Estimation to solve + X ÷ decimals

5.3A Student applies mathematical process standards to develop & use strategies and methods for **DO IT:** positive rational #'s computations in order to solve problems with efficacy and accuracy

Standard and Student Expectations
This is where SE TEK is typed and verbs along with other important vocab are circled and identified.
Students can estimate to determine solutions to mathematical & real word problems involving decimals and + − X ÷

Academic vocabulary for the standard(including language of assessment):
Using STAAR and other assessments, pull academic tier 1,2,3 vocabulary necessary for mastery.

Know	Show (verbs /actions)
Include any prerequisite skills necessary for mastery - Front-End method Round 1st digit change the rest to 0's - Rounding - round to a common place then calculate - Reasonable answer's Quotient sum product difference Accurate + proficient - Students can + − X ÷ without Estimation	Estimate - reasonable Does your answer make sense? - Students can round to any place value. - Curious - Evaluate whats important - Students will show their estimated numbers ex: 8.37 X 2.76 8.37 ≈ 8 × 2.76 ≈ 3 24 9 | 81.9 81.9 ≈ 81 ÷ 9 ≈ 9 9 compatable #'s - Closest means a reasonable answer

Assessment questions stems/ Examples/Analyze & discuss

Which is best estimate

which amount is closest

approximate

** this is where teachers type or write out actual stems used on tests.. DO NOT COPY AND PASTE IN, ACTUALLY TYPE THEM IN WHILE DISCUSSING WITH TEAM.

***focus intentionally on using language of standard and progress to mastery ***

Guided Discourse questions based on standard:

Plan questioning for guided discourse in class based on the stems above.

PROGRESSION

Learning Targets				
LT One	**LT Two**	**LT Three**	**LT Four**	**LT Five**
I can use estimation to solve + with decimals problems	I can use estimation to solve − with decimals problems	I can use estimation to solve × with decimals problems	I can use estimation to solve ÷ with decimals problems	

Reteach plan learning targets /objectives				
LT 1	**LT2**	**LT3**	**LT 4**	**LT5**
I can estimate to solve + of decimals after teacher estimates	I can estimate to solve — of decimals after teacher estimates	I can estimate to solve × of decimals after teacher estimates	I can estimate to solve ÷ of decimals after teacher estimates	

Cycle 1 ➳ *Day 1*

Extend learning plan:

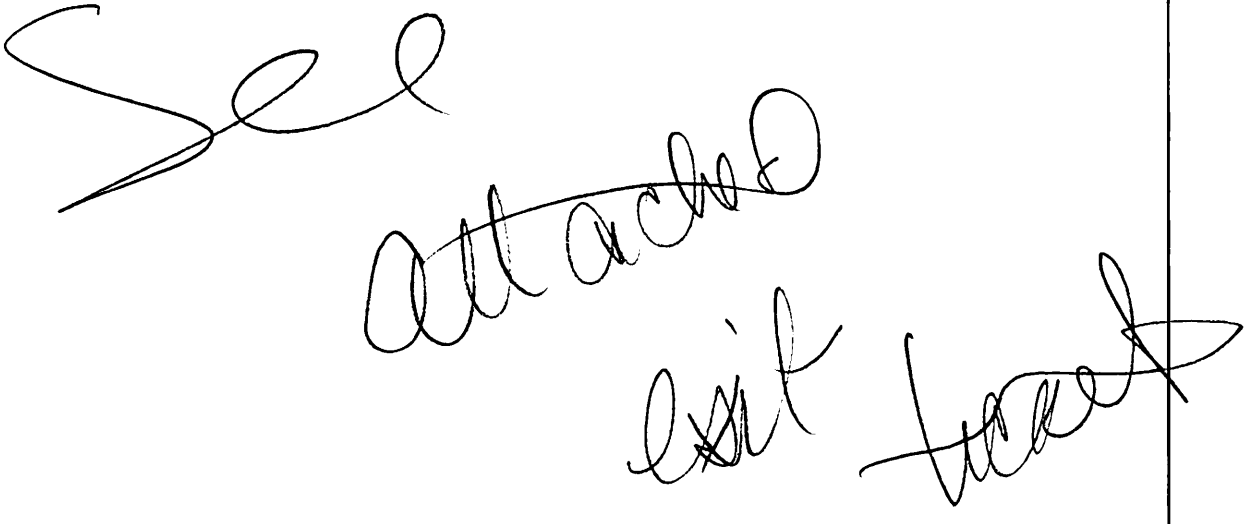
- Plan an enrichment or extended learning lesson. Always plan for those who will get it right away and needed extended learning or enrichment.

- Students will round to determine estimation amount.
- Students will roll dice to create a problem then use estimation to solve.
- Students will use sales add and dice to determine operation then use estimation to solve.

Cycle 1 ↣ *Day 2*

Exit tickets:

You can paste or include exit tickets here.



Success Criteria-derived from Show part of know/show

-Rubric , what are the components that if done to mastery, you can ensure success

Not item specific.

Novice - can NOT estimate

Apprentice - student can estimate but can only solve + −

Proficient - student can estimate but can solve only 2 of 4 operations

Distinguished - student can estimate and solve × ÷ − +

× ÷ whole numbers

5.3A Estimate to Solve Exit ticket Day 2

Learning target: I can estimate to determine the solutions to math problems involving multiplication and division.

1. Explain in your own words how to solve a division or multiplication problem using estimation. Remember we show not tell in math.

2. Tickets for the movies cost $11 for each adult ticket and $8 for each child ticket. If 89 adults and 534 children bought tickets for the movies, which amount is closest to the total money made in movie tickets?

3. Jay went to the store 7 times and bought 13 toy cars each time. He spent a total of $99 including tax, for all the toy cars. What is the best estimate of the cost of each toy car?

4. The cost of a school spirit shirt is $12 for each adult shirt and $10 for each child shirt. If 97 adults and 89 children bought a spirit shirt, which amount is closest to the total money made on spirit shirts?

x ÷ ∘ Whole numbers

5.3A Estimate to Solve Exit ticket

Learning target: I can estimate to determine the solutions to math problems involving multiplication and division.

1. Explain in your own words how to solve a division or multiplication problem using estimation. Remember we show not tell in math.

2. Tickets for the carnival cost $11 each. If 189 adults and 684 children bought tickets for the carnival, which amount is closest to the total money made in carnival tickets?

3. Jay went to the store and bought 188 toy cars. He spent a total of $398 including tax, for all the toy cars. What is the best estimate of the cost of each toy car?

4. The cost of a school spirit shirt is $14 each. If 147 adults and 389 children bought a spirit shirt, which amount is closest to the total money made on spirit shirts?

Student can estimate to determine solution to mathematical and real-world problems involving + − × ÷ whole numbers and ·/·

DO IT:

Standard and Student Expectations
Tek 5.3A Number & Operations. The student applies mathematical processes standards to develop & use strategies and methods for positive rational numbers computations in order to solve problems with efficiacy & accuracy.

Academic vocabulary for the standard(including language of assessment): **Using STAAR AND OTHER ASSESSMENTS, PULL ACADEMIC TIER 1,2,3 VOCABULARY NECESSARY FOR MASTERY.**

Know	Show (verbs /actions)
Include any prerequisite skills necessary for mastery Front End Method- round 1st digit change the rest to 0's. Compensation - adjust an estimate to get a closer calculation. Rounding - Round to a common place then calculate. Reasonable answer. Compatable numbers- Quotient dividend Product divisor factor	- Students can round to any place value - CUBES - Students can multiply without estimation - Students can divid wout estimation - Closest means a reasonable answer.

Assessment questions stems/ Examples/Analyze & discuss .Focus intentionally on using language of standard and progress to mastery-Guided Discourse questions based on standard:

which amount is closest
What is the best estimate

PROGRESSION

Learning Targets				
LT One	**LT Two**	**LT Three**	**LT Four**	**LT Five**
I can use estimation to solve multiplication problems (whole numbers only)	I can use estimation to solve division problems			

Reteach plan learning targets /objectives				
LT 1	**LT2**	**LT3**	**LT 4**	**LT5**
I can estimate while numbers to the greatest place value	I can estimate to solve multiplication with teacher help	I can estimate to solve division with teacher help		

Extend learning plan:

Students will practice rounding to determine an estimation amount.

Students will create their own estimation division problem with answer key and challenge students

Students will creat ~~their~~ own estimation multiplication problem with answer key and challenge peers

Students will roll dice to create a x or ÷ problem then use estimation to solve.

Exit tickets:

See attached sheet ↪

Success Criteria-derived from Show part of know/show

(not item specific)

Novice - can not round or estimate

Apprentice - student can round to estimate but can't solve ÷ or x

Proficient - student can round to estimate and can solve X or ÷

Distinguished - student can round to estimate and can solve X and ÷ problems.