MATH UNIT

Getting to one hundred, and how many words it takes

Grade 1 | 7 lessons | 7 × 30 minutes | 3 source books | 210 minutes in all

THE QUESTION THIS UNIT FOLLOWS

All these counts end at one hundred. Why does one of them take so much longer to say?

ABOUT THIS UNIT

This unit is about one destination reached five different ways. Children walk to one hundred by twos, by fives and by tens on a chart, count the number words each walk costs, build the hundred out of tens they have snapped together themselves, and then meet one hundred again as a number of cents brought in three different handfuls of coins. The arithmetic is skip counting and counting on; what the unit adds is the reason skip counting works at all.

The turn that matters is in lesson 4, where a strip of ten stops being ten things and becomes one ten. Children who have only chanted the tens can say that a count reached a hundred by tens without knowing what the sentence claims, so the strip is earned from ten single cubes before anybody is allowed to call it ten. After that the unit is about what changes and what does not: the destination stays at one hundred while the number of words, the size of the step and even the objects change, and the last lesson is the one where the step changes in the middle of a single count.

THE MATHEMATICAL ARC

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

1. Three coloured walks up the chart, all ending in the same place
2. Count the words, not the numbers: fifty, twenty, ten

3	One strip for one number word, and the same count backwards
4	Ten ones make one ten, and ten tens make the hundred
5	Settle the book's argument with a number it never prints
6	One hundred cents, brought three different ways
7	Carry the count on when the coin changes

SOURCE BOOKS

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

Counting with Sebastian Pig and Friends on the Farm
2 lessons in this unit

Hide And Seek
3 lessons in this unit

A Dollar, a Penny, How Much and How Many
2 lessons 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 reliably to twenty by ones. It sits well before any two-digit addition, because the tens have to be a unit before regrouping means anything.

What students need first

Children can count to twenty by ones with one touch to one number word, and can read the numerals on a hundred chart.

What this unit develops

Skip counting by twos, fives and tens to one hundred; counting a skip count's number words; ten ones as one ten and ten tens as one hundred; one hundred cents composed three ways; counting on when the step changes.

What it prepares them for

Two-digit addition and subtraction, where a ten has to be a thing that can be taken apart and put back, and the Grade 2 money work, which assumes one hundred cents is a dollar.

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	Three coloured walks up the chart, all ending in the same place	Counting with Sebastian Pig and Friends on the Farm lesson 1, Red, Green, Blue: Three Ways up the Hundred Chart	Three completed walks, each ending on one hundred, and the ten blue numbers written into a strip of ten boxes.
2	Count the words, not the numbers: fifty, twenty, ten *Checkpoint after this lesson*	Counting with Sebastian Pig and Friends on the Farm lesson 4, Fifty Words, Twenty Words, Ten Words, One Hundred Every Time	A slip carrying three word counts, with all three walks checked to have finished in the same square.
3	One strip for one number word, and the same count backwards	Hide And Seek lesson 2, Ten at a Time	A hundred built as ten strips and taken apart again, with the last number said loudly enough for a partner to hear where the count stopped.
4	Ten ones make one ten, and ten tens make the hundred	Hide And Seek lesson 3, Ten Tens Make the Hundred	A hundred block built from earned tens, with both of its numbers said aloud.
5	Settle the book's argument with a number it never prints *Checkpoint after this lesson*	Hide And Seek lesson 6, How Many Times Did He Say a Number?	A covered hundred chart, the number of number words the tens count took, and two named evidence sentences.
6	One hundred cents, brought three different ways	A Dollar, a Penny, How Much and How Many lesson 1, Three Ways to Bring a Dollar	Three trays, each counted its own way and carded with its amount, and a spoken same-amount sentence naming two of them.

#	MATHEMATICAL MOVE	SOURCE LESSON	COLLECT
7	Carry the count on when the coin changes	A Dollar, a Penny, How Much and How Many lesson 3, Zach's Handful: Counting On When the Coin Changes	A counted mat reaching one hundred cents, with both change-of-step places named aloud and repeated back by a partner.

UNIT VOCABULARY

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

by twos, by fives, by tens — Said about a walk on the chart in lesson 1, always with the destination named too.

number word — Lesson 2's unit of counting. Children count the words, not the things, which is a distinction worth saying out loud.

one ten — Lesson 4. A strip is one ten and ten ones at the same time, and both numbers get said.

count on — Lesson 7's phrase, for carrying a count forward from a number already reached rather than starting again.

cents — Lesson 6 brings one hundred back as an amount rather than a position on a chart.

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: a hundred chart, ten ten-strips, a mixed handful of coins — six dimes, one quarter and five pennies — and a three-line slip, one set per pair
- Performance task page, one per child

ASSESSMENT PLAN

Daily evidence

Keep the three word counts from lesson 2 and the two-number answer from lesson 4. A child who can say ten strips and one hundred cubes about the same block has the idea the rest of the unit rests on; note the child who can only say one of the two numbers.

Checkpoint 1, after lesson 2: Which way needs the fewest words?

A hundred chart. The child walks to one hundred by fives and then by tens, counting the number words each time, and says which walk needed fewer and where both walks finished.

Book-free. A hundred chart, no book.

Look for. The child counts the pointing and not the numbers landed on. A child who reports twenty for the tens has counted the numbers on the chart rather than the words they said.

Checkpoint 2, after lesson 5: Ten strips, and how many cubes

A block of ten ten-strips. The child says how many strips it holds and how many cubes, then takes one strip out, breaks it into singles, counts them, puts it back and says whether the hundred changed.

Book-free. Ten-strips, no book.

Look for. Both numbers, said as two different numbers about the same block. The second half — that the hundred did not change — is the one that shows the ten is being held as a unit rather than as a picture.

Culminating task: One hundred, three ways, and one that changes step

Each pair does three things. They walk a hundred chart to one hundred by fives and by tens, counting the number words each walk takes and writing both counts. They build one hundred out of ten strips they snap themselves, and say both numbers the block carries. Then they count a mixed handful of coins to one hundred cents, starting with the dimes by tens and carrying the count on across the quarter and the pennies without restarting, and name the two places the count changed step.

Collect. The slip with two word counts, the built hundred with both numbers said, and the coin count with the two change-of-step places named.

What it assesses. Skip counting to one hundred, counting the words a count costs, ten tens as one hundred, and counting on when the step changes — every move the unit built, in the three settings it built them in.

DAILY LESSON PAGES

Lesson 1 Three coloured walks up the chart, all ending in the same place

SKILL LESSON **Counting with Sebastian Pig and Friends on the Farm (/math-library/548.html)** · lesson 1, Red, Green, Blue: Three Ways up the Hundred Chart · Grade 1 · 20 minutes
Skip counting to one hundred by twos, fives and tens

I CAN	I can walk to one hundred by twos, by fives and by tens.
BIG IDEA	A skip count is a walk with a fixed step. Different steps land on different numbers and still arrive at the same place.
SUCCESS	The child lands on one hundred on all three walks, touching every number and saying it, without hunting for the next one.
CONNECT | 5 MIN	First lesson. Ask the class to count to one hundred by ones and stop them at about twenty. Ask whether there is a faster way to get there.
TAUGHT ON ITS OWN	The book's last page is a hundred chart in three colours with its own instructions: the twos are red, the fives are green, the tens are blue, and all three lists end on one hundred.
SOURCE CORE | 20 MIN	Children touch the four cats one at a time to start at ones, then put a stick on the first red number and slide it along every red to one hundred, then do the greens, then the blues, saying each number as they land.
COLLECT	Three completed walks, each ending on one hundred, and the ten blue numbers written into a strip of ten boxes.
CLOSE | 5 MIN	Children read the blue strip back with the chart turned over, so the tens are said from the walk rather than read off the page.

From the source lesson: A hundred chart for each pair, marked the way the book's last page is - the twos in red, the fives in green, the tens in blue - with any number that belongs to more than one of the three lists carrying more than one mark; A pointing stick, one per child, for touching a number as it is said; A strip of ten empty boxes, one per pair; Word cards: ones, twos, fives, tens

Watch for: A missed number heard by a partner. Go back to the last number both agree on and start again from there rather than from the beginning.

Lesson 2 Count the words, not the numbers: fifty, twenty, ten

SKILL LESSON **Counting with Sebastian Pig and Friends on the Farm (/math-library/548.html)** · lesson 4, Fifty Words, Twenty Words, Ten Words, One Hundred Every Time · Grade 1 · 20 minutes
Comparing how many number words each skip count needs to reach one hundred

I CAN	I can count how many number words each walk costs.
BIG IDEA	Faster means fewer words for the same hundred. That is a thing you can count rather than a thing you are told.
SUCCESS	The child writes three counts — fifty, twenty, ten — and says that all three walks end on one hundred while the blues need the fewest words.
CONNECT | 5 MIN	Yesterday all three walks finished in the same square. Ask which one felt longest, and say that today the class is going to find out whether that feeling is right.
TAUGHT ON ITS OWN	Sebastian's whole problem is time: counting one by one will take forever, twos will be faster, and by the end he wants tens.
SOURCE CORE | 20 MIN	Children point at every red number in turn and count the pointing rather than the numbers, saying one, two, three as the finger moves, and write the count on the reds line; then they do the same for the greens and the blues.
COLLECT	A slip carrying three word counts, with all three walks checked to have finished in the same square.
CLOSE | 5 MIN	Children look at their three counts, say which is smallest, and say the whole sentence: all three land on one hundred, but the blues get there in the fewest words.

From the source lesson: A hundred chart for each pair, marked the way the book's last page is - the twos in red, the fives in green, the tens in blue - with any number that belongs to more than one of the three lists carrying more than one mark; A tally slip, one per pair, headed reds, greens, blues; Word cards: forever, red, green, faster

Watch for: A child who writes the last number landed on instead of the count of words. Ask them to say the count out loud as the finger moves.

Checkpoint after this lesson: Which way needs the fewest words?. The page is at the end of this guide.

Lesson 3 One strip for one number word, and the same count backwards

SKILL LESSON **Hide And Seek (/math-library/279.html)** · lesson 2, Ten at a Time · Grade 1 · 20 minutes

Skip counting by tens to one hundred, one number word per ten

I CAN	I can lay a ten for every number word I say, and take them away again.
BIG IDEA	When the thing you hold and the thing you say change together, a skipped or doubled number word is visible on the desk instead of only audible.
SUCCESS	The child lays and says the tens to one hundred and counts the same strips back down to nothing without losing the place.
CONNECT | 5 MIN	The chart gave the tens as numbers to land on. Today each ten is something in the hand.
TAUGHT ON ITS OWN	The book prints the by-tens count twice, and it is the only run of numbers in the text carried all the way to its destination — one child counts this way because it gets him to a hundred fast, and the other does not believe him.
SOURCE CORE | 20 MIN	Children lay one ten-strip and say ten, a second and say twenty, one strip and one number word each time until the strips run out, then take them away one at a time and say the number left after each one goes.
COLLECT	A hundred built as ten strips and taken apart again, with the last number said loudly enough for a partner to hear where the count stopped.
CLOSE | 5 MIN	A partner builds a pile of strips while the child looks away. The child counts the pile by tens without taking it apart and says the number of strips and the number of squares as two different numbers.

From the source lesson: Ten-strips, ten of them per pair, each strip ten squares long; A hundred chart per pair, one to one hundred, unmarked; Word cards: count

Watch for: Strips laid in a heap. Keep them in a straight line so none is counted twice.

Lesson 4 Ten ones make one ten, and ten tens make the hundred

SKILL LESSON **Hide And Seek (/math-library/279.html)** · lesson 3, Ten Tens Make the Hundred · Grade 1 · 20 minutes

Understanding one hundred as ten tens, and a ten as ten ones

I CAN	I can snap ten cubes into a ten and build a hundred out of ten of them.
BIG IDEA	A group can stop being counted and start being counted with. That is why a hundred takes ten number words instead of a hundred, and without it the tens are only a rhyme.
SUCCESS	The child says both numbers the block carries — ten strips and one hundred cubes — and says why the hundred did not change when one ten came apart and went back.
CONNECT | 5 MIN	Yesterday the strips were handed over already ten long. Today nobody may call a strip ten until they have snapped it out of ten singles.
TAUGHT ON ITS OWN	The line that ends the argument says the count reached a hundred by tens, and a child who has only chanted the tens can say that sentence without knowing what it claims.
SOURCE CORE | 20 MIN	Children snap ten single cubes into one strip and say ten as it closes, keep going until they hold ten strips, saying the running number as each one closes, and lay the ten strips side by side in a square block.
COLLECT	A hundred block built from earned tens, with both of its numbers said aloud.
CLOSE | 5 MIN	Children take one strip out of the block, snap it into singles, count them to check there are ten, put the block back together and say why the hundred did not change.

From the source lesson: Ten-strips, ten of them per pair, each strip ten squares long; Number cards for the tens, 10 through 100, one set per pair; Word cards: ten, hundred

Watch for: A strip named ten before it holds ten. The snapping is the whole lesson; hand nothing over ready-made.

Lesson 5 Settle the book's argument with a number it never prints

MATH THROUGH THE READING **Hide And Seek (/math-library/279.html)** · lesson 6, How Many Times Did He Say a Number? · Grade 1 · 20 minutes

Students settle the book's argument by working out a number the book never prints, how many number words a count to one hundred by tens actually takes.

I CAN	I can say how many number words a count to one hundred by tens takes, and name the sentences that prove it.
BIG IDEA	The two children in the book shout at each other, and shouting settles nothing. The sentences that fix the answer are the ones carrying the step and the destination.
SUCCESS	The child gives the number and names the two evidence sentences, in that order, and a partner agrees the sentences really do fix it.
CONNECT | 5 MIN	Lesson 2 counted the words on a chart. Today the same question is asked about the argument in the book, and the answer has to be handed in with its evidence.
TAUGHT ON ITS OWN	One child says the count reached a hundred by tens and the other does not believe him, and the book never says how many number words that count actually takes.
SOURCE CORE | 20 MIN	After hearing the argument read through, children hunt out the two sentences that would settle it, then lay one ten-strip for every number word of the tens count until the hundred chart is covered, and count the strips.
COLLECT	A covered hundred chart, the number of number words the tens count took, and two named evidence sentences.
CLOSE | 5 MIN	Children start covering the same chart one square per number word, do not finish, and say how many words it would take to cover the whole chart that way and how they know from the chart in front of them.

From the source lesson: Ten-strips, ten of them per pair, each strip ten squares long; A hundred chart per pair, one to one hundred, unmarked; Sentence cards carrying the candidate lines, one set per pair; The argument read aloud in full, slowly on the first reading

Watch for: A child citing the shouting. Ask what that sentence tells them about the count, and let the answer be nothing.

Checkpoint after this lesson: Ten strips, and how many cubes. The page is at the end of this guide.

Lesson 6 One hundred cents, brought three different ways

SKILL LESSON **A Dollar, a Penny, How Much and How Many (/math-library/530.html)** · lesson 1, Three Ways to Bring a Dollar · Grade 1 · 20 minutes

Composing one hundred cents from quarters, dimes and pennies

I CAN	I can count three different handfuls and find they are the same amount.
BIG IDEA	One amount has many shapes. Four coins and a hundred coins can be the same number of cents, and the way to know is to count each one its own way.
SUCCESS	The child counts all three trays with the right count for each and says a same-amount sentence naming two of them and the cents they share.
CONNECT | 5 MIN	One hundred has been a square on a chart and a block of strips. Today it is an amount of money, and it arrives in three different handfuls.
TAUGHT ON ITS OWN	Three cats pay for the same thing with completely different handfuls, and the book asserts the handfuls match without ever counting one.
SOURCE CORE | 20 MIN	Pairs put out the coins each payment line names in its own tray, then count the four quarters by twenty-fives and the ten dimes by tens, one touch to one number word, and say whether the two trays came to the same number.
COLLECT	Three trays, each counted its own way and carded with its amount, and a spoken same-amount sentence naming two of them.
CLOSE | 5 MIN	Children fill ten-frames with Anna's hundred pennies, count the full frames by tens to one hundred, and say what is the same about this tray and Jenny's four coins and what is different.

From the source lesson: Plastic coin sets per pair: four quarters, ten dimes, one hundred pennies, five loose pennies, seven extra dimes; Three labelled trays: JENNY, HER BROTHER, ANNA; Ten-frames for pennies, ten to a frame; Amount cards: blank slips for writing a number of cents; Word

cards: worth, same, hundred, dollar

Watch for: Counting quarters by ones. Touch one coin per number word and say twenty-five, fifty, seventy-five, one hundred.

Lesson 7 Carry the count on when the coin changes

SKILL LESSON **A Dollar, a Penny, How Much and How Many (/math-library/530.html)** · lesson 3, Zach's Handful: Counting On When the Coin Changes · Grade 1 · 20 minutes
Counting on across coin kinds to one hundred cents

I CAN	I can keep counting from the number I reached when the coin changes.
BIG IDEA	A count does not have to start again when the step changes. It carries on from where it stopped, and the place it changes step is where the running total gets lost.
SUCCESS	The child counts the whole handful without restarting and names both places the count changed step, saying which coin made each change.
CONNECT | 5 MIN	Yesterday each tray could be counted one way all the way through. Today one handful cannot.
TAUGHT ON ITS OWN	Zach's is the only handful in the book that mixes three kinds of coin, and it is the one that cannot be counted with a single skip count.
SOURCE CORE | 20 MIN	Children set out seven dimes, one quarter and five pennies in their own places, count the dimes by tens to seventy, and carry the count on across the quarter to seventy-five and then along the pennies to one hundred without starting over.
COLLECT	A counted mat reaching one hundred cents, with both change-of-step places named aloud and repeated back by a partner.
CLOSE | 5 MIN	Children set Zach's mat beside Jenny's four quarters, say one sentence naming both and the cents they share, then say what is different about them using the number of coins rather than the number of cents.

From the source lesson: Plastic coin sets per pair: seven dimes, one quarter, five pennies; Counting mat with three labelled areas: DIMES, QUARTER, PENNIES; Worth cards from the first lesson, one per coin kind; Amount cards: blank slips for writing a number of cents; Word cards: worth, count on, cent

Watch for: The count restarting at the quarter. Put a finger on seventy and say the next number from there.

CULMINATING PERFORMANCE TASK

One hundred, three ways, and one that changes step

Each pair does three things. They walk a hundred chart to one hundred by fives and by tens, counting the number words each walk takes and writing both counts. They build one hundred out of ten strips they snap themselves, and say both numbers the block carries. Then they count a mixed handful of coins to one hundred cents, starting with the dimes by tens and carrying the count on across the quarter and the pennies without restarting, and name the two places the count changed step.

Collect. The slip with two word counts, the built hundred with both numbers said, and the coin count with the two change-of-step places named.

What it assesses. Skip counting to one hundred, counting the words a count costs, ten tens as one hundred, and counting on when the step changes — every move the unit built, in the three settings it built them in.

TEACHER KEY AND RUBRIC

Key

- Checkpoint 1: twenty words by fives and ten by tens, both finishing on one hundred. A child who says fifty and twenty has counted the squares between landings; ask them to count the pointing.
- Checkpoint 2: ten strips, one hundred cubes, ten singles in the broken strip, and no, the hundred did not change.
- Task: six dimes, one quarter and five pennies is one hundred cents. Count it yourself before the lesson — if the handful is wrong by a penny the child's correct method produces a wrong total and the error looks like theirs.

Rubric

STRAND	SECURE LOOKS LIKE	DEVELOPING	NOT YET
Representation	A ten is shown as a strip or a dime and is not taken apart to be counted unless the lesson asks for it.	Does it with the arrangement in front of them.	Produces an answer without the arrangement or the reason.
Calculation	One touch to one number word throughout, and a count carried on from where it stopped rather than restarted.	Does it with the arrangement in front of them.	Produces an answer without the arrangement or the reason.
Meaning	Both numbers are said about one block or one tray — ten strips and one hundred cubes, four coins and one hundred cents.	Does it with the arrangement in front of them.	Produces an answer without the arrangement or the reason.
Explanation	The child can say why a count by tens needs fewer words than a count by fives to reach the same hundred.	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

Which way needs the fewest words?

Name Date

Walk to one hundred by fives and count how many times you say a number. Now do it by tens. Which one needed fewer words? Where did both of them finish?

CHECKPOINT 2 · GRADE 1

Ten strips, and how many cubes

Name Date

How many strips? How many cubes? Take one strip out and break it. How many singles? Put it back. Did the hundred change?

CULMINATING TASK · GRADE 1

One hundred, three ways, and one that changes step

Name Date

Walk to one hundred by fives and count how many times you say a number. Write it. Do it by tens and write that. Now snap ten strips and build the hundred: how many strips, and how many cubes? Last, count the coins to one hundred cents. Start with the dimes. Do not start again when the coin changes — tell me the two places where your counting changed step.

TEACHER PLANNING AND HANDOFF

- A child who cannot give both numbers for the block in lesson 4 will find two-digit regrouping opaque. Give them the strips again before that unit rather than after it.
- Lesson 7 is the only lesson on this shelf where the step changes inside one count. If the class is going on to money work, keep it.
- Hide And Seek's lessons on counting the hidden and on one more were left out because they are counting by ones, which this unit has as a starting point rather than a destination.

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