ROUNDING/ESTIMATION
GRADE 3-5

Teacher writes the word "rounding and estimation" on the board.

Students: Think, Pair, Share what they know about rounding and estimation.

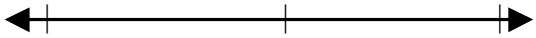
Teacher clarifies purpose and use of rounding and estimation with an emphasis on use of 10's, 100's or 1,000's, depending on what place we are rounding to."

Teacher, with student's choral response puts the multiples of 10, 100 and 1,000 on the board or chart paper (for future reference).

Rounding to the nearest		
ten	hundred	thousand
10	100	1,000
20	200	2,000
30	300	3,000
40	400	4,000
ect.		

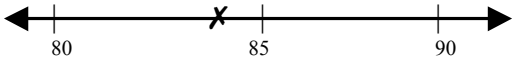
WE DO #1 Using a Number Line
Round 84 to the nearest ten.
Expand the number first to make identification of the tens place obvious using Choral Response.

84 = 80 + 4



Choral Response: Each end points on the number line.
Think, Pair, Share the midpoint of the line followed by choral response.

84 = 80 + 4



Choral Response: Which ten is the number 84 closer to?

WE DO #1 Using Traditional Method
(See following page for side-by-side model of number line and traditional method)

80 90

84

Use the jingle below to help students identify if you round up or down.

If it's 0 to 4 it's the same as before,
If it's 5 to 9 then take a climb.

WE DO #2 USING A NUMBER LINE
(See following page for side-by-side model of number line and traditional method)

Round the number 36 to the nearest 10 using a number line and the traditional method following same procedure as listed above.

RECIPROCAL TEACHING
Once you have gone over it as a class, students will then practice the method of "teach." Teacher will bring a student up to board and using the work shown in rounding the 36, will verbally explain to the student what was done to round the number 36, pointing to the work as explaining how work was done. Then in turn the student will become the teacher and explain again how the number 36 was rounded. After the practice of teach has been modeled, the teacher will allow students a chance to teach their shoulder partner acting as teacher, then switching roles to be the student. This process should take no longer than 5 minutes and may take some practice. Teacher should circulate and help students to articulate what was done.

YOU TRY #1
Round 67 to the nearest 10. Check for understanding
(See following page for side-by-side model of number line and traditional method)

YOU TRY #2
Round 23 to the nearest 10. Check for understanding.
(See following page for side-by-side model of number line and traditional method)

Teacher asks students to give a hand signal to show how confident they feel with rounding. Signal is for teacher only and thumb should be in front of chest not up in air for all to see.

Thumbs up, it is easy, I understand completely.
Thumbs sideways, I think I need a little more practice before I am ready to work on my own.
Thumbs down, I don't understand and I would like more practice.

Students will be given extra practice, showing both methods of rounding. Once students have demonstrated good practice and syntax in both methods of rounding, teacher can modify assignments to be only 1 method or the other and later give the students the choice of which method they would like to use.

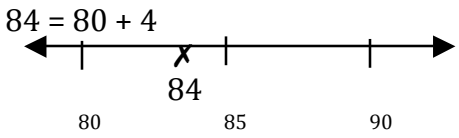
Same procedure can be used to teach rounding to nearest 100 and 1000.

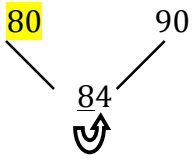
Lessons for Direct Instruction and "You Try" follow for:
Rounding 3 digits to nearest hundred and 4 digits to nearest thousand

ROUNDING TO THE NEAREST 10 WITH 2 DIGITS

WE DO #1

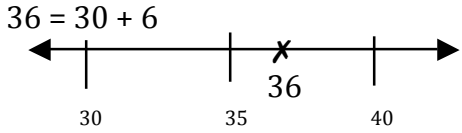
ROUND 84 TO THE NEAREST 10

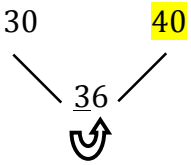




WE DO #2

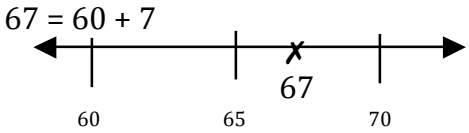
ROUND 36 TO THE NEAREST 10

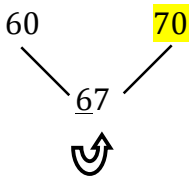




YOU TRY #1

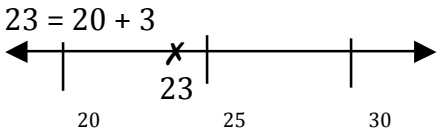
ROUND 67 TO THE NEAREST 10

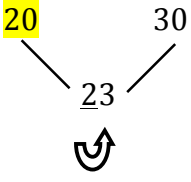




YOU TRY #2

ROUND 23 TO THE NEAREST 10

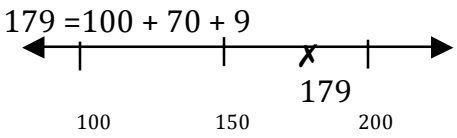


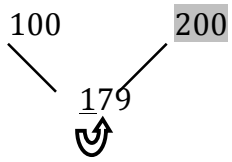


ROUNDING TO THE NEAREST 100 WITH 3 DIGITS

WE DO #1

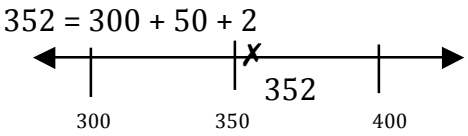
ROUND 179 TO THE NEAREST 100

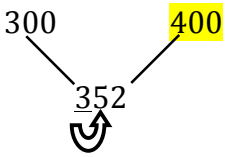




WE DO #2

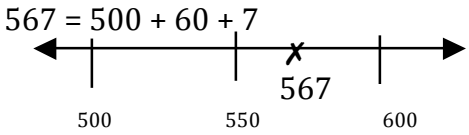
ROUND 352 TO THE NEAREST 100

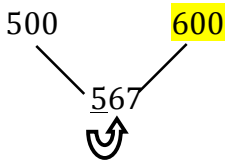




YOU TRY #1

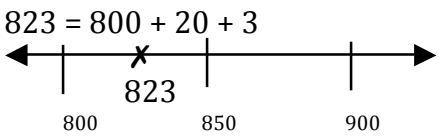
ROUND 567 TO THE NEAREST 100

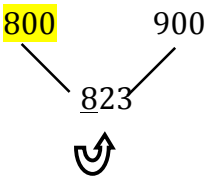




YOU TRY #2

ROUND 823 TO THE NEAREST 100

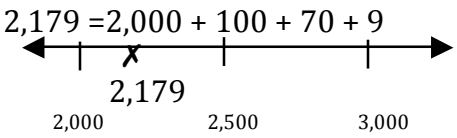


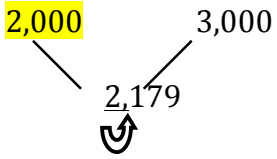


ROUNDING TO THE NEAREST 1000 WITH 4 DIGITS

WE DO #1

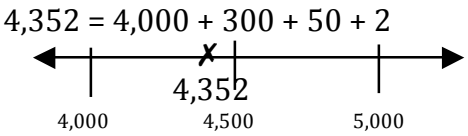
ROUND 2,179 TO THE NEAREST 1000

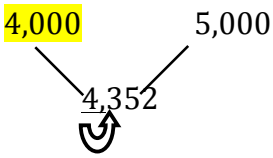




WE DO #2

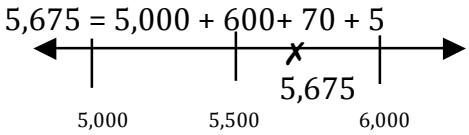
ROUND 4,352 TO THE NEAREST 1000

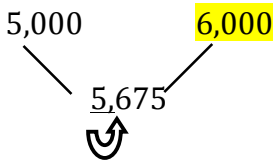




YOU TRY #1

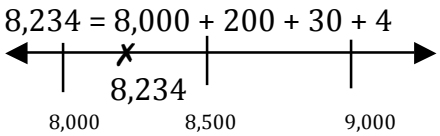
ROUND 5,675 TO THE NEAREST 1000

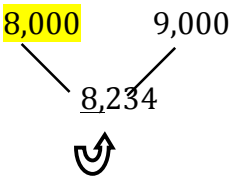




YOU TRY #2

ROUND 8,234 TO THE NEAREST 1000





Date _____

Warm-Up

Grade 3

CST/CAHSEE:	Review:
There are 36,874 people traveling to Mexico for the month of November. What digit is in the thousands place? A. 3 B. 4 C. 6 D. 8	Subtract $\begin{array}{r} 58 \\ -33 \\ \hline \end{array}$
Current:	**Other:**
Add $\begin{array}{r} 74 \\ +19 \\ \hline \end{array}$	$36 + \square = 18 + 18$

Today's Objective/Standards: Rounding to the nearest 10

Date _____

Warm-Up

Grade 4

CST/CAHSEE:	Review:
11.3×2.7 = **A.** 29.31 **B.** 29.51 **C.** 30.31 **D.** 30.5	Add 3 ways: $\begin{array}{r} 236{,}907 \\ +248{,}001 \\ \hline \end{array}$

Current:	Other:
What is 38,708 rounded to the nearest ten?	$30{,}720 \div 30 =$

Today's Objective/Standards:

Date _____

Warm-Up

Grade 5

CST/CAHSEE:	Review:
Last year the theater spent $7,625. This year the theater will spend $9910. How much more is the theater spending this year? A. $2285 B. $2315 C. $2325 D. $2395	Which expression represents the product of m and 30? A. $30m$ B. $30 - m$ *C.* $30 + m$ D. $30 \div m$
Current:	**Other:**
What value for y makes the following equation true? $5 \times 13 = (5 \times 10) + (5 \times y)$ A. 3 B. 5 C. 10 D. 13	Add 3 ways: $34,857$ $+23,496$

Today's Objective/Standards:

ROUNDING/ESTIMATION #2
3 digits to nearest 10
4 digits to nearest 100
5 digits to nearest 1,000
GRADE 3-5

Teacher writes the word "rounding and estimation" on the board.

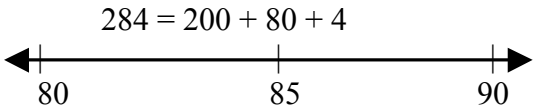
Students: Think, Pair, Share what they know about rounding and estimation.

Teacher clarifies purpose and use of rounding and estimation with an emphasis on use of 10's, 100's or 1,000's, depending on what place we are rounding to."

Teacher, with student's choral response puts the multiples of 10, 100 and 1,000 on the board or chart paper (for future reference).

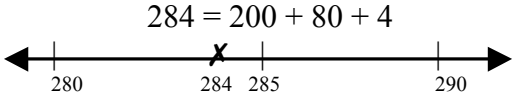
Rounding to the nearest		
ten	hundred	thousand
10	100	1,000
20	200	2,000
30	300	3,000
40	400	4,000
	etc.	

WE DO #1 Using a Number Line
Round 284 to the nearest ten.
Expand the number first to make identification of the tens place obvious using Choral Response.



When first setting up the number line put only the tens on it and the midpoint, i.e. 80, 85, 90. Once students see the tens place on the number line go back and add the hundreds place clarifying that 280 is 28 tens and 290 is 29 tens (may need to do a quick re-teach on how hundreds are made up of tens.).

Choral Response: Each end point on the number line.
Think, Pair, Share the midpoint of the line.



Choral Response: Which ten is the number 284 closer to?

WE DO #1 Using Traditional Method
(See following page for side-by-side model of number line and traditional method)

280 290

284

Use the jingle below to help students identify if you round up or down.

If it's 0 to 4 it's the same as before,
If it's 5 to 9 then take a climb.

WE DO #2 USING A NUMBER LINE
(See following page for side-by-side model of number line and traditional method)

Round the number 436 to the nearest 10 using a number line and the traditional method following steps same procedure as prior.

RECIPROCAL TEACHING
Once you have gone over it as a class, students will then practice the method of "teach." Teacher will bring a student up to board and using the work shown in rounding the 436, will verbally explain to the student what was done to round the number 436, pointing to the work as explaining how work was done. Then in turn the student will become the teacher and explain again how the number 436 was rounded. After the practice of teach has been modeled, the teacher will allow students a chance to teach their shoulder partner acting as teacher, then switching roles to be the student. This process should take no longer than 5 minutes and may take some practice. Teacher should circulate and help students to articulate what was done.

YOU TRY #1
Round 567 to the nearest 10. Check for understanding
(See following page for side-by-side model of number line and traditional method)

YOU TRY #2
Round 823 to the nearest 10. Check for understanding.
(See following page for side-by-side model of number line and traditional method)

Teacher asks students to give a hand signal to show how confident they feel with rounding. Signal is for teacher only and thumb should be in front of chest not up in air for all to see.

Thumbs up, it is easy, I understand completely.
Thumbs sideways, I think I need a little more practice before I am ready to work on my own.
Thumbs down, I don't understand and I would like more practice.

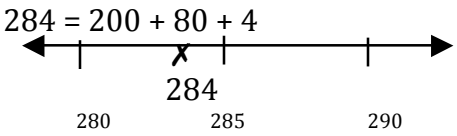
Students should be given extra practice, showing both methods of rounding in a side by side model. Once students have demonstrated good practice and syntax in both methods of rounding, teacher can modify assignments to be only 1 method or the other and later give the students the choice of which method they would like to use.

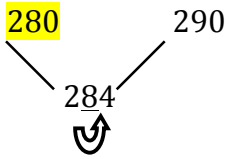
Lessons for Direct Instruction and "You Try" follow for:
Rounding 4 digits to nearest hundred and 5 digits to nearest thousand

ROUNDING TO THE NEAREST 10 WITH 3 DIGIT NUMBRS

WE DO #1

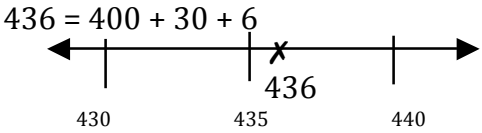
ROUND 284 TO THE NEAREST 10

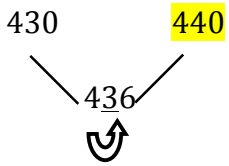




WE DO #2

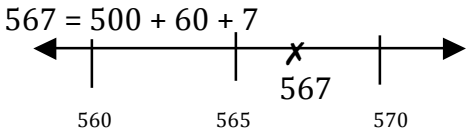
ROUND 436 TO THE NEAREST 10

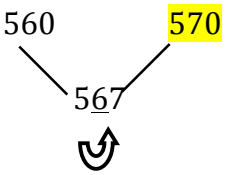




YOU TRY #1

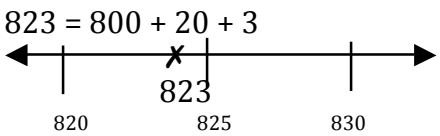
ROUND 567 TO THE NEAREST 10

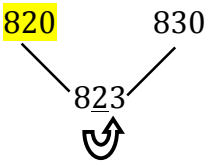




YOU TRY #2

ROUND 823 TO THE NEAREST 10

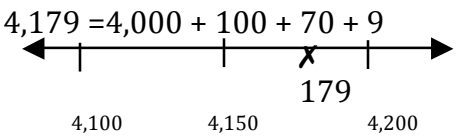


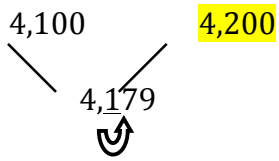


ROUNDING TO THE NEAREST 100 WITH 4 DIGIT NUMBERS

WE DO #1

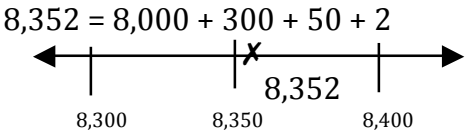
ROUND 4,179 TO THE NEAREST 100

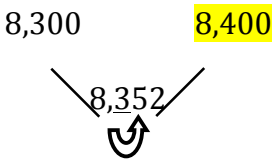




WE DO #2

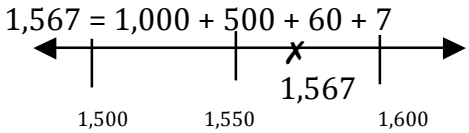
ROUND 8,352 TO THE NEAREST 100

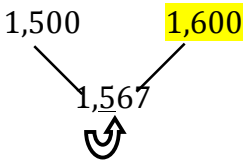




YOU TRY #1

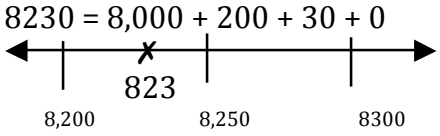
ROUND 1,567 TO THE NEAREST 100

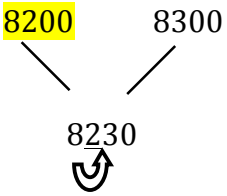




YOU TRY #2

ROUND 8230 TO THE NEAREST 100



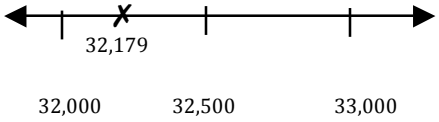


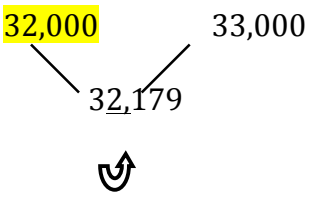
ROUNDING TO THE NEAREST 1000 WITH 5 DIGIT NUMBERS

WE DO #1

ROUND 32,179 TO THE NEAREST 1000

32,179 =30,000 +2000 + 100 + 70 + 9

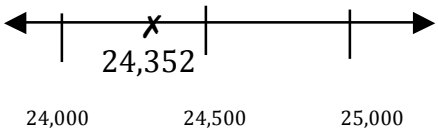


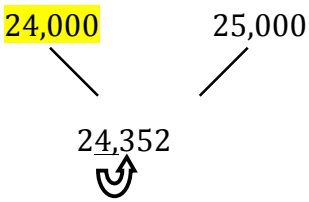


WE DO #2

ROUND 24,352 TO THE NEAREST 1000

24,352 = 20,000 + 4000 + 300 + 50 + 2

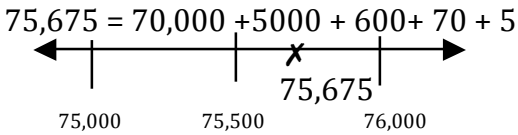


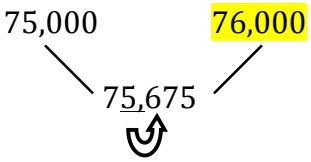


YOU TRY #1

ROUND 75,675 TO THE NEAREST 1000

75,675 = 70,000 +5000 + 600+ 70 + 5

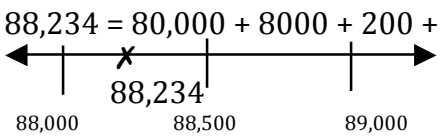


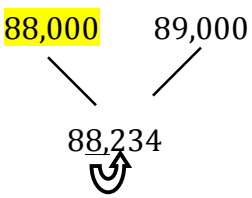


YOU TRY #2

ROUND 88,234 TO THE NEAREST 1000

88,234 = 80,000 + 8000 + 200 + 30 + 4





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Warm-Up

Grade 3

CST/CAHSEE:	Review:
There are 36,874 people traveling to Mexico for the month of November. How do you write 36,874 in word form? A. Thirty-six, eight hundred seventy-four. B. Thirty six hundred, eight hundred seventy-four. C. three six eight seven four D. Thirty-six thousand, eight hundred seventy-four.	Round 456 to the nearest ten.
Current:	**Other:**
Add $\begin{array}{r} 748 \\ +\,195 \\ \hline \end{array}$ three ways	$3{,}006 + 121 = 121 + \square$

Today's Objective/Standards:

Date _____

Warm-Up

Grade 4

CST/CAHSEE:	Review:
Which of these is the number 5,005,014? **A** five million, five hundred, fourteen **B** five million, five thousand, fourteen **C** five thousand, five hundred, fourteen **D** five billion, five million, fourteen	Write the number 7,915,878 in word form.
Current:	**Other:**
Round 5,862 to the nearest ten.	Estimate the sum by rounding to the nearest 10. $\begin{array}{r} 5,323 \\ -\ 2,611 \\ \hline \end{array}$

Today's Objective/Standards:

Date _____

Warm-Up

Grade 5

CST/CAHSEE:	Review:
What will make this number sentence true? 3 + 6 + 4 = 3 + 4 + ? A. 2 B. 3 C. 4 D. 6	Prime factorize the number 360.
Current:	**Other:**
Round 56,789 to the nearest hundred.	Amanda planted a square garden with sides of 8 feet. Find the area.

Today's Objective/Standards: