest in the two lists the friends walk past and skip past.
SOURCE CORE 20 MIN	Children shuffle the eleven house cards and lay them in order from 40 to 50 with no gaps, check the row against the book's two lists, fix anything out of place, and say the whole street aloud touching each card.
COLLECT	An ordered street with markers on the first house, the middle and the end, and a counter on each of the five houses the story leaves somebody standing at.
CLOSE 5 MIN	Partners take turns: one points at a card and says nothing, the other says the house number and whether the book puts anybody there, all the way along the street and back.

From the source lesson: A shuffled set of eleven house cards per pair, numbered 40 to 50, one number to a card; A long paper strip per pair with eleven marked spaces to lay the row on; Three house-shaped markers per pair, for the first house on the block, the house in the middle and the house at the end of the street; A card per pair carrying the four sentences that place Lily's house, her grandmother's house and the house in the middle of the block; Five counters per pair in one colour, for the houses the book leaves somebody standing at; A card per pair carrying the sentence about arriving at number 50; Word cards: order, between, middle

Watch for: A row with a gap in it. Close the gap before anything is read off the row, or the read-back will be wrong for a reason the child cannot see.

Checkpoint after this lesson: Where does this one go?. The page is at the end of this guide.

Lesson 5 **Count on a row at a time, and know the row is worth ten**

SKILL LESSON **The Yum-Yum House** (/math-library/412.html) · lesson 4, Counting On To Eighty-

Three · Grade 1 · 20 minutes

Counting on to a two-digit target across a decade

I CAN	I can count on to a number in another decade, a row at a time.
BIG IDEA	One row down a hundred chart is worth ten squares. Knowing that without counting them is what makes a long count on short.
SUCCESS	The child says which method they will use before starting, and counts on from a far start in rows rather than square by square.
CONNECT 5 MIN	Yesterday the numbers sat still on a street. Today the class moves between them, and some of the moves are long.
TAUGHT ON ITS OWN	Three of the book's five gaps cross from one decade into another, and one of them, 33 up to 83, is exactly five rows of a hundred chart.
SOURCE CORE 20 MIN	Children count on from 75 to 83 one square at a time, saying the number where the finger drops to the next row, then count on from 33 to 83 a whole row at a time, saying 43, 53, 63, 73, 83 and how many squares one row is worth.
COLLECT	Three counts on to the same target — from 75, from 33 and from 14 — each checked against the book's own sentence.
CLOSE 5 MIN	Children rank the three starts from easiest to hardest, say what made the easy one easy, and say where the book's own small pair, 11 up to 17, belongs and why it needs no chart at all.

From the source lesson: Hundred charts, one per pair; Counters, 10 per pair; Word cards: count on, row

Watch for: Rows counted square by square. Ask how many squares a row holds, and then ask them to move down one without counting.

Lesson 6 **Two numbers far apart on one line, and the gap walked**

SKILL LESSON **Let's Go, Snow!** (</math-library/388.html>) · lesson 3, Seventy and Thirty-Two on the Same Strip · Grade 1 · 20 minutes

Comparing two stated two-digit temperatures on one scale and saying which is warmer

I CAN I can put two two-digit numbers on a line and say which is bigger.

BIG IDEA Two numbers side by side on cards mean very little. On one line they have a distance between them, and a child who has walked it can say how much.

SUCCESS The child says both comparison sentences pointing at the right tile each time, and can say how many whole tens the gap holds.

CONNECT | 5 MIN The chart made long moves quick. Today the two numbers are a long way apart on a line the class can walk.

TAUGHT ON ITS OWN The book prints exactly two temperatures and prints them a long way apart in the story: nearly 70 degrees on a March morning, and the freezing 32 the snow machine needs.

SOURCE CORE | 20 MIN Children walk the floor line to find where each card goes and lay it on its tile, then stand on one and point at the other, saying warmer or colder about the tile they are pointing at rather than about themselves.

COLLECT Both numbers placed on the line and a walked gap, with the number of whole tens said aloud.

CLOSE | 5 MIN Standing beside the line, children say seventy is warmer than thirty-two and then thirty-two is colder than seventy, pointing at the right tile each time, and say which of the two the plants have to worry about.

From the source lesson: A shared floor number line from 30 to 75, one tile per degree, tiles marked every ten; One card printed 70 and one card printed 32 per pair, no other numbers; Word cards: degrees, warmer, colder

Watch for: Warmer said about the child rather than the tile. Ask them to say it about the number they are pointing at.

CULMINATING PERFORMANCE TASK

Bundle it, build it, place it

Each pair does three things. They build a two-digit number from nine sticks plus one, banding and carrying and carding both columns, and say each move aloud. They then take a shuffled set of eleven cards numbered 60 to 70, lay the street in order with no gaps, and read back the number three places from one end. Finally they start at a number the teacher names and count on to 70 on a hundred chart, choosing rows for a long gap and single squares for a short one, and saying which they chose before they start.

Collect. The carded mat, the ordered row of eleven with one position read back, and the count on to 70 with the method named in advance.

What it assesses. Bundling and the zero that holds a place, reading and ordering two-digit numerals, and counting on across a decade — the three things the unit built, each done once without the book in front of them.

TEACHER KEY AND RUBRIC

Key

- Checkpoint 1: one ten and nought ones, read as ten. The moves are nine, one more, band, carry, zero, and they should be audible.
- Checkpoint 2: the three cards in their own places, and the read-back number two to the left of the one named. Prepare the row yourself so the three removed cards are not adjacent, or the child can place them by shape of the gap alone.
- Task: the count on to 70 depends on the start you name. Name one start in the same decade and one five rows away, and check both yourself, because a start that happens to line up hides the whole choice of method.

Rubric

STRAND	SECURE LOOKS LIKE	DEVELOPING	NOT YET
Representation	A ten is a banded bundle in the tens column, not ten sticks left loose, and an emptied column carries a zero.	Does it with the arrangement in front of them.	Produces an answer without the arrangement or the reason.
Calculation	Counting on is carried forward from the number reached, a row at a time where the gap is long, and the rows are not counted square by square.	Does it with the arrangement in front of them.	Produces an answer without the arrangement or the reason.
Meaning	The child can say what each digit is counting, and can say both numbers when the cards and the desk disagree.	Does it with the arrangement in front of them.	Produces an answer without the arrangement or the reason.
Explanation	The choice between rows and single squares is stated before the count starts, and the child can say what made the easy start easy.	Does it with the arrangement in front of them.	Produces an answer without the arrangement or the reason.

PRINT-READY STUDENT PAGES

CHECKPOINT 1 • GRADE 1

Build it from nine

Name

Date

Count the nine sticks into the ones column. Now add one more. What do you do next? Say each move out loud while you do it. Now card both columns and read the number.

CHECKPOINT 2 • GRADE 1

Where does this one go?

Name

Date

Three cards are missing from this street. Put them back without moving the others. Now point two houses to the left of this one and tell me its number.

CULMINATING TASK • GRADE 1**Bundle it, build it, place it**

Name _____

Date _____

Count nine sticks into the ones column and add one more. Say what you do next, out loud, as you do it. Card both columns and read the number. Now lay the eleven house cards in order with no gaps, and tell me the number three houses from the end. Last, start where I say and count on to 70 on the chart — tell me first whether you will use rows or single squares.

**TEACHER PLANNING AND HANDOFF**

- A child who cannot say both numbers in lesson 2 — the one on the desk and the one the cards claim — should meet the sticks again before any regrouping work, because regrouping is that same gap used deliberately.
- Lesson 5 is where a row of the hundred chart becomes worth ten without being counted. If the class is going on to two-digit addition, that recognition is the one to check before starting.

- A Place for Zero's lessons on adding zero and on testing a claim about zero were left out: they are about the number zero rather than about the place it holds, and the place is what this unit needs.

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