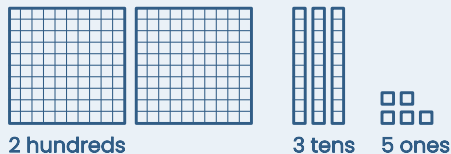


Number Sense Intervention Toolkit, Grades 3–5

6 complete activities from Number Sense Intervention Toolkit, each with a worked answer.



FOR THE TEACHER

1. Choose the page that matches the skill you are working on.
2. Let students work, then listen to how they explain it.
3. Use the answer key's "Watch for" note to plan your next question.
4. Use the Try It task to check that the idea transfers.

6 activities • 3 answer pages • From the 48-activity collection

10 US Letter pages • Print at 100% / Actual Size

Original Bobotemp educational printable • Fictional names, places and prices

Name _____ Date _____

LEVEL 1



Use the place-value table. If you are still unsure about a card, sketch it with base-ten pictures: a big box for each thousand, a square for each hundred, a stick for each ten, and a dot for each one. Use the clues to find the mystery card.

Five number cards are on the table: 3,402, 3,240, 4,023, 3,420, and 2,430. They share some of the same digits, but each card has a different value. Clue 1: I am greater than 3,300. Clue 2: I am less than 4,000. Clue 3: My tens digit is 0. Which card is the mystery number? Compare place by place, starting with the greatest place.

COMPARE PLACE BY PLACE

Card	Thousands	Hundreds	Tens	Ones
3,402	3	4	0	2
3,240	3	2	4	0
4,023	4	0	2	3
3,420	3	4	2	0
2,430	2	4	3	0

EVIDENCE TO USE

- Cards: 3,402 | 3,240 | 4,023 | 3,420 | 2,430
- Compare the greatest place first.
- If those digits match, move one place to the right.

1. Circle the cards that fit Clue 1.

[illegible]

2. Cross out the cards that break Clue 2 or Clue 3.

[illegible]

3. Write the mystery number and one sentence about its hundreds.

TRY IT • Which is greater, 6,509 or 6,590? Explain using the first place where the numbers differ.

Name _____ Date _____

LEVEL 1



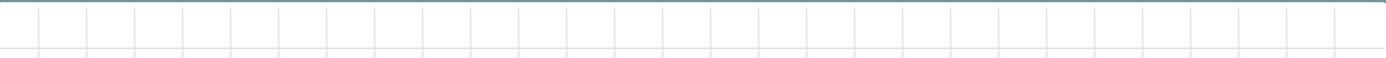
Use a base-ten sketch to count the hundreds that are hiding inside the thousands.

The art room has 3,400 craft sticks. The teacher packs them in bundles of 100 sticks, with no sticks left over. How many bundles of 100 can she make? Then tell how many bundles of 10 the same sticks would make.

EVIDENCE TO USE

- Total: 3,400 sticks
- 1 bundle = 100 sticks
- 1 thousand = 10 hundreds
- 1 hundred = 10 tens

1. Sketch 3 thousands and 4 hundreds.



2. Count all the hundreds and write the number of bundles.

A blank sheet of graph paper with a light gray background and a dark gray border. The grid consists of 10 columns and 10 rows of squares.

3. Tell how many tens are in 3,400.

[illegible]

TRY IT • How many tens are in 520? How many hundreds are in 2,900?

Name _____ Date _____

LEVEL 2 ●●○

Write the value of each repeated digit. Use the ten-times rule: each place is worth ten times the place to its right.

The number 4,440 has three 4s, but each 4 is worth a different amount. Write the value of each 4. Then answer this question: the 4 in the thousands place is how many times the value of the 4 in the tens place? Explain using the ten-times rule.

	Thousands	Hundreds	Tens	Ones
digit	4	4	4	0
value				

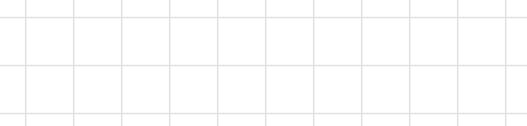
EVIDENCE TO USE

- Number: 4,440
- Places: thousands | hundreds | tens | ones
- One place left = 10 times as much

1. Write the value of each 4.

[illegible]

2. Compare the thousands 4 with the hundreds 4.

A large, empty grid of 10 columns and 10 rows, intended for drawing a picture.

3. Find how many times the thousands 4 is the tens 4.

TRY IT • In 7,707, the 7 in the thousands place is how many times the 7 in the hundreds place?

Name _____ Date _____

LEVEL 2 ●●○

Rename the same number using different units. Check each leg by multiplying and adding back.

Rename 7,048 in three relay legs. Leg 1: ___ hundreds and ___ ones. Leg 2: ___ tens and ___ ones. Leg 3: 7 thousands and ___ ones. Final baton question: how many whole tens are in 7,048? Show how you know.

EVIDENCE TO USE

- Number: 7,048
- 1 thousand = 10 hundreds = 100 tens
- 1 hundred = 10 tens

1. Complete Leg 1 and Leg 2.

[illegible]

2. Complete Leg 3.

A blank sheet of graph paper with a grid pattern. The grid consists of 20 columns and 15 rows of small squares. The paper has rounded corners and a light gray border.

3. Answer the baton question and check it.

This is a blank sheet of white paper with horizontal blue ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins or other markings on the paper.

TRY IT • Fill in: $6,390 = \underline{\hspace{1cm}} \underline{\hspace{1cm}} \underline{\hspace{1cm}}$ hundreds and 9 tens.

Name _____ Date _____

LEVEL 3



Use each digit card exactly once. Test the best number on each side of the target before you decide.

Use the digit cards 3, 5, 0, 8, 1, and 6 exactly once each to build a six-digit number as close as possible to 500,000. The first digit cannot be 0. Build the best number that starts with 3 and the best number that starts with 5. Decide which is closer, and find how far it is from 500,000. Then justify why no other number is closer.

EVIDENCE TO USE

- Cards: 3 | 5 | 0 | 8 | 1 | 6
- Target: 500,000
- Use each card once.
- Distance = greater number - smaller number

1. Build the closest number below and the closest number above 500,000.

2. Find each distance from 500,000.

[illegible]

3. Justify your choice in two sentences.

TRY IT • Use the cards 2, 7, 4, 9, 0, and 1 once each to build the six-digit number closest to 300,000.

Name _____ Date _____

LEVEL 3



Follow every rule. Prove that your parts work by checking each rule in writing.

Split 1,000 into three different parts. Rule 1: Every part is a multiple of 25. Rule 2: The largest part is 450. Rule 3: The middle part is 150 more than the smallest part. Find all three parts and prove that they follow every rule. Then write one more three-part split of 1,000 that uses only Rule 1.

EVIDENCE TO USE

- Total: 1,000
- Multiples of 25: 25, 50, 75, 100, ...
- Largest part: 450
- Middle = smallest + 150

1. Find what the two smaller parts must add to.

[illegible]

2. Find the smallest part and the middle part.

A blank sheet of graph paper with a grid pattern. The grid consists of 10 columns and 10 rows of squares. The paper has rounded corners and a light gray background.

3. Write a different split that uses only Rule 1.

[illegible]

TRY IT • Find three different multiples of 25 that add to 500, where the largest part is 250.

1. Build-and-Compare Mystery Card

LEVEL 1

The mystery card is 3,402.

WORKED REASONING • Clue 1: 3,402, 3,420, and 4,023 are greater than 3,300. The cards 3,402 and 3,420 have 4 hundreds, which is more than 3 hundreds, and 4,023 has 4 thousands. The card 3,240 has only 2 hundreds, and 2,430 has only 2 thousands. Clue 2: 4,023 has 4 thousands, so it is not less than 4,000. That leaves 3,402 and 3,420. Clue 3: 3,402 has 0 tens, but 3,420 has 2 tens. The mystery number is 3,402. Frame: ___ is greater than ___ because it has more ___ in the ___ place.

WATCH FOR • Students who look only at the first digit may think every card that starts with 3 is the same size. They may also think a number with a 0 in it must be small. Ask them to find the greatest place where the digits differ and compare there.

TRANSFER • 6,590 is greater. The thousands and hundreds match (6 thousands and 5 hundreds), but 6,590 has 9 tens and 6,509 has 0 tens.

2. Bundle Count

LEVEL 1

34 bundles of 100 ($3,400 \div 100 = 34$). The same sticks make 340 bundles of 10.

WORKED REASONING • Each thousand is 10 hundreds, so 3 thousands = 30 hundreds. Add the 4 hundreds: $30 + 4 = 34$ hundreds. So $3,400 = 34$ hundreds, and $3,400 \div 100 = 34$ bundles. Each hundred is 10 tens, so 34 hundreds = 340 tens. Check: $34 \times 100 = 3,400$. Alternative: cover the last two digits of 3,400 to read the number of hundreds, 34. Frame: 3,400 is ___ hundreds because each thousand is ___ hundreds.

WATCH FOR • An answer of 4 shows that the student read only the hundreds digit. They did not count all the hundreds, including the 30 hundreds inside the 3 thousands.

TRANSFER • There are 52 tens in 520 and 29 hundreds in 2,900.

17. Ten-Times Detective

LEVEL 2

100 times ($4,000 \div 40 = 100$).

WORKED REASONING • The values are 4,000, 400, and 40. 4,000 is 10 times 400 because $400 \times 10 = 4,000$, and 400 is 10 times 40. So $4,000 = 40 \times 10 \times 10 = 40 \times 100$. Check: $4,000 \div 40 = 100$. Moving two places to the left multiplies by 10 two times, which is 100 times. Frame: The 4 in the ___ place is ___ times the 4 in the ___ place because it is ___ places to the left.

WATCH FOR • An answer of 20 suggests the student added 10 for each place instead of multiplying by 10. An answer of 'the same' suggests the student is looking at the digit, not at its place value.

TRANSFER • 10 times ($7,000 \div 700 = 10$).

18. Renaming Relay

LEVEL 2

There are 704 tens ($7,040 \div 10 = 704$), with 8 ones left over. Leg 1: 70 hundreds and 48 ones. Other true renamings (such as 69 hundreds and 148 ones) are also correct if the student checks them. Leg 3: 7 thousands and 48 ones.

WORKED REASONING • 7 thousands = 70 hundreds, and there are 0 more hundreds, so 7,048 has 70 hundreds. The rest is 48 ones, because $7,000 + 48 = 7,048$. For tens, write $7,048 = 7,040 + 8$. Since $7,040 \div 10 = 704$, there are 704 tens and 8 ones. Check: $704 \times 10 = 7,040$ and $7,040 + 8 = 7,048$. Frame: 7,048 is ___ tens and ___ ones because $___ \times 10 + ___ = 7,048$.

WATCH FOR • An answer of 4 tens reads only the tens digit. An answer of 74 tens skips the 0 in the hundreds place, which loses a place.

TRANSFER • 63 hundreds and 9 tens ($6,300 + 90 = 6,390$).

33. Closest-to-Target Digit Challenge

LEVEL 3

501,368 is closest. It is 1,368 away ($501,368 - 500,000 = 1,368$).

WORKED REASONING • Below 500,000, the first digit must be 3 because there is no 4 card. Make the number as large as possible: 386,510. Its distance is $500,000 - 386,510 = 113,490$. Above 500,000, start with 5 and make the rest as small as possible: 501,368. Its distance is $501,368 - 500,000 = 1,368$. Since $1,368 < 113,490$, 501,368 is closer. A number starting with 6 or 8 is at least 100,000 away, so no other number is closer. Frame: ___ is closer because its distance, ___, is less than ___.

WATCH FOR • Choosing 386,510 or 508,631 suggests the student matched only the first digit, or ordered the digits largest-first, without checking the distance in the remaining places.

TRANSFER • 297,410, which is 2,590 below 300,000. There is no 3 card, and the best number starting with 4 (401,279) is more than 100,000 away.

34. Constraint Decompositions

LEVEL 3

The parts are 200, 350, and 450 ($200 + 350 + 450 = 1,000$).

WORKED REASONING • The two smaller parts must add to $1,000 - 450 = 550$. Take away the extra 150: $550 - 150 = 400$. Split 400 equally: $400 \div 2 = 200$, which is the smallest part. The middle part is $200 + 150 = 350$. Check: $200 + 350 + 450 = 1,000$. Also $200 = 8 \times 25$, $350 = 14 \times 25$, $450 = 18 \times 25$, and $350 - 200 = 150$. Many splits work with only Rule 1, such as $100 + 400 + 500$. Frame: My parts are ___, ___, and ___. They add to ___, and each one is ___ $\times 25$.

WATCH FOR • An answer of 275 and 275 ignores the rule that the parts must differ by 150. An answer of 200, 350, and 500 forgets that the total must be exactly 1,000.

TRANSFER • Many answers work, such as $100 + 150 + 250$ or $25 + 225 + 250$. The two smaller parts must be different and must add to 250.