

Add and Subtract to 1,000

Unit 10 Overview: 10 lessons

Students add and subtract within 1,000 the way they did within 100, now with hundreds. They find 10 more, 10 less, 100 more and 100 less, and add and subtract hundreds and tens with a fact they know. Then they add with blocks and quick drawings, by partial sums and in columns, regrouping ones, tens or both. Subtraction follows the same path: blocks first, trading a ten or a hundred, then breaking apart the number taken away, then columns, across a zero too. The unit ends with explaining why a way works and finding mistakes, and, in some states, story problems within 1,000.

THE UNIT, DAY BY DAY

Day 1	Pre-Check	What students already know (page 1 of the test pack).
Day 2	10.1 10 more, 10 less, 100 more, 100 less	I can find 10 more, 10 less, 100 more and 100 less.
Day 3	10.2 Add and subtract hundreds and tens	I can add and subtract hundreds and tens.
Day 4	10.3 Add with blocks and quick drawings	I can add with blocks and quick drawings.
Day 5	10.4 Add by place value: partial sums	I can add each place, then add the parts.
Day 6	10.5 Add in columns: regroup ones, tens or both	I can add in columns and regroup when I need to.
Day 7	10.6 Subtract with blocks: break a ten or a hundred	I can trade a ten or a hundred to subtract.
Day 8	10.7 Break apart to subtract within 1,000	I can break apart a number to subtract.
Day 9	10.8 Subtract in columns, across a zero	I can subtract in columns, even across a zero.
Day 10	10.9 Explain the method; find the mistake	I can explain my steps and find a mistake.
Day 11	10.10 Story problems within 1,000 ★	I can solve story problems within 1,000.
Day 12	Unit Review	The review pages, to go over together.
Day 13	Unit Test	Form A; Form B (other numbers) is for a retest.

★ Taught in 2nd grade in some states. Skip these lessons if yours teaches them in another grade; animalmath.com/standards shows your state's list.

GET READY FOR THE UNIT

- Base-ten blocks for each pair: 9 hundred flats, 20 ten rods and 20 unit cubes
- A hundreds, tens and ones place value mat for each student
- Whiteboards and dry erase markers
- Blank open number lines (a line with no marks) to draw on
- Chart paper for anchor charts: trading, partial sums, columns, across a zero

HOW EACH LESSON GOES

- 1. Warm up** (5 min)
 - 2. Teach** (10 min)
 - 3. Try it together** (10 min)
 - 4. Practice** (15 min)
 - 5. Exit ticket** (5 min): a quick check on the lesson.
- Each lesson page ends with the Animal Math sheets, makers, tools and quizzes for it. "Sheet 3" is the third worksheet of a pack; a color pack prints each sheet again in black and white.

CHECKING AS YOU GO

- EXIT TICKET**
- 2nd Grade Add and Subtract Within 1,000 Exit Tickets:** one for every lesson, four to a page
- PRINTABLE**
- 2nd Grade Add and Subtract Within 1,000 Test:** the Pre-Check, the Unit Review and the Unit Test (Forms A and B), with keys



Add and Subtract to 1,000

Lesson 10.1: 10 more, 10 less, 100 more, 100 less

GOAL Students find 10 more, 10 less, 100 more and 100 less than a number from 100 to 900 in their heads: the tens or the hundreds digit goes up or down one and the other digits stay, unless 10 more or less crosses a hundred ($395 + 10 = 405$).

About 45 minutes

I can find 10 more, 10 less, 100 more and 100 less.

THE LESSON

- 1 Warm up** (5 min) Review within 100: say 46, 73 and 95, and students write 10 more and 10 less on whiteboards. Ask what happens to $95 + 10$.
- 2 Teach** (10 min) Build 247 with 2 flats, 4 rods and 7 cubes. Add a rod: 257. Add a flat: 357. Write 247, 257 and 357 and circle the digit that changed each time. Then build 395 and add a rod: 9 tens and 1 ten make 10 tens, so trade them for a flat: 405. Go back the same way to show $405 - 10 = 395$.
Say: "10 more changes the tens. 100 more changes the hundreds. When the tens pass 9, they make a new hundred."
- 3 Try it together** (10 min) Pull a card and say "10 more", "10 less", "100 more" or "100 less". Students write the answer, then a pair checks with blocks. Include numbers that cross a hundred ($498 + 10$, $702 - 10$) and one with a zero in the tens ($608 - 10$).
- 4 Practice** (15 min) Students write 10 less, 10 more, 100 less and 100 more for the blocks on sheet 1 of 10 and 100 More or Less, follow the arrows on sheet 2 and do the table in their heads on sheet 3. Early finishers make an arrow chain for a partner.
- 5 Exit ticket** (5 min) Students do **Exit Ticket 10.1** and circle a face beside the "I can" line. Look for 704 after $694 + 10$: 604 means the new hundred was missed. On question 2, circling 397 for 10 less than 307 means the hundred was not traded.

Need help? Keep the blocks on the desk: build the number, add or take away one rod or one flat, then read the new number.

Ready for more? Follow longer chains ($+ 100$, $+ 10$, $+ 10$, $- 100$), or work back: 10 more than what number is 600?

ON ANIMAL MATH

PRINTABLE

10 and 100 More or Less: sheets 1-3

MAKER

Base-ten Values: Mode 10 More and 10 Less, Number Range 100-300

TOOL

Base Ten Blocks

QUIZ

Add and Subtract Within 1,000 Quiz: the 10 and 100 More or Less level

EXIT TICKET

2nd Grade Add and Subtract Within 1,000 Exit Tickets: Exit Ticket 10.1

GET READY

- Base-ten blocks for each pair
- Number cards 100 to 900 in a bag
- Whiteboards and markers

WORDS TO USE

10 more: one more ten

100 more: one more hundred

cross a hundred: go past a hundred: 395 to 405

ASK

- Which digit changes when you find 100 less? Why?
- What is 10 more than 495? What happens to the 9 tens?

WATCH FOR

Writes 3105 for 10 more than 395. The tens make 10 tens, a new hundred. Build it and trade 10 rods for a flat: 405.

Changes the hundreds for 10 more ($247 + 10 = 347$). Say "one more ten" and add a rod, not a flat.

Counts on by ones from 247 to find 10 more. Change only the tens digit, then check it by adding one rod.

Add and Subtract to 1,000

Lesson 10.2: Add and subtract hundreds and tens

GOAL Students add and subtract hundreds and tens with a fact they know ($3 + 4 = 7$, so $30 + 40 = 70$ and $300 + 400 = 700$), and add or take away hundreds or tens from a three-digit number by changing only that place ($560 - 30 = 530$).

About 45 minutes

I can add and subtract hundreds and tens.

THE LESSON

- 1 Warm up** (5 min) Quick facts within 10 ($4 + 5$, $8 - 3$, $6 + 2$). For each, students say it again in tens and in hundreds: 4 tens and 5 tens make 9 tens.
- 2 Teach** (10 min) Show 3 flats and 4 flats: 7 flats, 700. Write $3 + 4 = 7$, $30 + 40 = 70$ and $300 + 400 = 700$ one under the other. Then build 560 and take away 3 rods: 530. Only the tens changed. Last, show $340 + 230$ on an open number line: hop 100 to 440, 100 to 540, then 30 to 570.
Say: "I use a fact I know. 3 hundreds and 4 hundreds make 7 hundreds. When I add tens, only the tens change."
- 3 Try it together** (10 min) Partners solve $500 + 200$, $900 - 600$, $450 + 30$, $780 - 50$ and $260 + 300$ with blocks, then write the fact that helped. Finish with a missing number: $425 + \underline{\quad} = 725$.
- 4 Practice** (15 min) Students use a fact they know on sheet 4 of 10 and 100 More or Less, then hop by hundreds and then the tens on sheet 5. Early finishers write three problems that use $2 + 5 = 7$.
- 5 Exit ticket** (5 min) Students do **Exit Ticket 10.2** and circle a face beside the "I can" line. On $920 - 400$, 880 means 4 tens were taken away, not 4 hundreds. On $538 + \underline{\quad} = 738$, look for 200.

Need help? Use flats and rods for every problem, with the facts within 10 on a card.

Ready for more? Solve missing numbers both ways ($\underline{\quad} - 300 = 450$), or add hundreds and tens at once: $340 + 250$.

GET READY

- Hundred flats and ten rods for each pair
- Whiteboards and markers
- An open number line drawn on the board

WORDS TO USE

fact: a small sum you know, like $3 + 4 = 7$

hundreds: 400 is 4 hundreds

hop: a jump on a number line

ASK

- How does $5 + 2$ help you with $500 + 200$?
- Which digit changes when you add 30 to 450? Why?
- How many hops of 100 do you make for $+ 230$?

WATCH FOR

Writes 70 for $300 + 400$. Say it in hundreds: 3 hundreds and 4 hundreds make 7 hundreds. Build it with flats: 700.

Changes the hundreds for $560 - 30$ (260). Read 30 as 3 tens. Take away 3 rods, not 3 flats.

Hops by tens 23 times for $+ 230$. Break 230 into 200 and 30: two hops of 100, then one hop of 30.

ON ANIMAL MATH

PRINTABLE

10 and 100 More or Less: sheets 4-5

TOOL

Base Ten Blocks

TOOL

Number Line: Start 300, End 700, Interval 10, then Jump

EXIT TICKET

2nd Grade Add and Subtract Within 1,000 Exit Tickets: Exit Ticket 10.2



Add and Subtract to 1,000

Lesson 10.3: Add with blocks and quick drawings

GOAL Students add three-digit numbers with base-ten blocks and quick drawings: they put the hundreds, tens and ones together, count each place, and trade 10 ones for a ten or 10 tens for a hundred.

About 45 minutes

I can add with blocks and quick drawings.

THE LESSON

- 1 Warm up** (5 min) Show a quick drawing of 2 squares, 3 sticks and 6 circles; students write 236. Then they draw 418 on whiteboards and hold them up.
- 2 Teach** (10 min) Build 246 and 137 on the mat. Push the hundreds together (3), the tens (7) and the ones (13). Write 3, 7 and 13 in a place value table. 13 ones is too many for the ones place: trade 10 cubes for a rod. Now 3 hundreds, 8 tens and 3 ones: 383. Then draw $172 + 254$ the quick way: 12 sticks, so loop 10 sticks and draw a new square: 426.
Say: "I put each place together. When a place has 10 or more, I trade 10 of them for one of the next place."
- 3 Try it together** (10 min) Partners build and solve $325 + 148$ (trade ones), $263 + 182$ (trade tens) and $214 + 352$ (no trade), then make a quick drawing of one. Ask how they knew when to trade.
- 4 Practice** (15 min) Students count the hundreds, tens and ones on sheet 1 of 3-Digit Addition with Regrouping, then fill in the table and trade on sheet 2. Early finishers draw $367 + 256$ the quick way and trade twice.
- 5 Exit ticket** (5 min) Students do **Exit Ticket 10.3** and circle a face beside the "I can" line. In the table for $124 + 118$, look for 2, 3 and 12 and the sum 242; 2312 means the ones were not traded. On question 2, 2 squares and 14 sticks make 343, not 2143.

Need help? Use blocks for every problem and trade on the mat before writing anything.

Ready for more? Add three numbers with blocks ($125 + 230 + 145$), or find two numbers that need a trade in both places.

GET READY

- Base-ten blocks and a place value mat for each pair
- Whiteboards and markers
- A chart: a square is a hundred, a stick is a ten, a circle is a one

WORDS TO USE

quick drawing: squares, sticks and circles

trade: 10 ones for 1 ten

regroup: trade when you add

ASK

- How many ones in all? Is that enough to trade?
- What do 10 sticks make in a quick drawing?
- Which place did you trade in? How do you know?

WATCH FOR

Writes 3715 for 3 hundreds, 7 tens and 15 ones. Each place holds one digit. Trade 10 ones for a ten: 3 hundreds, 8 tens, 5 ones.

Trades 10 ones but leaves the new ten out of the tens. Move the new rod into the tens column and count the tens again.

Draws 100 circles for a hundred. Show the chart: a square is a hundred. Draw it fast.

ON ANIMAL MATH

PRINTABLE

3-Digit Addition with Regrouping: sheets 1-2

TOOL

Base Ten Blocks: select 10 ones and Put Together

QUIZ

Add and Subtract Within 1,000 Quiz: the Add level

EXIT TICKET

2nd Grade Add and Subtract Within 1,000 Exit Tickets: Exit Ticket 10.3

Add and Subtract to 1,000

Lesson 10.4: Add by place value: partial sums

GOAL Students add by place value: they add the hundreds, the tens and the ones on lines of their own ($356 + 248$: 500, 90 and 14), then add the three parts (604).

About 45 minutes

I can add each place, then add the parts.

THE LESSON

- 1 Warm up** (5 min) Students write numbers in expanded form on whiteboards: $472 = 400 + 70 + 2$, then 608 and 350.
- 2 Teach** (10 min) Write $356 + 248$. Under it, add the hundreds: $300 + 200 = 500$. The tens: $50 + 40 = 90$. The ones: $6 + 8 = 14$. Then add the parts: $500 + 90 + 14 = 604$. Build it with blocks to show the same 604. Then do $275 + 368$: 500, 130 and 13 make 643.
Say: "I add hundreds to hundreds, tens to tens and ones to ones. Then I add the parts."
- 3 Try it together** (10 min) Partners solve $437 + 251$, $164 + 528$ and $385 + 447$ by partial sums on whiteboards. One partner adds the parts; the other checks with blocks. Talk about adding $700 + 120 + 12$.
- 4 Practice** (15 min) Students add each place and then the parts on sheet 3 of 3-Digit Addition with Regrouping. Early finishers solve one problem by partial sums and with blocks and show that the answers match.
- 5 Exit ticket** (5 min) Students do **Exit Ticket 10.4** and circle a face beside the "I can" line. Look at the tens line of $376 + 458$: $70 + 50 = 120$, not 12. On question 2, look for 745; adding $6 + 13 + 15$ means the parts were read as digits.

Need help? Build both numbers with blocks and push each place together before writing its line.

Ready for more? Add a three-digit and a two-digit number by partial sums ($468 + 75$), or add three numbers.

GET READY

- Base-ten blocks for each pair
- Whiteboards and markers
- An anchor chart of one partial sums problem

WORDS TO USE

partial sums: the sum of each place, added at the end

expanded form: a number as its parts:
 $356 = 300 + 50 + 6$

parts: the hundreds, tens and ones sums you add last

ASK

- What is $70 + 50$? How many hundreds is that?
- How do you add $500 + 90 + 14$?
- Which part did you add first? Why?

WATCH FOR

Writes $7 + 5 = 12$ on the tens line. Say the values: 7 tens is 70 and 5 tens is 50, so $70 + 50 = 120$.

Leaves the ones out: $500 + 90 = 590$. Tick each line as you add it. Three lines, three parts.

Adds $600 + 130 + 15$ as $6 + 13 + 15$. Say each part as a number (six hundred, one hundred thirty, fifteen) and add the hundreds first.

ON ANIMAL MATH

PRINTABLE

3-Digit Addition with Regrouping: sheet 3

TOOL

Base Ten Blocks

QUIZ

Add and Subtract Within 1,000 Quiz: the Add level

EXIT TICKET

2nd Grade Add and Subtract Within 1,000 Exit Tickets: Exit Ticket 10.4

Add and Subtract to 1,000

Lesson 10.5: Add in columns: regroup ones, tens or both

GOAL Students add three-digit numbers in columns, ones first: when a place makes 10 or more, they write its ones digit and carry the 1 to the top of the next place, in the ones, the tens or both.

About 45 minutes

I can add in columns and regroup when I need to.

THE LESSON

- 1 Warm up** (5 min) Ask "Do the ones make a new ten?" for $6 + 7$, $4 + 5$, $8 + 9$ and $3 + 7$. Students show thumbs up or down.
- 2 Teach** (10 min) Write $268 + 157$ in columns. Ones: $8 + 7 = 15$; write 5 and carry 1 to the tens. Tens: $1 + 6 + 5 = 12$; write 2 and carry 1 to the hundreds. Hundreds: $1 + 2 + 1 = 4$. The sum is 425. Check it by partial sums: $300 + 110 + 15$. Then do $342 + 251$, where nothing regroups.
Say: "I start with the ones. If a place makes 10 or more, I write the ones digit and carry the 1 to the next place."
- 3 Try it together** (10 min) Partners solve $347 + 236$ (ones), $452 + 183$ (tens) and $579 + 264$ (both) on whiteboards. Before each one they say where it will regroup. One adds; the other checks by partial sums.
- 4 Practice** (15 min) Students do the twelve column problems on sheet 4 of 3-Digit Addition with Regrouping, then a maker sheet. Early finishers write a problem that regroups in the tens but not the ones.
- 5 Exit ticket** (5 min) Students do **Exit Ticket 10.5** and circle a face beside the "I can" line. On question 2, 562 means the 1 was not carried and 582 means it was added twice. In question 1, look for the small 1 over the right column.

Need help? Build the problem with blocks beside the written one and trade on the mat at each step.

Ready for more? Find the missing digits: $4_7 + 25_ = 725$. Or add a three-digit and a two-digit number in columns, lining up the places.

GET READY

- Base-ten blocks for checking
- Grid paper for lining up digits
- Whiteboards and markers

WORDS TO USE

column: digits of the same place, one under the other

regroup: trade 10 of one place for 1 of the next place

carry the 1: write the new ten or hundred at the top of the next column

ASK

- Do the ones make a new ten? Where does the 1 go?
- Why do we start with the ones?
- How can you check your sum?

WATCH FOR

Writes both digits of 15 under the ones. Only one digit fits in a place. Write the 5 and carry the 1 ten.

Forgets the carried 1 in the next column. Circle the carried 1 and say it first: $1 + 6 + 5$.

Starts with the hundreds. Start with the ones: what they make can change the tens and the hundreds.

ON ANIMAL MATH

PRINTABLE

3-Digit Addition with Regrouping: sheet 4

MAKER

Column Math Equations: Operations +, Range Within 1,000, Set Digit Count, Digits 3 digits, Regrouping / Borrowing on, Mix 50%

QUIZ

Add and Subtract Within 1,000 Quiz: the Add level

EXIT TICKET

2nd Grade Add and Subtract Within 1,000 Exit Tickets: Exit Ticket 10.5

Add and Subtract to 1,000

Lesson 10.6: Subtract with blocks: break a ten or a hundred

GOAL

Students subtract three-digit numbers with blocks: when a place does not have enough, they trade 1 ten for 10 ones or 1 hundred for 10 tens, then cross out what is taken away and count what is left.

About 45 minutes

I can trade a ten or a hundred to subtract.

THE LESSON

- 1 Warm up** (5 min) Show 5 flats, 2 rods and 4 cubes (524). Ask how to show 524 with more ones. Trade a rod: 5 hundreds, 1 ten, 14 ones.
- 2 Teach** (10 min) Build 463 and take away 128. Ones: 3 is not enough to take 8, so trade a rod for 10 cubes: 4 hundreds, 5 tens, 13 ones. Cross out 8 ones, 2 tens and 1 hundred: 335 is left. Then build $536 - 274$: 3 tens is not enough for 7, so trade a flat for 10 rods: 4 hundreds, 13 tens, 6 ones. Take away to get 262.
Say: "If a place does not have enough, I trade one from the next place. Then I take away."
- 3 Try it together** (10 min) Partners build and solve $342 - 118$ (trade a ten), $628 - 353$ (trade a hundred) and $785 - 432$ (no trade), and fill in a place value table for each: the number, after trading, and what is left.
- 4 Practice** (15 min) Students trade and cross out on sheet 1 of 3-Digit Subtraction with Regrouping, then use the place value table on sheet 2. Early finishers solve $600 - 250$ with blocks.
- 5 Exit ticket** (5 min) Students do **Exit Ticket 10.6** and circle a face beside the "I can" line. In the after trade row for $241 - 117$, look for 2, 3 and 11, and 124; 136 means the smaller digit was taken from the bigger. On question 2, 418 is $300 + 110 + 8$: 11 tens after the trade. 100 means the 1 ten already there was left out.

Need help? Build every problem and trade on the mat before writing. Start with problems that trade a ten only.

Ready for more? Solve $503 - 168$ with blocks (a hundred, then a ten), or write a problem that trades a hundred but not a ten.

GET READY

- Base-ten blocks and a place value mat for each pair
- Whiteboards and markers
- A place value table drawn on the board

WORDS TO USE

trade: break 1 ten into 10 ones

enough: the top digit is as big or bigger

cross out: mark what you take away

ASK

- Are there enough ones to take away 8? What can you do?
- What does 1 hundred trade for?
- How many tens are there after the trade?

WATCH FOR

Takes the smaller digit from the bigger ($463 - 128 = 345$). Read it as "3 take away 8". Are there 8 ones? Trade a rod first.

Trades but still counts 6 tens in 463. Take the rod off the mat as it becomes 10 cubes, then count the tens again: 5.

Trades when there are enough ($785 - 432$). Check each place first: is the top digit at least as big? Then no trade is needed.

ON ANIMAL MATH

PRINTABLE

3-Digit Subtraction with Regrouping: sheets 1-2

TOOL

Base Ten Blocks: select a ten and Break Apart

QUIZ

Add and Subtract Within 1,000 Quiz: the Subtract level

EXIT TICKET

2nd Grade Add and Subtract Within 1,000 Exit Tickets: Exit Ticket 10.6

Add and Subtract to 1,000

Lesson 10.7: Break apart to subtract within 1,000

GOAL Students subtract by breaking apart the number they take away and taking it one part at a time ($742 - 315$: $742 - 300 = 442$, $442 - 10 = 432$, $432 - 5 = 427$), in number sentences or on an open number line.

About 45 minutes

I can break apart a number to subtract.

THE LESSON

- 1 Warm up** (5 min) Break numbers apart out loud: 426 is 400, 20 and 6; 358 is 300, 50 and 8. Then ask $600 - 300$, $470 - 30$ and $452 - 2$.
- 2 Teach** (10 min) Write $742 - 315$. Break 315 into 300, 10 and 5. On an open number line, start at 742 and hop back 300 to 442, then 10 to 432, then 5 to 427. Write the same steps as number sentences. Then show $624 - 38$ the way the practice sheets do: $624 - 30 = 594$, then $594 - 8 = 586$.
Say: "I break apart the number I take away. I take the hundreds, then the tens, then the ones."
- 3 Try it together** (10 min) Partners solve $863 - 421$, $507 - 234$ and $645 - 58$, one on a number line and one with number sentences, then compare. Ask which hop crossed a hundred.
- 4 Practice** (15 min) Students do sheets 1 and 2 of Decompose to Subtract, 3-Digit Guided: the tens are filled in, and they write the ones and the answer. Early finishers try a sheet of the 3-Digit Open set and choose their own parts.
- 5 Exit ticket** (5 min) Students do **Exit Ticket 10.7** and circle a face beside the "I can" line. Look at the tens step of $653 - 281$: $453 - 80 = 373$ crosses a hundred, the step most often missed. On question 2, look for 7 in the blank and 485.

Need help? Use blocks: build the first number and take away the hundreds, then the tens, then the ones, writing each step.

Ready for more? Solve $803 - 456$ one part at a time, or find two ways to break apart 275 to subtract it.

GET READY

- Blank open number lines
- Whiteboards and markers
- Base-ten blocks to check with

WORDS TO USE

break apart: 315 is 300, 10 and 5

hop back: take away on a number line

open number line: a line with no marks to start

ASK

- How will you break apart 315?
- Which hop crossed a hundred? How do you know?
- Is the answer more or less than 742? Why?

WATCH FOR

Breaks apart the first number instead. Keep the first number whole. Break apart only the number you take away.

Adds a part instead of taking it away. Every hop goes back. Say "take away" at each step.

Gets lost when a hop crosses a hundred ($307 - 30 = 377$). Hop to the hundred first: $307 - 7 = 300$, then 23 more back is 277.

ON ANIMAL MATH

PRINTABLE

Decompose to Subtract - 3-Digit Guided: sheets 1-2

PRINTABLE

Decompose to Subtract - 3-Digit Open: one sheet, for early finishers

MAKER

Decompose to Subtract: Digit Mode 3-Digit, Decomposition Style Guided (One Part Pre-Filled)

TOOL

Number Line: Start 400, End 800, Interval 10, then Jump

QUIZ

Add and Subtract Within 1,000 Quiz: the Subtract level

EXIT TICKET

2nd Grade Add and Subtract Within 1,000 Exit Tickets: Exit Ticket 10.7

Add and Subtract to 1,000

Lesson 10.8: Subtract in columns, across a zero

GOAL

Students subtract in columns, ones first, trading a ten, a hundred or both, and across a zero: in $405 - 178$ there are no tens to trade, so they trade a hundred for 10 tens, then a ten for 10 ones (3 hundreds, 9 tens, 15 ones).

About 45 minutes

I can subtract in columns, even across a zero.

THE LESSON

- 1 Warm up** (5 min) Show 4 flats and 5 cubes (405). Ask how to get more ones when there are no rods. Trade a flat for 10 rods, then a rod for 10 cubes.
- 2 Teach** (10 min) Write $642 - 375$ in columns. Ones: 2 is not enough for 5, so trade a ten: $12 - 5 = 7$. Tens: 3 is not enough for 7, so trade a hundred: $13 - 7 = 6$. Hundreds: $5 - 3 = 2$. The answer is 267. Then $405 - 178$: no tens, so trade a hundred first (3 hundreds, 10 tens), then a ten (9 tens, 15 ones). $15 - 8 = 7$, $9 - 7 = 2$, $3 - 1 = 2$: 227. Check: $227 + 178 = 405$.
Say: "When there is a zero next door, I trade a hundred for 10 tens first. Then I can trade a ten for 10 ones."
- 3 Try it together** (10 min) Partners solve $731 - 458$ (both), $500 - 263$ and $702 - 345$ (across zeros) on whiteboards, then check each by adding. Ask what the 0 became after each trade.
- 4 Practice** (15 min) Students do the twelve problems on sheet 3 of 3-Digit Subtraction with Regrouping (a ten, a hundred or both), then the problems across a zero on sheet 4. Early finishers check three answers by adding.
- 5 Exit ticket** (5 min) Students do **Exit Ticket 10.8** and circle a face beside the "I can" line. On question 2, 417 means the hundred was kept across the zero; 483 means the smaller digit was taken from the bigger. In $600 - 238$, look for 5, 9 and 10 over 6, 0 and 0.

Need help? Do every problem with blocks beside it, trading on the mat, and start with a zero in the ones ($430 - 216$) before a zero in the tens.

Ready for more? Solve $800 - 357$ and $900 - 9$, or write a problem across a zero for a partner and check it by adding.

ON ANIMAL MATH

PRINTABLE

3-Digit Subtraction with Regrouping: sheets 3-4

MAKER

Column Math Equations: Operations –, Range Within 1,000, Set Digit Count, Digits 3 digits, Regrouping / Borrowing on, Mix All

QUIZ

Add and Subtract Within 1,000 Quiz: the Subtract level

EXIT TICKET

2nd Grade Add and Subtract Within 1,000 Exit Tickets: Exit Ticket 10.8

GET READY

- Base-ten blocks for checking
- Whiteboards and markers
- An anchor chart of $405 - 178$

WORDS TO USE

across a zero: the next place is 0

trade: take 1 from the next place and make 10

check by adding: $227 + 178 = 405$

ASK

- Are there enough ones? Are there any tens to trade?
- What does the 0 in the tens become?
- How can you check your answer?

WATCH FOR

Takes the smaller digit from the bigger:

$405 - 178 = 373$. Read each place top to bottom: 5 take away 8. Not enough, so trade.

Trades across the zero but keeps the hundred:

$405 - 178 = 327$. Cross out the 4 and write 3 when the hundred becomes 10 tens.

Writes 10 tens and forgets it became 9 after

the next trade. Cross out the 10 and write 9 as a ten goes to the ones.

Add and Subtract to 1,000

Lesson 10.9: Explain the method; find the mistake

GOAL

Students explain why adding and subtracting by place value works (hundreds with hundreds, tens with tens, ones with ones, trading 10 for 1), and find and fix mistakes: a 1 not carried, the smaller digit taken from the bigger, a hundred kept across a zero.

About 45 minutes

I can explain my steps and find a mistake.

THE LESSON

- 1 Warm up** (5 min) Show $248 + 136 = 374$ and ask if it is right. Students show thumbs up or down, then one tells how they know: $8 + 6 = 14$ makes a new ten, so 384.
- 2 Teach** (10 min) Show two answers to $527 - 249$: Owl says 322, Bear says 278. Solve it together in columns and check by adding: $278 + 249 = 527$, so Bear is right. Find Owl's mistake: Owl did $9 - 7$ and $4 - 2$, the smaller digit from the bigger. Then explain with blocks why we trade: 7 ones are not enough to take away 9.
Say: "I check by adding back. Then I find the step that went wrong and say why."
- 3 Try it together** (10 min) Partners judge three answers on the board: $365 + 278 = 533$ (no regrouping), $604 - 257 = 447$ (kept the hundred) and $571 - 236 = 335$ (right). For each they say right or wrong and show how they know.
- 4 Practice** (15 min) Students add and find who is right on sheet 5 of 3-Digit Addition with Regrouping, then subtract, check by adding and find who is right on sheet 5 of 3-Digit Subtraction with Regrouping. Early finishers write a "Who is right?" for a partner.
- 5 Exit ticket** (5 min) Students do **Exit Ticket 10.9** and circle a face beside the "I can" line. On question 1, look for adding back in the box: $365 + 248 = 613$. On question 2, circling yes for $376 + 147 = 413$ means they missed the regrouping too.

Need help? Give one problem at a time with blocks, and judge one answer before comparing two.

Ready for more? For one problem, write a wrong answer for each mistake (no regrouping, smaller from bigger, kept the hundred) and explain each.

GET READY

- Two answers to one problem on chart paper, one right and one wrong
- Base-ten blocks and whiteboards
- Sentence starters on the board: "I know because ...", "The mistake is ..."

WORDS TO USE

explain: tell or show why your steps work

mistake: a wrong step; find where it went wrong

check: solve another way, or add back, to see if the answer is right

ASK

- How do you know this answer is wrong?
- What did Owl do in the ones place?
- Why does adding back check a subtraction?

WATCH FOR

Picks an answer without solving. Solve it first, or add back, then compare with each answer.

Says "it is wrong" but cannot say where. Check one place at a time, ones first, and point to the step that went wrong.

Explains with "I just know." Use a sentence starter, "The ones make 14, so ...", and show it with blocks.

ON ANIMAL MATH

PRINTABLE

3-Digit Addition with Regrouping: sheet 5

PRINTABLE

3-Digit Subtraction with Regrouping: sheet 5

QUIZ

Add and Subtract Within 1,000 Quiz: the Both level

EXIT TICKET

2nd Grade Add and Subtract Within 1,000 Exit Tickets: Exit Ticket 10.9

Add and Subtract to 1,000

Lesson 10.10: Story problems within 1,000

GOAL Students solve one-step and two-step story problems within 1,000: they find what they know and what is asked, draw a bar model, write a number sentence and solve, and they write a story for a number sentence.

About 45 minutes

★ Taught in 2nd grade in some states

I can solve story problems within 1,000.

THE LESSON

- 1 Warm up** (5 min) Read a story within 100 and students solve it on whiteboards: "There are 64 birds. 28 fly away. How many birds are left?"
- 2 Teach** (10 min) Read: "A farm has 365 apples. It sells 148 apples. How many apples are left?" Draw a bar of 365 with a part of 148 and a part marked ?. Write $365 - 148 = ?$ and solve: 217 apples. Then read a compare story: "Ana reads 412 pages. Ben reads 185 more pages than Ana. How many pages does Ben read?" Draw two bars: $412 + 185 = 597$ pages.
Say: "I find what I know and what the story asks. I draw a bar model, write a number sentence and solve."
- 3 Try it together** (10 min) Read three stories aloud: an add story ($238 + 157$), a take-away story ($540 - 265$) and a two-step story ($325 + 140$, then 90 taken away). Partners draw the bar model, write the number sentence and solve, then share how they knew to add or subtract.
- 4 Practice** (15 min) Students solve the bar model stories on sheets 1-3 of Word Problems Within 1,000, then the two-step stories on sheet 4. Early finishers write a story for a number sentence on sheet 5.
- 5 Exit ticket** (5 min) Students do **Exit Ticket 10.10** and circle a face beside the "I can" line. On question 1, look at the sign: $452 + 176$ means they added when the store sold some. On question 2, 135 more than Max means add; 113 means they subtracted.

Need help? Read the story with the student, act it out with blocks, and fill in the bar model together before writing the number sentence.

Ready for more? Write a two-step story for $450 + 120 - 75$, or solve a story where the start is missing.

GET READY

- Story problems written on chart paper
- Whiteboards and markers
- Base-ten blocks for checking

WORDS TO USE

bar model: bars for the parts and the whole

how many more: find the difference

number sentence: the math of the story, like $315 + 240 = 555$

ASK

- What do you know? What does the story ask?
- Will the answer be more or less than 365? Why?
- Which number goes in the whole bar?

WATCH FOR

Subtracts on every "more" story. Draw the two bars: Ben's bar is Ana's bar and 185 more, so add.

Writes only the answer. Ask for the number sentence and the unit: 217 what? 217 apples.

Puts a part in the whole bar. Ask which number is all of them. That one goes in the whole bar.

ON ANIMAL MATH

PRINTABLE

Word Problems Within 1,000: sheets 1-5

MAKER

Word Problems: Problem Type Bar Model, Number Range 100-300

QUIZ

Add and Subtract Within 1,000 Quiz: the Both level

EXIT TICKET

2nd Grade Add and Subtract Within 1,000 Exit Tickets: Exit Ticket 10.10