MATH UNIT

What money is worth, and what comes back

Grade 2 | 8 lessons | 8 × 30 minutes | 5 source books | 240 minutes in all

THE QUESTION THIS UNIT FOLLOWS

How much is that, really?

ABOUT THIS UNIT

Money is the one place in Grade 2 where a number is attached to an object that looks nothing like it. A nickel is bigger than a dime and worth half as much. This unit builds worth as a count of pennies first, so every later comparison rests on something a child laid out themselves, and then makes the point directly: order the four coins by size and by worth and the two lines do not match.

From there it does the work a shop actually asks for. Trade one set of coins for another of the same value. Find every way to reach an amount and say why the list is finished. Pay a real price from the coins you happen to be holding. And finally read the sentence carefully enough to know whether you are being asked to split a dollar or to take a price out of one.

THE MATHEMATICAL ARC

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

1. A coin's worth, built as a row of pennies
2. Size and worth give two different orders of the same four coins
3. A trade changes the coins and keeps the cents
4. Every way to make twenty-five cents, and why the list is finished
5. Pay one price four ways from the coins you actually hold

6	Enough, too much, not enough: the same handful at two prices
7	Change from a dollar, found two ways
8	Change for a dollar, or change from a dollar

SOURCE BOOKS

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

Once Upon a Dime
2 lessons in this unit

The Coin Counting Book
2 lessons in this unit

Money Math with Sebastian Pig and Friends at the Farmer's Market
1 lesson in this unit

Money Counts
1 lesson in this unit

Follow the Money!
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

Any term after the class counts on by fives and tens. It is long enough to carry a fortnight and it feeds a class shop naturally.

What students need first

Children can count on by fives, tens and twenty-fives, and can add two two-digit numbers.

What this unit develops

Coin worth as a count; distinguishing worth from size; equivalence by exchange; exhaustive composition of an amount with an argument that the list is complete; paying under a constraint; deciding sufficiency; finding change by counting up and by subtracting.

What it prepares them for

Grade 4 work on unit price, discounts and tax, where a price still has to be read before it can be computed.

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	A coin's worth built as a row of pennies, and the four coins ordered by worth	Once Upon a Dime lesson 1, The Four Crops the Tree Grew	Four trays in a line from least worth to most, each with its matching penny row as the proof.
2	Size and worth give two different orders of the same four coins	Once Upon a Dime lesson 4, Small Coin, Big Worth	A two-line card, one order by size and one by worth, with the coin that moves furthest circled.
3	A trade changes the coins and keeps the cents	The Coin Counting Book lesson 1, Trade Up: Five Pennies for a Nickel, Ten Cents Two Ways	The trade mat with each exchange counted on both sides, and the two routes to ten cents built.
4	Every way to make twenty-five cents, organised by dimes, and the argument that the list is finished *Checkpoint after this lesson*	The Coin Counting Book lesson 3, Every Way to Make Twenty-Five Cents	A sorting chart with the three ways in their dime columns and the failed fourth column counted to thirty.
5	Pay one price four ways from the coins actually in hand, and count what stays	Money Math with Sebastian Pig and Friends at the Farmer's Market lesson 3, Four Ways to Pay Thirty-Five Cents	Up to four recorded payments, each counted to thirty-five, with the keep tray counted alongside.
6	Enough, too much, not enough — the same handful against two different prices	Money Counts lesson 1, Enough, Too Much, and What Comes Back	The change counted and the subtraction written for the candy, and a spoken sufficiency judgement with both numbers for the toy.
7	Change from a dollar, found by counting up and again by subtracting *Checkpoint after this lesson*	Follow the Money! lesson 3, What Comes Back from a Dollar	The pay mat with the change laid out, and the same amount reached a second way by counting up.

#	MATHEMATICAL MOVE	SOURCE LESSON	COLLECT
8	Change for a dollar or change from a dollar: one word chooses between splitting and subtracting	Follow the Money! lesson 6, Change For a Dollar, Change From a Dollar	Two written sentences one above the other with the changed word underlined and the cents amount each produced.

UNIT VOCABULARY

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

worth What a coin is, in cents. Children build it as a row of pennies before they say it.

trade Swapping coins for others of the same worth. The cents do not change.

change What comes back. Found by counting up as well as by subtracting.

enough Lesson 6: a judgement about an amount against a price, said with both numbers.

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 coin tray holding six pennies, four nickels, four dimes and three quarters, two price cards and a paper dollar, per pair
- Performance task page, one per child

ASSESSMENT PLAN

Daily evidence

Keep the penny rows from lesson 1, the sorting chart from lesson 4, and the pay mat from lesson 7. Each one shows an amount reached rather than recalled.

Checkpoint 1, after lesson 4: Three ways to forty cents

A tray of coins. The child builds forty cents three different ways, counts each pile to prove it, and says which way used the fewest coins.

Book-free. Plain coins, no book.

Look for. Three piles each counting to forty, with the count said aloud. A pile that is not counted has not been proved.

Checkpoint 2, after lesson 7: What comes back

A price of sixty-five cents paid with a dollar. The child finds the change by counting up from the price to one hundred, then again by subtracting, and says whether the two agree.

Book-free. Plain coins and a paper dollar.

Look for. Thirty-five cents both times, and the child noticing that the two routes agree rather than being told.

Culminating task: Run the shop

Each pair is given a coin tray and two price cards. For each price they decide first whether the coins on the tray are enough and say both numbers, then build the exact payment if they can, and count what stays. For the second price they pay with the paper dollar instead and lay out the change, counting it up from the price to a dollar. They finish by writing both sentences the shopkeeper could be asked: change for a dollar, and change from a dollar, and saying which one their second purchase was.

Collect. The two payment trays with their counts, the change laid out, and the two written sentences with their amounts.

What it assesses. Worth, composition, sufficiency and change — everything the unit built, all inside one dollar, and the closing sentence is the reading distinction from lesson 8.

DAILY LESSON PAGES

Lesson 1 A coin's worth built as a row of pennies, and the four coins ordered by worth

SKILL LESSON **Once Upon a Dime (/math-library/86.html)** · lesson 1, The Four Crops the Tree Grew · Grade 2 · 20 minutes

Coin worth: penny, nickel, dime, quarter

I CAN	I can show what each coin is worth.
BIG IDEA	A coin's worth is a count of pennies, and the count is what puts the four coins in order.
SUCCESS	Each tray has a matching penny row beside it and the four trays stand in order of worth.
CONNECT | 5 MIN	First lesson. Hold up a nickel and a dime and ask which is worth more. Take the answers and settle nothing yet.
TAUGHT ON ITS OWN	The tree grows one coin in the middle of each flower, a different coin every year, and the book never says what any of them is worth.
SOURCE CORE | 20 MIN	Pairs sort a mixed handful into four labelled trays, then lay five pennies beside the nickel, ten beside the dime and twenty-five beside the quarter in rows of five, and write the cent worth on each tray card.
COLLECT	Four trays in a line from least worth to most, each with its matching penny row as the proof.
CLOSE | 5 MIN	Each child writes four sentences, one per tray, and reads them to a partner who checks each number against the penny row still lying on the mat.

From the source lesson: Mixed handful of real or plastic coins per pair; Four labelled coin trays per pair (penny, nickel, dime, quarter); Sorting mat; Cup of pennies for matching, about forty per pair; Value cards, one per tray; Pencils; Crop card recording sheet, one per student; Word cards: dime, nickel, penny, quarter

Watch for: A pair puts the nickel above the dime because the coin is bigger. Send them to count the two rows rather than telling them.

Lesson 2 Size and worth give two different orders of the same four coins

SKILL LESSON **Once Upon a Dime (/math-library/86.html)** · lesson 4, Small Coin, Big Worth · Grade 2 · 20 minutes

Comparing what a coin is worth against how big it looks

I CAN	I can show that the bigger coin is not always worth more.
BIG IDEA	Size and worth are two different orders of the same four coins, and only one of them is about money.
SUCCESS	The two written lines do not match, and the child circles the coin that travels furthest between them.
CONNECT | 5 MIN	Yesterday you ordered the coins by worth. Today you order the same four by size and put the two lines under each other.
TAUGHT ON ITS OWN	The narrator objects that the small buds are not big enough for nickels, and the farmer answers that they are worth twice as much.
SOURCE CORE | 20 MIN	Pairs lay a nickel beside a dime and settle by looking which is bigger, build a row of five pennies under one and ten under the other, then order all four coins by size and again by worth and write both lines.
COLLECT	A two-line card, one order by size and one by worth, with the coin that moves furthest circled.
CLOSE | 5 MIN	Each pair answers one question aloud to another pair — does the bigger coin always carry the bigger worth — pointing at two coins and saying both numbers.

From the source lesson: One nickel and one dime per pair; Cup of pennies for matching, about twenty per pair; One extra nickel per pair; One penny, nickel, dime and quarter per pair; Two-line sorting card, one per pair; Pencils; Word cards: bigger, size, twice as much, worth

Watch for: A child answers from memory of yesterday. Ask which two coins on the mat prove it, and make them point.

Lesson 3 A trade changes the coins and keeps the cents

SKILL LESSON **The Coin Counting Book (/math-library/91.html)** · lesson 1, Trade Up: Five Pennies for a Nickel, Ten Cents Two Ways · Grade 2 · 20 minutes

Coin equivalence: trading pennies and nickels for one coin of the same value

I CAN	I can trade coins without changing the money.
BIG IDEA	A trade swaps the coins and keeps the cents, which is not what the plus signs in the book's equations say.
SUCCESS	The child counts what they give and what they get and says both amounts before the trade is accepted.
CONNECT | 5 MIN	You know what each coin is worth. Today you are going to swap a handful for a single coin and the money has to stay the same.
TAUGHT ON ITS OWN	The book prints the five-penny trade for a nickel on its own line, and two clean routes to ten cents.
SOURCE CORE | 20 MIN	Pairs line five pennies along the trade mat and count them, slide them onto the GIVE side and take one nickel onto GET, count both sides and say both amounts; then build ten cents as a nickel and five pennies and trade for a dime.
COLLECT	The trade mat with each exchange counted on both sides, and the two routes to ten cents built.
CLOSE | 5 MIN	Pairs build two nickels, trade for a dime, then say the two routes they took to ten cents and what each one is worth.

From the source lesson: Plastic coin sets: ten pennies, four nickels, two dimes per pair; Trade mat: a paper strip with GIVE on the left and GET on the right; Word cards: dime, nickel, penny, trade

Watch for: A child adds the new coin to the old ones. Count the GIVE side, clear it, then count the GET side.

Lesson 4 Every way to make twenty-five cents, organised by dimes, and the argument that the list is finished

SKILL LESSON **The Coin Counting Book (/math-library/91.html)** · lesson 3, Every Way to Make Twenty-Five Cents · Grade 2 · 20 minutes

Finding every way to make twenty-five cents with nickels and dimes

I CAN	I can find every way and say why there are no more.
BIG IDEA	Organising the search by one coin is what turns a hunt into a finished list.
SUCCESS	The child says the three ways in order and finishes with the reason there is no fourth.
CONNECT | 5 MIN	Yesterday one amount had two routes. Today the question is how many routes there are altogether.
TAUGHT ON ITS OWN	Two ways to build a quarter out of smaller coins are given and then the book stops; with nickels and dimes there is a third.
SOURCE CORE | 20 MIN	Pairs build the book's two ways and count each to twenty-five, hunt for a third using nickels and dimes only and count it, then sort every pile into columns by how many dimes it used and try to fill a fourth column with three dimes.
COLLECT	A sorting chart with the three ways in their dime columns and the failed fourth column counted to thirty.
CLOSE | 5 MIN	Each pair tells another pair the whole list in order and finishes with the reason there is no fourth: three dimes is thirty cents, and thirty cents is past twenty-five.

From the source lesson: Plastic coin sets: ten nickels, six dimes, and five pennies for the extension, per pair; Amount cards: blank slips for writing a cents amount; Sorting chart: three labelled columns, two dimes, one dime, no dimes; Word cards: dime, nickel, quarter

Watch for: A pair claims the list is finished because they stopped finding new ones. Ask for the reason, and send them to build three dimes.

Checkpoint after this lesson: Three ways to forty cents. The page is at the end of this guide.

Lesson 5 Pay one price four ways from the coins actually in hand, and count what stays

SKILL LESSON **Money Math with Sebastian Pig and Friends at the Farmer's Market** (/math-library/549.html) · lesson 3, Four Ways to Pay Thirty-Five Cents · Grade 2 · 20 minutes
Composing one amount from several coin values

I CAN	I can pay one price several ways.
BIG IDEA	A price fixes an amount and not a set of coins, so what you hand over depends on what you are holding.
SUCCESS	Every recorded payment counts to thirty-five, and the keep tray is counted each time.
CONNECT | 5 MIN	Yesterday you found every way to make an amount with any coins you liked. Today you can only use the coins in the purse.
TAUGHT ON ITS OWN	The book asks how Sebastian will pay thirty-five cents and prints one answer without saying why that one.
SOURCE CORE | 20 MIN	Pairs build the sixty cents the friends hold, move the book's payment into the payment tray and count both trays, then pay the same price a different way using only the coins they have, recording each payment by drawing round the coins.
COLLECT	Up to four recorded payments, each counted to thirty-five, with the keep tray counted alongside.
CLOSE | 5 MIN	Pairs lay their payments side by side and say what number was the same in all of them and what was different, then say which used the fewest coins and which the most.

From the source lesson: Plastic or real coins: five pennies, three nickels and four dimes; A payment tray and a keep tray; The book's payment question on a card; A recording sheet with room for four payments; Word cards: pay, worth

Watch for: A payment recorded without being counted. Nothing goes on the sheet until the tray has been counted to thirty-five.

Lesson 6 Enough, too much, not enough — the same handful against two different prices

SKILL LESSON **Money Counts (/math-library/479.html)** · lesson 1, Enough, Too Much, and What Comes Back · Grade 2 · 20 minutes

Deciding whether an amount covers a price, and finding the change

I CAN	I can decide whether the money is enough.
BIG IDEA	The same handful is too much at one price and not enough at another, so the price has to be read before the coins are counted.
SUCCESS	The child says enough or not enough with both numbers in the sentence, before any coin moves.
CONNECT | 5 MIN	You can build a payment. Today you have to decide first whether you can pay at all.
TAUGHT ON ITS OWN	The book runs the same purchase twice: a quarter buys ten cents of candy, and a dollar buys a seventy-five cent toy.
SOURCE CORE | 20 MIN	Pairs price two candies at five cents each, count the quarter, and say before anything moves whether it is enough with both numbers; then pay ten cents and count what came back and write the subtraction.
COLLECT	The change counted and the subtraction written for the candy, and a spoken sufficiency judgement with both numbers for the toy.
CLOSE | 5 MIN	Pairs put four quarters down and count them to one hundred, pay seventy-five by sliding three across, count what stays and name the coin.

From the source lesson: Plastic coin sets per pair: twelve pennies, six nickels, four dimes, four quarters; Price tag cards: CANDY 5 CENTS EACH and TOY 75 CENTS; Money envelopes, one per pair, holding one quarter, two dimes, a nickel and four quarters; Pencils; Word cards: price, change, enough

Watch for: A child pays first and decides afterwards. The judgement is said before a coin moves, every time.

Lesson 7 Change from a dollar, found by counting up and again by subtracting

SKILL LESSON **Follow the Money! (/math-library/566.html)** · lesson 3, What Comes Back from a Dollar · Grade 2 · 20 minutes

Finding the change left from one dollar

I CAN	I can find the change two different ways.
BIG IDEA	Counting up from the price to a dollar and taking the price off a dollar reach the same amount from opposite directions.
SUCCESS	Both routes give the same change, and the child says so.
CONNECT | 5 MIN	Yesterday you counted what came back. Today you find it twice, once forwards and once backwards, and check they agree.
TAUGHT ON ITS OWN	Twice in this book a dollar goes out and something comes back, and the book prints the amount without showing the working.
SOURCE CORE | 20 MIN	Pairs set the seventy-five cent price, pay the paper dollar and lay out the change; then do the same price again by starting at seventy-five and adding coins until the pile reaches a dollar, saying the amount they added.
COLLECT	The pay mat with the change laid out, and the same amount reached a second way by counting up.
CLOSE | 5 MIN	Pairs run the sixty-cent and ninety-cent cards, build each price, hand over the dollar and write the subtraction sentence for each on their slate.

From the source lesson: Price cards showing 75 cents, 60 cents and 90 cents; Coins for each pair: quarters, dimes, nickels and pennies; A paper dollar for each pair; A pay mat with squares for price, paid and change; Slates or half sheets and pencils; Two dimes and one nickel set aside for each pair; Word cards: change, count up, exact, minus

Watch for: A child counts up from zero rather than from the price. Put a finger on the price card and start the count there.

Checkpoint after this lesson: What comes back. The page is at the end of this guide.

Lesson 8 Change for a dollar or change from a dollar: one word chooses between splitting and subtracting

MATH THROUGH THE READING **Follow the Money! (/math-library/566.html)** · lesson 6, Change For a Dollar, Change From a Dollar · Grade 2 · 20 minutes

Students swap one preposition in a sentence the book actually contains and build the two different amounts the two versions demand.

I CAN	I can hear which question the shopkeeper is being asked.
BIG IDEA	One preposition decides between splitting a dollar into coins and taking a price out of it, and both are printed in this book with their answers.
SUCCESS	Two sentences are written with the changed word underlined and a different cents amount under each.
CONNECT | 5 MIN	You can find change two ways. Today the sentence itself changes, and the two versions are asking for different things.
TAUGHT ON ITS OWN	The book says somebody needed change for a dollar and answers it with four quarters; elsewhere it computes a dollar minus seventy-five cents.
SOURCE CORE | 20 MIN	Pairs read the book's sentence and say what the shopkeeper has to do, lay four quarters into the dollar mat counting to one hundred, then write the swapped word onto the blank strip, clear the mat, set the price and hand over the dollar.
COLLECT	Two written sentences one above the other with the changed word underlined and the cents amount each produced.
CLOSE | 5 MIN	Each pair reads both lines to another pair and says why one word, and only that word, moved the answer from four coins to one.

From the source lesson: A strip carrying the book's sentence about change for a dollar; A blank strip and a pencil for the swapped sentence; Four quarters per pair; A one-dollar mat divided into four boxes; A pay mat with squares for price, paid and change; A price card for 75 cents; A paper dollar for each pair; Slates or half sheets and pencils; The two sentences side by side with the changed word underlined

Watch for: A child treats the two sentences as the same request said differently. Put the four quarters and the single quarter side by side and ask which the sentence wanted.

CULMINATING PERFORMANCE TASK

Run the shop

Each pair is given a coin tray and two price cards. For each price they decide first whether the coins on the tray are enough and say both numbers, then build the exact payment if they can, and count what stays. For the second price they pay with the paper dollar instead and lay out the change, counting it up from the price to a dollar. They finish by writing both sentences the shopkeeper could be asked: change for a dollar, and change from a dollar, and saying which one their second purchase was.

Collect. The two payment trays with their counts, the change laid out, and the two written sentences with their amounts.

What it assesses. Worth, composition, sufficiency and change — everything the unit built, all inside one dollar, and the closing sentence is the reading distinction from lesson 8.

TEACHER KEY AND RUBRIC

Key

- Checkpoint 1: any three of, for example, a quarter and three nickels; four dimes; a quarter, a dime and a nickel. The fewest coins is four.
- Checkpoint 2: thirty-five cents.
- Task: set one price the tray can pay exactly and one it cannot, and work both out yourself before the lesson. Change for a dollar means splitting one hundred cents into coins; change from a dollar means one hundred cents minus the price.

Rubric

STRAND	SECURE LOOKS LIKE	DEVELOPING	NOT YET
Representation	Every amount is built in coins and counted, not asserted.	Does it with the arrangement in front of them.	Produces an answer without the arrangement or the reason.
Calculation	The counts are correct and the change agrees when found two ways.	Does it with the arrangement in front of them.	Produces an answer without the arrangement or the reason.
Meaning	Sufficiency is stated with both numbers, the price and the amount held.	Does it with the arrangement in front of them.	Produces an answer without the arrangement or the reason.
Explanation	The child says which of the two dollar sentences their purchase was, and why.	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 2

Three ways to forty cents

Name Date

Build forty cents three different ways. Count each pile to prove it. Which way used the fewest coins?

CHECKPOINT 2 · GRADE 2

What comes back

Name Date

The price is sixty-five cents and you pay with a dollar. Find the change by counting up from the price to a dollar. Now find it again by taking the price off a dollar. Do the two agree?

CULMINATING TASK · GRADE 2

Run the shop

Name Date

For each price on your card: say first whether the coins on your tray are enough, with both numbers in your sentence. Build the exact payment if you can, and count what stays. For the second price, pay with the dollar and lay out the change, counting up from the price. Then write both sentences a shopkeeper could be asked: change for a dollar, and change from a dollar. Which one was your purchase?

TEACHER PLANNING AND HANDOFF

- Children who still order the coins by size in checkpoint 1 need lesson 2 again before any pricing work.
- Lesson 4's argument that the list is finished is the reasoning this unit is really for; it is worth revisiting even if the money work is done.
- Five money books sit in this catalogue at Grade 2 and all five are used. The lessons left out are duplicates of the ones selected, not weaker versions of them.

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