Table of Contents

General Description of the Assessment ........................................................................................................4

Administering the ORAL Math Assessment ...............................................................................................7

Section I – Oral Counting ...........................................................................................................................9

Grade 1 – Oral Counting ...............................................................................................................................9

 Task A – Counting back objects ..................................................................................................................9

Grade 2 – Oral Counting .............................................................................................................................10

 Task A – Finding and Using a Pattern to count mentally an organized array .............................................10

Grade 3 – Oral Counting .............................................................................................................................12

 Task A – Counting backward by 10 from nonstandard starting point .......................................................12

Grade 4 – Oral Counting .............................................................................................................................13

 Task A – Counting by 100’s from nonstandard starting point .....................................................................13

 Task B - Counting by 9’s from a nonstandard starting point .......................................................................14

Grade 5 – Oral Counting .............................................................................................................................17

 Task A – Counting backward by 100 from nonstandard starting point .....................................................17

 Task B – Counting backward by 9 ...............................................................................................................18

 Task C – Counting backward by ½ from a whole number crossing a century mark .................................19

Grade 6 – Oral Counting .............................................................................................................................20

 Task A – Counting by 7’s from a nonstandard starting point ......................................................................20

 Task B Doubling Sequence – starting at 2-digit number ............................................................................22

 Task C Counting forward using fractions ..................................................................................................23

Grade 7 – Oral Counting .............................................................................................................................24

 Task A – Counting backwards by three tenths from a nonstandard starting point .....................................24

 Task B – Crossing zero counting backwards by 12 from a two-digit number ............................................25

Grade 8 – Oral Counting .............................................................................................................................27

 Task A – Grade 8 – Counting by seven tenths from a nonstandard starting point .....................................27

 Task B – Grade 8 – Halving Sequence – starting at 4-digit number ............................................................28

Section II - Oral Math Calculations .............................................................................................................30

Grade 1 Oral Math Calculations ..................................................................................................................30

 Task A – Finding Difference (Comparative Models) ..................................................................................30

 Task B - Making 5- missing part! .................................................................................................................31

Grade 2 Oral Math Calculations ..................................................................................................................32
Grade 6 Oral Math Calculations

Task A – Finding Compatibles

Task B – Addition using Applied to Multiples of Ten

Task C – Quick Addition

Grade 5 Oral Math Calculations

Task A – Compensation

Task B – Quick Subtraction

Task C – Count On/ Count Back

Task D – Front End Place Value

Grade 4 Oral Math Calculations

Task A – Finding Compatibles (Make 10)

Task B – Finding Compatibles (Make 1000)

Task C – Quick Addition

Task D – Front End Addition

Task E – Break Up and/or Bridge

Task F – Compensation

Grade 5 Oral Math Calculations

Task A – Compensation (whole numbers)

Task B – Compensation (Mixed Numbers)

Task C – Quick Subtraction

Task D – Repeated Halving

Task E – Count On/Count Back

Task F – Partial Quotients

Task G – Front End Subtraction

Grade 6 Oral Math Calculations

Task A – Finding Compatibles (Make 100)

Task B – Finding Compatibles (Make 1000)

Task C – Quick Addition

Task D – Front End Addition (whole numbers)

Task E – Front End Addition (mixed numbers)

Task F – Break Up and/or Bridge

Task G – Compensation (whole #’s)

Task H – Compensation (rational #’s)

Task I – Halving and Doubling
Section III – Problem Solving

Grade 1 – Problem Solving ................................................................. 97
Grade 2 – Problem Solving ................................................................. 97
Grade 3 – Problem Solving ................................................................. 98
Grade 4 – Problem Solving ................................................................. 98
Grade 5 – Problem Solving ................................................................. 99
Grade 6 – Problem Solving ................................................................. 99
Grade 7 – Problem Solving ................................................................. 100
Grade 8 – Problem Solving ................................................................. 100

Task J – Front End Multiplication or Distributive Principle ............................................. 73
Grade 7 Oral Math Calculations ........................................................................ 75
  Task A – Compensation (Rational Numbers) .................................................... 75
  Task B – Compensation (Mixed Numbers) ....................................................... 76
  Task C – Compensation (Integers) ................................................................... 78
  Task D – Quick Subtraction (Rational Numbers) .............................................. 79
  Task E – Repeated Halving ............................................................................. 80
  Task F – Front End Subtraction (Integers) ....................................................... 81
  Task G – Partial Quotients ............................................................................. 83
Grade 8 Oral Math Calculations ........................................................................ 84
  Addition ........................................................................................................ 84
  Task A – Finding Compatibles (Make 10 000) ................................................ 84
  Task B – Finding Compatibles (Make 1.0) ....................................................... 85
  Task C – Quick Addition ................................................................................ 87
  Task D – Break Up and / or Bridge ................................................................ 88
  Task E – ‘Halving and Doubling’ ................................................................... 90
  Task F – Quick Multiplication ....................................................................... 91
  Task G – ‘Front End Multiplication or Distributive Principle’ ......................... 92
  Task H – Compensation .............................................................................. 93
  Task I – Decomposition of Factors ............................................................... 95
FLBSD ORAL Math Assessment

General Description of the Assessment

Section I – Oral Counting
(Whole Numbers / Rational Numbers (Fractions / Decimals) / Standard / Non Standard Counting Numbers / Standard / Non Standard Starting Points)

Section II – Mental Calculations with an Oral Explanation
(Operation - Addition / Multiplication) (Whole Numbers / Rational Numbers (Fractions / Decimals) / Mixed Numbers)

Section III – Problem Solving with an Oral Explanation
(Operation - Addition / Subtraction / Multiplication) (Whole Numbers / Rational Numbers (Fractions / Decimals) / Mixed Numbers)

Grade Levels Assessed

- All grades 1 – 8

Math Skills / Knowledge Assessed in Section I & II

- Forward Counting (by one / multiplies)
- Addition
- Subtraction
- Multiplication
- Division
- Whole Numbers / Rational Numbers (decimals and fractions)
- Applying strategies to problem solve

Math Skills / Knowledge Assessed in Section I

- Problem Solving
- Applying number sense to a problem

Assessment Times

- On-going throughout the school year

Reporting Times

- Interim progress report for school administrator Jan. 31th
- Final report – beginning June to the school division

Formative Assessment

Classroom based Assessment

- Section I and II - classroom teacher created, using the parameters within the assessment document
- Section I – created divisional
- All sections administered by the classroom teacher
• All sections evaluated by the classroom teacher

Assessments are designed to assess student’s strategies and understanding of number relationships when calculating mentally (without a physical tool) by applying their number sense.

• The assessment is designed to be ‘Oral Presentation’ by students of the thoughts / ideas / understanding

The following are acceptable examples of how an oral presentation of student responses could be completed...

• One on one interview with classroom teacher
• Observation of student conversations with other students
• Written explanation of their thoughts. (Please see example below)
  (Please note – using this method it is important that students ‘write what they are thinking’)
• Audio recording of a student response

Example...

Question: 0.28 + 0.44 = 0.72

Student’s Response (in writing)

I used the compensation strategy. I took two hundredths from the forty-four hundredths and added it to the twenty-eight hundredths. That makes the number equation way easier. The new equation would be thirty hundredths add forty-two hundredths. Thirty hundredths and forty-two hundredths is seventy hundredths. Then I added the two hundredths to the seventy hundredths to get seventy-two hundredths.
Data Reports

- Classroom Summary Report will be provided to school administration by the classroom teacher by the end of January and May each school year.
- School administrator will collate all school data into three spreadsheets: Basic Facts/Oral Math/Problem Solving and forward to the Student Assessment Coordinator by June 15th.
- The student assessment coordinator will collate all FLBSD schools results and forward a FLBSD Summary Report to the Superintendent of FLBSD Schools by June 30th of the school year. This summary will be shared with FLBSD Trustees at prior to the end of September of the following school year.
- Standardized electronic spreadsheets to enter the data will be provided to the classroom and schools to generate their reports. The goal of the school division will be to use CLEVR program to store the data and generate reports when it becomes available.

Specific Goals for this program

- This assessment will initiate a minimum 10 minutes of class time per day dedicated to ORAL math practice and skill development
- Create a classroom data source from which classroom teacher can base decisions upon for instruction.
- Create a divisional data source from which to base decisions upon.
- To initiate more spiraling of learning outcomes. To create less ‘one and done’ learning opportunities of specific skills.
- Provide opportunities for students to orally explain their understanding / strategy / the number relationships – not just provide an answer!
- Increase student’s math vocabulary!
- To grow students’ mathematical processes
  - Communication
  - Connections
  - Mental Mathematics and Estimation
  - Problem Solving
  - Reasoning
Administering the ORAL Math Assessment

- FLBSD Mental Math Assessment is designed for teachers to gain data and plan instruction on student’s abilities to perform strategies for solving math problems orally.
- This assessment is designed to extract data, from the student, regarding their understanding of how numbers relate to other numbers, the patterns and relationships in our number system and how the place value system is organized. In other words, their ‘number sense’. As well, how a student than can use those relationships to help make sense of numbers in using ways to calculate efficiently – without the use of a tools such as pencil/paper or technology.

- FLBSD Oral Math Assessment is designed to stimulate lessons where students have opportunities to grow their mathematical process. Specifically, Communication (C) and Mental Mathematics and Estimation (ME).
- FLBSD Oral Math Assessment, Section I and II are classroom based / teacher created according to criteria set out in this document. They are administered and evaluated by the classroom teacher.
- FLBSD Mental Math Assessment, Section I will be divisional created assessment, administered and evaluated by the classroom teacher.
- A teacher can choose their method for administering the assessment.
  - Specific one on one interview with a student.
  - Observation of a discussion between students
  - Student journaling – explaining how they solved / understood how they solved the question
    - Video or audio journaling
    - Written journaling
- It is important to note the correct answer is important but equally as important, is the explanation given as to how the answer was arrived at.
- This assessment should be ongoing throughout the school year.
• Teachers are encouraged to use their judgment as to when specific students are assessed for FLBSD report.
  ✓ Suggested Examples…
  - **Student A** – identified as a struggling student is only assessed in June after he / she has had the school year to work on and practice their understanding. Report results from only the June results
  - **Student B** – identified as a successful student during the fall of the school year this student has successful showed understanding of the mental math skills in FLBSD assessment – assessed in January – successfully achieved the criteria – they are not required to be reassessed in June – report results from only the January assessment.
  - **Student C** – identified as an unknown student – during the fall of the school year you are not sure of he / she understands – assessed in January – data collected – plan is developed – assessed in June – report results from June and January results

• Teachers are encouraged to keep the following model in mind when planning and assessing students Mental Math abilities.
Section I – Oral Counting

Grade 1 – Oral Counting

Task A – Counting back objects

A) Description of task…
   a. Student is given a set of 15 counters. They are to physically count back the items to the instructor.
   b. This is designed not as a pencil and paper task or worksheet. The task is for students to count physical items.
   c. Teacher tells the student that there are 15 counters and student is instructed to count back the set to prove that there are 15.

B) Instructions given to students
   a. Your job is to prove that there are 15 counters. You need to talk out loud so I know what you’re thinking. **You have to count backwards.** Count the set back to me.

C) Look for and listen for …
   a. One to one correspondence
   b. Correct backwards sequence

D) Assessment
   a. Yes / No – to successfully achieve this outcome they must achieve both of the criteria below
      i. To achieve task students must display the ability to count back to find the **correct amount**
      ii. The student must use correct vocabulary
      iii. To achieve task must orally explain an efficient **strategy they used**
Grade 2 – Oral Counting

Task A – Finding and Using a Pattern to count mentally an organized array.

A) Description of task…
   a. Student is to orally count 100 counters (counters can be any item) organized in a 10 by 10 array.
   b. This task is designed not as a pencil and paper task or worksheet. The task is for students to count physical items. Students cannot touch the items. If students touch a counter redirect and let them try again by starting over. Students should be encouraged to talk out loud to describe how they are completing the assessment task.
      i. Suggestion to keep all the counters the same in each of the row – i.e. the row has all red counters or every second row is a different color or a different type counter.

B) Instructions Given to the Students…
   a. Your job is to find out how many counters there in front of you!
   b. You need to talk out loud to show your strategy / what you are thinking!
   c. Do NOT instruct the student to a specific strategy – By reminding a student ‘that counting by multiples is more efficient’ and/or ‘remember to look for a pattern’ it will not allow this assessment task to determine if the student will independently use an efficient strategy to count. (Example counting by 5 or 10 or a multiple of 10 is more efficient than counting by 1 or 2’s).

C) Look for / listen for…
   a. One to one correspondence
   b. Can they conserve their count?
   c. Can they find the pattern and use the pattern to count to find the total?
      i. Do they realize that the counters are organized in rows of 10?
      ii. Do they count by 1 until they reach 20 or 30 and then start to count by 10?
   d. Do they move a body part – their hand in the air / nod their head / tap their foot to keep track of their counts. You may wish to make a note of this observation.

D) Assessment
   a. Yes / No – to successfully achieve this outcome they must achieve both of the criteria below
      i. To achieve task students must display the ability to count to find the correct amount
      ii. To achieve task must orally explain an efficient strategy they used
         1. The student recognizes and counts by multiples of 5’s or 10’s.
         2. Please note the counting by 2’s is not considered an efficient strategy for this task.
         3. Starts their count by counting the counters individually or by multiples of 2 until they find a pattern – than counts by a multiple of five or ten to correctly identify 100 counters the student has achieved task.
a. Example…

*Student begins by counting each counter individually. As they are counting in the 3rd row they realize when they reach counter 27 that the counters are in rows of ten. The student finishes counting to the end of the row by ones than finishes the count by multiplies of 10, or stops counting by ones begins counting by multiplies of ten starting at 30 or returns to the start of the array and begins to count by multiplies of 10. These are all acceptable.*
Grade 3 – Oral Counting

Task A – Counting backward by 10 from nonstandard starting point

A) Description of task…
   a. Student is to orally count backwards
      i. Starting number at a 3-digit nonstandard number
      ii. Repeating the counts until the century mark is crossed.
   b. This is an oral assessment.
   c. The starting number of the sequence and the counting number are visually provided to the student.
   d. Students are NOT to write the numbers down as they say them as part of the assessment.

B) Instructions Given to the Students…
   a. Provide student a starting number, written in standard form, place in front of the student
      i. Example – use a number such as 387
   b. Instruct students to count backwards by 10’s until they cross the century mark.
   c. When the student stops counting, if they have not provided a reason – ask the student…
      i. “Why they choose to stop at that number?”
   d. If a student does not recognize when to stop, you may need to instruct them to stop.
      i. Ask the student to explain, “What they believe a century mark is?”
      ii. If the student recognizes they have made an error use your professional judgment as to whether or not, they are given another opportunity.

C) Look for / listen for…
   a. Does the student correctly count backward the sequence – making sure they have not missed a number in the sequence - using the correct language
      i. Three hundred eighty-seven
      ii. Make sure they do not miss a number when they cross the century mark
         1. Make sure they are not…
            a. using the word ‘and’ (three hundred and eighty-seven)
            b. just saying the names of the digits (three-eight-seven)
            c. saying all the names of the place values (three hundred eight tens seven units)

D) Assessment
   a. Yes / No – to successfully achieve this outcome they must achieve both of the criteria below
      i. To achieve task students must display the ability to count backwards orally to find the correct amount
         1. Using the appropriate vocabulary as described above.
      ii. To achieve task, the student must orally explain why they chose to stop their count.
Grade 4 – Oral Counting

Task A – Counting by 100’s from nonstandard starting point

A) Description of task…
   a. Student is to orally count
      i. Starting number at a 4-digit nonstandard number
      ii. Counting by 3-digit standard number
      iii. Repeating the counts until the millennium mark is crossed.
   b. This is oral assessment.
   c. The starting number of the sequence and the counting number are visually provided to the student.
   d. Students are NOT to write the numbers down as they say them as part of the assessment.

B) Instructions Given to the Students…
   a. Provide student a starting number, written in standard form, place in front of the student
      i. Example – use a number such as 4568
   b. Instruct students to count by 100’s until they cross the millennium mark.
   c. When the student stops counting, if they have not provided a reason – ask the student…
      i. “Why they choose to stop at that number?”
   d. If a student does not recognize when to stop, you may need to instruct them to stop.
      i. Ask the student to explain, “What they believe a millennium mark is?”
      ii. If the student recognizes they have made an error use your professional judgment as to whether or not, they are given another opportunity.

C) Look for / listen for…
   a. Does the student correctly count the sequence – making sure they have not missed a number in the sequence - using the correct language
      i. Four thousand five hundred sixty-eight or forty-five hundred sixty-eight
      ii. Make sure they do not miss a number when they cross the millennium mark ...
      "four thousand nine hundred sixty-eight … five thousand one hundred sixty-eight – Student missed five thousand sixty-eight."
         1. Make sure they are not…
            a. using the word ‘and’ (four thousand five hundred and sixty-eight)
            b. just saying the names of the digits (forty-five sixty-eight)
            c. saying all the names of the place values (four thousand five hundred six tens eight units)
   b. Do they use the word thousands for the next number in the sequence (4668 – four thousand six hundred sixty-eight) or do they use word hundreds to describe the amount of thousands correctly (4668 – forty-six hundreds sixty-eight.)
   c. Do they recognize when they cross the millennium mark (four thousand nine hundred sixty-eight ; Five thousand sixty-eight) or (forty – nine hundred sixty–eight ; fifty hundred sixty – eight)
   d. Do they correctly identify the millennium mark that immediately follows the starting number. (4568 the next 1000 number or multiple of 1000 after 4568 is 5000)
e. Listen for the word and when number is said – 4568 – four thousand five hundred and sixty-eight – please discourage the use of the word and to say whole numbers – if a student completes all other task and uses the and consider the student has achieved the outcome – but note they need to work on this skill

D) Assessment
a. Yes / No – to successfully achieve this outcome they must achieve both of the criteria below
   i. To achieve task students must display the ability to count orally to find the correct amount
      1. Using the appropriate vocabulary as described above.
   ii. To achieve task must orally explain why they choose to stop their count.
      1. Possible student response…
         a. I choose to stop at five thousand one hundred sixty-eight. The starting number is four thousand five hundred sixty-eight. I know it comes between four thousand and five thousand. As soon as I reached five thousand I knew I crossed the next millennium mark.
         b. I know millennium marks are the thousand numbers. If I count by thousands and I start at zero, the first millennium mark is one thousand than two thousand and so on. I know that the starting number is after four thousand but not yet to five thousand so I knew to stop counting as soon as I cross the five thousand. That’s why I stopped at five thousand sixty-eight. Just so you know that my last number that I said is only sixty-eight away from five thousand.

Task B - Counting by 9’s from a nonstandard starting point
A) Description of task…
   a. Student is to orally count
      i. Starting number is a 2-digit or 3-digit nonstandard number
      ii. Counting by single digit nonstandard number
      iii. Repeating the counts until the century mark is crossed
   b. This is oral assessment.
   c. The starting number of the sequence and the counting number are visually provided to the student.
   d. Students are NOT to write the numbers down as they say them as part of the assessment.
B) Instructions Given to the Students…
   a. Provide students a starting number written in standard form, in front of the student
      i. Example – use a number such as 33
   b. Instruct students to count by 9’s until they cross the century mark.
   c. Instruct students to ‘think out loud’ in order to hear what strategy they are using.
   d. When the student stops counting, if they have not provided a reason – ask the student…
i. “Why did you choose to stop at that number?”

e. If a student does not recognize when to stop, you may need to instruct them to stop.
i. Ask the student to explain, “What they believe a century mark is?”
ii. If the student recognizes they have made an error use your professional judgment as to whether or not, they are given another opportunity.

C) **Look for / Listen for…**

a. Does the student correctly count the sequence – making sure they have not missed a number in the sequence - using the correct language
i. Make sure they do not miss a number when they cross the century mark … eighty-three ; ninety-three ; one hundred thirteen – Student missed one hundred three
   1. Make sure they are not...
      a. using the word ‘and’ (one hundred and three)
      b. just saying the names of the digits (one zero three)
      c. saying all the names of the place values (one hundred zero tens three units)

b. Do they recognize when they cross the century mark

c. Do they correctly identify the century mark that immediately follows the starting number? (33 the next 100 number after 33 is 100)
d. Do they use an efficient strategy to identify how they found the next number in the sequence?
e. Look for inefficient strategies
   i. Look for what a student is counting by especially if it’s by 1’s – look for a student mouthing the words / using their fingers / tapping their feet.
   ii. In their explanation using the standard algorithm
      1. Student explains thirty-three add nine – I added the three and nine that makes twelve and I carried the one from the twelve and added it to the three and that makes four and then I put the four and the two together to make forty-two.

D) **Assessment**

a. Yes / No –
   i. To successfully achieve this outcome, they must count correctly in the sequence.
   ii. They must use correct vocabulary
   iii. They must correctly explain why they choose to stop their count. Identifying the century mark that immediately follows the starting number.
      1. Possible Student Responses
         a. I stopped at five hundred four because the starting number is four hundred sixty-four and it comes between four hundred and five hundred. Five hundred four is the first number in my counting sequence that is greater than five hundred.
         b. They correctly explained an efficient strategy to identify the next number in the sequence
            i. Efficient Student responses to look for…
1. 333 the next number is 342 – 9 is one less than 10 – I added 10 to 333 that’s 343 and one less is 342 (strategy – compensation strategy // 10 less 1 strategy)

2. 333 the next number is 342 – 333 and 7 is 340 and 340 and 2 more is 342 – 7 and 2 make 9 (strategy – Make 10 strategy // Part / Part / Whole strategy)
Grade 5 – Oral Counting

Task A – Counting backward by 100 from nonstandard starting point

A) Description of task…
   a. Student is to orally count
      i. Starting number at a 4-digit nonstandard number
      ii. Counting backwards by 100
      iii. Repeating the counts until the millennium mark is crossed.
   b. This is an oral assessment.
   c. The starting number of the sequence and the counting number are visually provided to the student.
   d. Students are NOT to write the numbers down as they say them as part of the assessment.

B) Instructions Given to the Students…
   a. Provide student a starting number, written in standard form, place in front of the student
      i. Example – use a number such as 4787
   b. Instruct students to count backwards by 100’s until they cross the millennium mark.
   c. When the student stops counting, if they have not provided a reason – ask the student…
      i. “Why did you choose to stop at that number?”
   d. If a student does not recognize when to stop, you may need to instruct them to stop.
      i. Ask the student to explain, “What they believe a millennium mark is?”
      ii. If the student recognizes they have made an error use your professional judgment as to whether or not, they are given another opportunity.

C) Look for / listen for…
   a. Does the student correctly count the sequence – making sure they have not missed a number in the sequence - using the correct language
      i. Four thousand seven hundred eighty-seven
      ii. Make sure they do not miss a number when they cross the millennium mark
         1. Make sure they are not…
            a. using the word ‘and’ (four thousand seven hundred and eighty-seven)
            b. just saying the names of the digits (four-seven- eight-seven)
            c. saying all the names of the place values (four thousands, seven hundreds, eight tens seven units)

D) Assessment
   a. Yes / No – to successfully achieve this outcome they must achieve both of the criteria below
      i. To achieve task students must display the ability to count backwards orally to find the correct amount
         1. Using the appropriate vocabulary as described above.
      ii. To achieve task, the student must orally explain why they chose to stop their count.
Task B – Counting backward by 9

A) Description of task…
   a. Student is to orally count
      i. Starting number at a 3-digit nonstandard number
      ii. Counting backwards by 9
         iii. Repeating the counts until the century mark is crossed.
   b. This is an oral assessment.
   c. The starting number of the sequence and the counting number are visually provided to the student.
   d. Students are NOT to write the numbers down as they say them as part of the assessment.

B) Instructions Given to the Students…
   a. Provide student a starting number, written in standard form, place in front of the student
      i. Example – use a number such as 478
   b. Instruct students to count backwards by 9’s until they cross the century mark.
   c. When the student stops counting, if they have not provided a reason – ask the student…
      i. “Why did you choose to stop at that number?”
   d. If a student does not recognize when to stop, you may need to instruct them to stop.
      i. Ask the student to explain, “What they believe a century mark is?”
      ii. If the student recognizes they have made an error use your professional judgment as to whether or not, they are given another opportunity.

C) Look for / listen for…
   a. Does the student correctly count the sequence – making sure they have not missed a number in the sequence - using the correct language
      i. Four hundred seventy-eight
      ii. Make sure they do not miss a number when they cross the century mark
         1. Make sure they are not…
            a. using the word ‘and’ (four hundred and seventy-eight)
            b. just saying the names of the digits (four-seven-eight)
            c. saying all the names of the place values (four hundred, seven tens eight units)

D) Assessment
   a. Yes / No – to successfully achieve this outcome they must achieve both of the criteria below
      i. To achieve task students must display the ability to count backwards orally to find the correct amount
         1. Using the appropriate vocabulary as described above.
      ii. To achieve task, the student must orally explain why they chose to stop their count.
FLBSD ORAL Numeracy Assessment

Task C – Counting backward by $\frac{1}{2}$ from a whole number crossing a century mark

A) Description of task…
   a. Student is to orally count
      i. Starting number at a three-digit whole number (ex. 105 or 304)
         NOTE: Starting numbers should be less than 10 away from the century.
      ii. Counting backwards by $\frac{1}{2}$.
      iii. Repeating the counts until the century mark is crossed.
   b. This is an oral assessment.
   c. The starting number of the sequence and the counting number ($\frac{1}{2}$) may be visually provided to the student.
   d. Students are NOT to write the numbers down as they say them as part of the assessment.

B) Instructions Given to the Students…
   a. Provide student a starting number, written in standard form, place in front of the student
      i. Example – use a number such as 39 ¼
   b. Instruct students to count backwards by $\frac{1}{2}$ s until they cross the decade mark.
   c. When the student stops counting, if they have not provided a reason – ask the student…
      i. “Why did you choose to stop at that number?”
   d. If a student does not recognize when to stop, you may need to instruct them to stop.
      i. Ask the student to explain, “What they believe a decade mark is?”
      ii. If the student recognizes they have made an error use your professional judgment as to whether or not, they are given another opportunity.

C) Look for / listen for…
   a. Does the student correctly count the sequence – making sure they have not missed a number in the sequence - using the correct language
      i. Thirty-nine and a one quarter or thirty-nine and one forth
      ii. Make sure they do not miss a number when they cross the century mark
         1. Make sure they are not…
         a. Describing the fraction as one over four

D) Assessment
   a. Yes / No – to successfully achieve this outcome they must achieve both of the criteria below
      i. To achieve task students must display the ability to count backwards orally to find the correct amount
         1. Using the appropriate vocabulary as described above.
      ii. To achieve task, the student must orally explain why they chose to stop their count.
Grade 6 – Oral Counting

Task A – Counting by 7’s from a nonstandard starting point

A) Description of task…
   a. Student is to orally count
      i. Starting number is a 3 or 4-digit nonstandard number
      ii. Counting by single digit nonstandard number
      iii. Repeating the counts until the century mark is crossed.
   b. This is oral assessment.
   c. The starting number of the sequence and the counting number are visually provided to the student.
   d. Students can write down, as they say the next number in the sequence but instructed to NOT write any other numbers or calculations down – all other information should be completed orally.

B) Instructions Given to the Students
   a. Provide students a starting number written in standard form, place in front of the student
      i. Example use a number such as 1657
   b. Instruct students to count by 7’s until they cross the century mark.
   c. Instruct students to ‘think out loud’ in order to see what strategy they are using.
   d. When the student stops counting, if they have not provided a reason – ask the student…
      i. “Why did you choose to stop at that number?”
   e. If a student does not recognize when to stop, you may need to instruct them to stop.
      i. Ask the student to explain, “What they believe a century mark is?
      ii. If the student recognizes they have made an error use your professional judgments as to whether or not the student is given another opportunity.

C) Look for / listen for…
   a. Does the student correctly count the sequence – making sure they have not missed a number in the sequence - using the correct language
      i. Make sure they do not miss a number when they cross the century mark … one thousand six hundred ninety-seven; one thousand seven hundred seventeen – Student missed one thousand seven hundred seven
         1. Make sure they are NOT…
            a. Using the word ‘and’ (one thousand six hundred and ninety-seven)
            b. Just saying the names of the digits (one six nine seven)
            c. Saying all the names of the place values (one thousand six hundred nine tens seven units)
   b. Do they correctly recognize when they cross the century mark?
   c. Do they correctly identify the century mark that immediately follows the starting number? (1657 the next 100 number after 1657 is 1700)
   d. Do they use an efficient strategy to identify how they found the next number in the sequence?
   e. Look for inefficient strategies.
f. Watch for a student counting on by 1’s – look for a student mouthing the words / using their fingers / tapping their feet.
g. In their explanation using the standard algorithm
   i. Student explains one thousand six hundred fifty-seven add seven – I added sevens that makes fourteen and I carried the one and added it to the five and that makes six and then I put it all together to make one six six four.

D) Assessment
   a. Yes / No –
      i. To successfully achieve this outcome, they must count correctly in the sequence.
      ii. They must use correct vocabulary
      iii. They must correctly explain why they choose to stop their count. Identifying the century mark that immediately follows the starting number.
         1. Possible Student Responses…
            a. The first ‘hundred number’ after sixteen hundred fifty-seven is seventeen hundred. When I counted to seventeen hundred seven I was seven greater than seventeen hundred and so it’s the first ‘hundred number’ after my starting number.
            b. I know that the starting number comes between one thousand six hundred and one thousand seven hundred – there for I stopped as soon as I crossed the one thousand seven hundred mark – that number was one thousand seven hundred seven.
      iv. They correctly explained an efficient strategy to identify the next number in the sequence.
         1. If the student does not provide an oral explanation during their counting either stop them during their count to orally explain their strategy or after they have finished counting their sequence pull out a section and have them explain it to you. Please use your professional judgment to how many example you wish for the student to provide. It is not an expectation they explain each count.
         2. Efficient Student responses to look for
            a. One thousand six hundred fifty-seven and the next number is one thousand six hundred sixty-four – seven is three less than ten – I added ten to one thousand six hundred fifty-seven that’s one thousand six hundred sixty-seven and three less than that number is one thousand six hundred sixty-four (strategy – compensation strategy // 10 less 3 strategy)
            b. One thousand six hundred fifty-seven – the next number is one thousand six hundred sixty-four – one thousand six hundred fifty-seven and three more is one thousand six hundred sixty and one thousand six hundred sixty and four more is one thousand six
hundred sixty-four – because three and four more make seven (strategy – bridging through multiple of ten)
c. One thousand six hundred fifty-seven and the next number is one thousand six hundred sixty-four – seven units and seven units make fourteen units – fourteen units added too one thousand six hundred fifty makes one thousand six hundred sixty-four. (strategy - using know basic fact)

**Task B Doubling Sequence – starting at 2-digit number**

A) **Description of task…**
   a. Student is to orally count
      i. Starting number is 2-digit nonstandard number
      ii. Counting activity - double previous in the sequence
      iii. Student counts until instructor informs them to stop
         1. Have student count until they come to a number that requires them to complete more than one step. (example 960 – 900 doubled is 1800 and 60 doubled is 120 – 1800 and 120 is 1920)

B) **Instructions Given to the Students…**
   a. Provide students a starting number written in standard form in front of the student
      i. Example – use a number such as 15
   b. Instruct students to double the number until you tell them to stop.
   c. Instruct students to ‘think out loud’ in order to see what strategy they are using.
   d. Instruct the student to explain how they double a number that requires regrouping
      ii. 12 – 24 – 48 – 96

C) **Look for / listen for…**
   a. Does the student correctly double the previous number in the sequence – making sure they have not missed a number in the sequence - using the correct language
   b. Do they use an efficient strategy to identify how they found the next number in the sequence?
   c. Look for inefficient strategies
      i. In their explanation are they trying to use the standard algorithm
         1. Possible Student Response…
            a. Forty-eight doubled is well eight doubled is sixteen and carry the one to tens column and four doubled is eight and the one the I carried is nine so than nine and eight make ninety-six

D) **Assessment**
   a. Yes / No –
      i. To successfully achieve this outcome, they must count correctly in the sequence.
      ii. They must use correct vocabulary
      iii. Efficient Student responses to look for
1. Forty-eight double is ninety-six – forty doubled is eighty and eight doubled is sixteen – eighty and sixteen is ninety-six (Front End Addition)
2. Twelve hundred eighty doubled is twenty-five hundred sixty because twelve hundred doubled is twenty-four hundred and eighty doubled is one hundred sixty there for twenty-four hundred and one hundred sixty is twenty-five hundred sixty

**Task C Counting forward using fractions**

**A) Description of task…**
- a. Student is to orally count
  - i. Starting number is any whole number less than 10.
  - ii. Counting activity – count forward using thirds, quarters or fifths.
  - iii. Repeating the counts until the next whole number in the sequence is reached.
- b. This is an oral assessment.
- c. The **starting number** of the sequence and the **counting number** are visually provided to the student.
  - i. Start at 3 and count forward by \( \frac{3}{4} \).

1. Three and three quarters, four and two quarters, five and one quarter, six

**B) Instructions Given to the Students**
- a. Provide students a starting number written in standard form, place in front of the student
  - i. Example use a number such as 5.
- b. Instruct students to count by thirds or quarters or fifths until they reach the next whole number in the sequence.
- c. Instruct students to ‘think out loud’ in order to see what strategy they are using.
- d. When the student stops counting, if they have not provided a reason – ask the student…
  - i. “Why did you choose to stop at that number?”
- e. If a student does not recognize when to stop, you may need to instruct them to stop.
  - i. Ask the student to explain, “What they believe the next whole number would be?”
  - ii. If the student recognizes they have made an error use your professional judgments as to whether or not the student is given another opportunity.

**C) Look for / listen for…**
- a. Does the student correctly count the sequence – making sure they have not missed a number in the sequence - using the correct language.
- b. Do they correctly recognize when they reach the next whole number?
- c. Do they use an efficient strategy to identify how they found the next number in the sequence?
- d. Look for inefficient strategies.

**D) Assessment**
- a. Yes / No –
  - i. To successfully achieve this outcome, they must count correctly in the sequence.
  - ii. They must use correct vocabulary
Grade 7 – Oral Counting

Task A – Counting backwards by three tenths from a nonstandard starting point

A) Description of task…
   a. Student is to orally count
      i. Starting number is a non-standard number that ends in the tenths
      ii. Counting by non-standard number in the tenths
      iii. Repeating the counts until the decade mark is crossed.
   b. This is oral assessment.
   c. Students can write down, as they say them, the next number in the sequence but instructed to NOT write any other numbers or calculations down – all other information should be completed orally.

B) Instructions Given to the Students
   a. Provide students a starting number written in standard form in front of the student
      i. Example – use a number such as 24.6
   b. Instruct students to count by 3/10 until they cross the decade mark.
   c. Instruct students to ‘think out loud’ in order to see what strategy they are using.
   d. When the student stops counting, if they have not provided a reason – ask the student…
      i. “Why they choose to stop at that number?”
   e. If a student does not recognize when to stop, you may need to instruct them to stop.
      i. Ask the student to explain, “What they believe a decade mark is?”
      ii. If the student recognizes they have made an error use your professional judgment as to whether or not, they are given another opportunity.

C) Look for / listen for…
   a. Does the student correctly count the sequence – making sure they have not missed a number in the sequence - using the correct language
      i. Twenty-four and six tenths; twenty-four and three tenths;
      ii. Twenty-four and six out of ten; twenty-five and three out of ten
      iii. Twenty-four wholes and six tenths; twenty-five wholes and three tenths
         1. Make sure they are NOT using …
            a. Twenty-four-point six
            b. Twenty-four decimal six
            c. Two four-point six
            d. Twenty-four and six tens
   b. Do they correctly cross the decade mark?
   c. Do they correctly identify the decade mark that immediately follows the starting number? (24.6 the next decade or ‘10 number’ after 24.6 is 30)
   d. Do they use an efficient strategy to identify how they found the next number in the sequence?
   e. Look for inefficient strategies
      i. What for a student counting on by 1’s – look for a student mouthing the words / using their fingers / tapping their feet.
      ii. In their explanation using the standard algorithm
1. Student explains twenty-four point six and point seven what I did was add
the seven and the six that makes thirteen than I carried the one and added it
to the four and that makes five and then two five and three together to make
twenty-five-point three

D) Assessment
   a. Yes / No –
      i. To successfully achieve this outcome, they must count correctly in the sequence.
      ii. They must use correct vocabulary
      iii. They must correctly explain why they choose to stop their count.
         1. Possible student responses…
            a. I know my starting number twenty-four and six tenths comes
               between twenty and thirty – those are the multiplies of ten – as soon
               as I crossed the thirty mark I knew to stop because thirty and two
tenths was the first number that was greater than thirty in the
sequence.
            iv. They correctly explained an efficient strategy to identify the next number in the
sequence.
               1. Efficient Student responses to look for
                  a. Twenty-four and six tenths the next number is twenty-five and three
tenths – seven tenths is three tenths less than one whole – so I added
one whole to twenty-four and six tenths that’s twenty-five and six
tenths but that’s three tenths to many so took off three tenths from
twenty-five and six tenths and that’s twenty-five and three tenths
(strategy – compensation strategy)
                  b. Twenty-four and six tenths and the next number is twenty-five and
three tenths because if I add four tenths from the seven tenths to
twenty-four and six tenths that makes twenty-five wholes and
twenty-five wholes and three tenths left from the seven tenths gives
me twenty-five and three tenths

Task B – Crossing zero counting backwards by 12 from a two-digit number

A) Description of task…
   a. Student is to orally count
      i. Starting number is a two-digit number that is less than 50 (ex. 46)
      ii. Counting backwards by 12
      iii. Repeating the counts until we have a 2-digit negative value (ex. 46, 34, 22, 10,
-2, -14)
   b. This is an oral assessment.
c. Students can write down, as they say them, the next number in the sequence but instructed to NOT write any other numbers or calculations down – all other information should be completed orally.

B) Instructions Given to the Students
a. Provide students a starting number written in standard form in front of the student
   i. Example – use a number such as 46
b. Instruct students to count by 12 backwards until they reach a two-digit negative value.
c. Instruct students to ‘think out loud’ in order to see what strategy they are using.

C) Look for / listen for…
a. Does the student correctly count the sequence – making sure they have not missed a number in the sequence - using the correct language (using the term NEGATIVE and not MINUS).

D) Assessment
a. Yes / No –
   i. To successfully achieve this outcome, they must count correctly in the sequence.
   ii. They must use correct vocabulary
Grade 8 – Oral Counting

Task A – Grade 8 – Counting by seven tenths from a nonstandard starting point

A) Description of task…
   a. Student is to orally count
      i. Starting number is a non-standard number that ends in the tenths
      ii. Counting by non-standard number in the tenths
      iii. Repeating the counts until the decade mark is crossed.
   b. This is oral assessment.
   c. Students can write down, as they say them, the next number in the sequence but instructed to NOT write any other numbers or calculations down – all other information should be completed orally.

B) Instructions Given to the Students
   a. Provide students a starting number written in standard form in front of the student
      i. Example – use a number such as 24.6
   b. Instruct students to count by 7/10 until they cross the decade mark.
   c. Instruct students to ‘think out loud’ in order to see what strategy they are using.
   d. When the student stops counting, if they have not provided a reason – ask the student…
      i. “Why they choose to stop at that number?”
   e. If a student does not recognize when to stop, you may need to instruct them to stop.
      i. Ask the student to explain, “What they believe a decade mark is?”
      ii. If the student recognizes they have made an error use your professional judgment as to whether or not, they are given another opportunity.

C) Look for / listen for…
   a. Does the student correctly count the sequence – making sure they have not missed a number in the sequence - using the correct language
      i. Twenty-four and six tenths; twenty –five and three tenths
      ii. Twenty-four and six out of ten; twenty-five and three out of ten
      iii. Twenty-four wholes and six tenths; twenty-five wholes and three tenths
         1. Make sure they are NOT using …
            a. Twenty-four-point six
            b. Twenty-four decimal six
            c. Two four-point six
            d. Twenty-four and six tens
   b. Do they correctly cross the decade mark?
   c. Do they correctly identify the decade mark that immediately follows the starting number? (24.6 the next decade or ‘10 number’ after 24.6 is 30)
   d. Do they use an efficient strategy to identify how they found the next number in the sequence?
   e. Look for inefficient strategies
      i. What for a student counting on by 1’s – look for a student mouthing the words / using their fingers / tapping their feet.
      ii. In their explanation using the standard algorithm
1. Student explains twenty-four point six and point seven what I did was add the seven and the six that makes thirteen than I carried the one and added it to the four and that makes five and then two five and three together to make twenty-five-point three

D) Assessment
a. Yes / No –
   i. To successfully achieve this outcome, they must count correctly in the sequence.
   ii. They must use correct vocabulary
   iii. They must correctly explain why they choose to stop their count.
      1. Possible student responses…
         a. I know my starting number twenty-four and six tenths comes between twenty and thirty – those are the multiplies of ten – as soon as I crossed the thirty mark I knew to stop because thirty and two tenths was the first number that was greater than thirty in the sequence.
      iv. They correctly explained an efficient strategy to identify the next number in the sequence.
         1. Efficient Student responses to look for
            a. Twenty-four and six tenths the next number is twenty-five and three tenths – seven tenths is three tenths less than one whole – so I added one whole to twenty-four and six tenths that’s twenty-five and six tenths but that’s three tenths to many so took off three tenths from twenty-five and six tenths and that’s twenty-five and three tenths (strategy – compensation strategy)
            b. Twenty-four and six tenths and the next number is twenty-five and three tenths because if I add four tenths from the seven tenths to twenty-four and six tenths that makes twenty-five wholes and twenty-five wholes and three tenths left from the seven tenths gives me twenty-five and three tenths

Task B – Grade 8 – Halving Sequence – starting at 4-digit number
A) Description of task…
   a. Student is to orally count
      i. Starting number is 4-digit standard number
      ii. Count by cutting the previous number sequence by half
      iii. Repeating the counts until they reach a mixed number
   b. This is an oral assessment
   c. The starting number of the sequence is visually provided.
   d. The goal of the task is for students complete this task orally – however in your professional judgment if the student can complete the task by adapting – writing each number as they orally say the number – the instructor should use their professional judgment in deciding.
B) Instructions Given to the Students
   a. Provide students a starting number written in standard form in front of the student – use a number such as 1200
   b. Instruct students to half the number until they reach a mixed number.
   c. Instruct students to ‘think out loud’ in order to see what strategy they are using.
   d. Instruct the student to explain how they half a number – especially the first odd number
      i. 1200 – 600 – 300 – 150 – 75 – 32.5
      ii. 360 – 180 – 90 – 45 – 22 ½ - 11 ¼
      iii. 1000 – 500 – 250 – 125 – 62 ½ - 31 ¼

C) Look for / listen for…
   a. Does the student correctly half the previous number in the sequence – making sure they have not missed a number in the sequence - using the correct language
   b. Do they use an efficient strategy to identify how they found the next number in the sequence.
   c. Look for inefficient strategies
      i. In their explanation they are trying to use the long division algorithm

D) Assessment
   a. Yes / No
      i. To successfully achieve this outcome, they must count correctly in the sequence.
      ii. They must use correct vocabulary.
      iii. They must correctly explain why they choose to stop their count at a mixed number.
      iv. They correctly explained an efficient strategy to identify the next number in the sequence.
      v. Efficient Student responses to look for
         1. Three hundred sixty is three hundred plus sixty – Half of three hundred is one hundred fifty and half of sixty is thirty – one hundred fifty –plus the sixty equals one hundred eighty (Break Apart & Put Back Together)
         2. Three hundred sixty is thirty-six tens and thirty-six tens split in half is eighteen tens and that’s one hundred eighty
      vi. One hundred twenty-five is one hundred twenty and five – Half of one hundred twenty is sixty and half of five is two and half – there for sixty and two and half is sixty-two and half (Break Apart & Put Back Together)
Section II - Oral Math Calculations

Grade 1 Oral Math Calculations

Task A – Finding Difference (Comparative Models)

A) Description of task…
   a. Students are given the same visual models for a pair of numbers that are ten or less. Students are asked to state the amount of difference between the 2 models.
   b. Note - this assessment task please do not use number symbols.
   c. Suggested visual models
      i. Power of Ten Cards
      ii. Finger pattern cards
      iii. Tally marks
      iv. Row/tower of blocks (provide the row of blocks for the students – do not have them build the row of blocks to save time)
   d. If the student choses to count the items on the cards please allow them.
   e. Sample Questions

         i. 

         ii. 

         iii. 

         iv. 

B) Instructions Given to the Students
   a. Provide the students the visual models.
   b. Ask the student to ‘please tell me the amount of difference between the two models (pictures).

C) Look for / listen for …
   a. Possible Student Responses…
      i. The difference between the two cards is five.
      ii. The difference is seven is five less than two
      iii. The difference is two is five more than seven

D) Assessment
   a. Scale is … Yes / No
      i. To successfully achieve this outcome, they must achieve the criteria below…
1. Provide the correct DIFFERENCE
2. They must use the correct vocabulary

**Task B - Making 5 - missing part!**

A) **Description of task...**
   a. Students are shown a number that is five or less in standard form.
   b. Student is asked ‘what amount is missing to make 5?’
   c. If the student chooses to count forward to 5 or backward from 5 that is acceptable and should be noted.
   d. Use these types of question
      i. 3 – what is the missing part to make five?
      ii. 5 – what is the missing part to make five?
      iii. 0 – what is the missing part to make five?

B) **Instructions Given to the Students**
   a. Provide the number in visually to the student in standard form
   b. Ask the student to give the missing part that would make five from the number shown.

   Note - Be sure to ask “what amount is missing” instead of “how much more”! This will help students to be sure they are working backwards from 5.
Grade 2 Oral Math Calculations

Task A – Finding Compatibles

A) Description of task...

a. Description of the strategy - This strategy for addition involves looking for pairs of numbers that combine to make 10 or a multiple of 10. The term finding friendly numbers is used to describe this strategy.
   i. Single digit whole numbers
   ii. Maximum number of numbers in the string is 5
   iii. At least 4 of the numbers are compatibles that make 10
   iv. Use these types of questions
      1. \[3 + 8 + 9 + 1 + 7 = \]
      2. \[\square = 9 + 1 + 4 + 5 + 6\]
      3. Sum of \(2 + 4 + 6 + 5 + 8\) is \[

B) Instructions Given to the Students

a. Provide the students a visual representation of the number equation
   i. Examples…
      1. Number equation could be written on a white board for entire class
      2. Presented on a SMART Board for entire class
      3. Paper worksheet – specific to a student
      4. Written on the desk – specific to a student
      5. Written on an individual white board – specific to a student
b. Instruct students to solve the equation by finding the SUM using an efficient/easy strategy.
   i. Note – do not direct the students or imply to the students to use the specific strategy of ‘Finding 10’ – an important part of the assessment is to decide if a student will identify the numbers in the equation will be best suited for a specific strategy.
   c. Instruct students they will need to explain how they found the SUM orally.
   d. Instruct students if they need to write any information down to help them keep track of the steps they are encouraged to do so…Please note – do not provide them what information they are to write down… Redirect with ‘Think of things that will help make it easier to find the SUM’.
      i. Examples of information a student may use.
         1. Circle the pairs that make ten
         2. Cross out the pair of numbers that make ten and write down the sub total
         3. Draw a line from one number to its friendly partner that makes ten.

C) Look for / listen for …

a. Possible Student Responses…
   i. Three and seven make ten and nine and one make another ten. Then if I add the two tens together that’s twenty and plus the eight more left from the question that makes twenty-eight. The sum of the string of numbers is twenty-eight.
ii. I know if I find numbers that make ten it will be easier … I saw that a one, four and five and I know that’s ten – that left nine add six in the number equation that’s fifteen. When I add subtotal of ten and fifteen it is twenty-five. The sum of that string of five numbers is twenty-five.

\[
\begin{array}{c}
\text{I. } 25 = (9+1) + (5+6) \\
10 + 10 = 20 + 25
\end{array}
\]

b. Students writing numbers into an algorithm to calculate – this is considered an efficient strategy. Students who solve the equation using this strategy should be redirected to making tens.

\[
\begin{array}{c}
\text{1. } 25 = 9 + 1 + 5 + 6
\end{array}
\]

D) Assessment

a. Scale is … Yes / No

i. To successfully achieve this outcome, they must achieve the criteria below…

1. Provide the correct SUM
2. They must use the correct vocabulary
3. Correctly explained an efficient strategy

   a. See student responses for examples

Task B – Addition using Applied to Multiples of Ten

A) Description of task…

a. Description of the strategy - This strategy for addition involves applying student’s knowledge in recalling the basic facts and applying that knowledge to multiples of ten. Understanding the pattern numbers have.

   i. Two digit whole numbers
   ii. Multiples of ten
   iii. \#0 + \#0 = \#0
iv. Sum 100 or less
v. Use these types of questions
   1. 40 + 30 =
   2. 20 + 70 =
   3. 50 + 30 =

B) Instructions Given to the Students...
   a. Provide students an ORAL representation of the number equation
      i. Examples...
         1. The SUM of forty added to thirty is?
         2. Forty added to thirty equals what?
         3. Forty and thirty equals what?
         4. Forty and thirty more is the same as what?
         5. The SUM of forty increased by thirty is equal to what?
         6. The total SUM of forty plus thirty is?
         7. What is the SUM of forty combined with thirty?
         8. If we combine forty and thirty what is the total?
      ii. Instruct the students to provide the SUM to the number equation
      iii. Instruct the student to orally explain how they know their answer is correct / accurate

C) Look for / listen for...
   a. Possible Student Response
      i. I know our units and three units are 7 units – that mean four tens and three tens must be seven tens and seven tens are seventy. There for forty and thirty are seventy.
      ii. Student response – forty and thirty is seventy because four and three is seven and so if make four ten times greater its forty and if you make three ten times greater its thirty so to make the equation balanced you need to make seven ten times greater which is seventy.
   b. Students who know the correct sum but cannot explain the relationship to the basic fact will be consider to not have achieved the task.
      i. Forty added to thirty is seventy because it’s like four and seven you just have to add zeros. (Students knows the ‘trick’ to provide the correct SUM – Teacher redirect – Why does adding a zero work?)
      ii. If students provide an explanation of why if works – connecting to each number has to increase by a factor of ten and in order to keep the equation balanced, you have to increase all the numbers by the same factor that would be considered successful.

D) Assessment
   a. Scale is... Yes / No
      i. To successfully achieve this outcome, they must achieve the criteria below...
         1. Provide the correct SUM
         2. They must use the correct vocabulary
3. Correctly explain the relationship between the basic fact and the equation with addends that are greater by a factor of ten.
   a. See student responses for examples

**Task C – Quick Addition**

**A) Description of task...**

a. *Description of the strategy - This strategy for addition involves applying student’s knowledge in recognizing that addends in the number equation do not require regrouping therefore calculating the SUM is less difficult. This strategy will also rely on student understanding the value of each digit in the number to correctly use the math vocabulary to explain their understanding.*

   i. Two - Two digit whole numbers
   ii. The digit zero is not used in either number
   iii. Sum 100 or less
   iv. ## + ## <= 100
   v. Use these types of questions
      1. 55 + 23 = ?
      2. ? = 36 + 43
      3. 22 + 76 = ?

**B) Instructions Given to the Students**

a. Provide the students a VISUAL representation of the number equation
   i. Examples...
      1. Number equation could be written on a white board for entire class
      2. Presented on a SMART Board for entire class
      3. Paper worksheet – specific to a student
      4. Written on the desk – specific to a student
      5. Written on an individual white board – specific to a student

b. Instruct students to solve the equation by finding the SUM using an efficient / easy strategy.
   i. Note – do not direct the students or imply to the students to use the specific strategy of ‘Quick Addition’ – an important part of the assessment is to decide if a student will identify the numbers in the equation will be best suited for a specific strategy.

c. Instruct students they will need to explain how they found the SUM orally.

b. Instruct students if they need to write any information down to help them keep track of the steps they are encouraged to do so...Please note – do not provide them what information they are to write down... Redirect with ‘Think of things that will help make it easier to find the SUM’.
   i. Examples of information a student my use.
      1. Write the numbers in expanded form
      2. Write the sub total of place value columns
C) **Look for / listen for …**
   a. Possible Student Response…
      i. I will find the sum of the ten’s column that’s fifty and twenty is *seventy*. Then I found the sum of the units’ column that’s five and three which is *eight*. Then I added the sum of the ten’s column and units’ column that is seventy and eight which gives me a SUM of seventy-eighth
      ii. I decided to find the SUM by breaking the question up into parts. I added the five units and the three units together first, that gives me eight units. Then I added the digits in the tens column – that’s five tens and two tens which gives me a SUM of seven tens. Then to added the sum of the parts - the units’ column and the tens column that’s eight and seven tens which is seventy-eight

   (Note – Number 2 description is satisfactory however we would encourage students to use ‘front end’ addition as describe in the 1st student response as it is a building block for other strategies)

D) **Assessment**
   a. Scale is … Yes / No
      i. To successfully achieve this outcome a student must achieve the criteria below…
         1. Provide the correct SUM
         2. They must use the correct vocabulary
         3. Correctly explain an efficient strategy
            a. See student responses for examples
Grade 3 Oral Math Calculations

Task A – Compensation

A) Description of task...
   a. Description of the strategy - This strategy for subtraction involves the student recognizing that the subtrahend can be easily changed into a multiple of ten or hundred. The student will adjust the subtrahend by adding or removing a part of the subtrahend to create an 'easier number' to work with. The student will then adjust the other subtrahend or sum to compensate for the original adjustment
      i. 2 two-digit whole numbers
      ii. The digit zero is not used in either subtrahend or minuend.
      iii. Either minuend or subtrahend will be a number that can be easily changed into a 'friendly number' (multiple of 10 or 100)
      iv. Use these types of questions
          1. 46 - 29 =
          2. 73 - 38 =
          3. 29 - 16 =

B) Instructions Given to the Students
   a. Provide the students a VISUAL representation of the number equation
      i. Examples…
         1. Number equation could be written on a white board for entire class
         2. Presented on a SMART Board for entire class
         3. Paper worksheet – question specific to a student
         4. Written on the desk – question specific to a student
         5. Written on an individual white board – question specific to a student
   b. Instruct students to solve the equation by finding the DIFFERENCE using an efficient / easy strategy.
   c. Instruct students they will need to explain how they found the DIFFERENCE orally.
   d. Students are not to write any information down to help them in these questions. This is a completely oral activity.

C) Look for / listen for…
   a. Possible Student Responses…
      i. 46 - 29 =
         1. The difference is 17. I decided to change 29 to 30 to make the equation friendlier to work with. I know the difference between 46 and 30 is 16. There for the difference between 46 and 29 would be one more. That’s how I know the difference is 17.
         2. I know the difference between 46 and 29 is 17. When I looked at the question I saw the subtrahend could be changed from 29 to 30 just by adding one. Thirty is a lot easier to work with than twenty-nine. I know if I add one to the subtrahend I must the same amount to the minuend. This will keep the difference between the parts the same – that’s really
important to remember\(1\) That makes the minuend forty-seven. The difference between forty-seven and thirty is seventeen.

D) Assessment
   a. Scale is … Yes / No
      i. To successfully achieve this outcome a student must achieve the criteria below…
         1. Provide the correct DIFFERENCE
         2. They must use the correct vocabulary
         3. Correctly explain an efficient strategy
            a. See student responses for examples

**Task B–Quick Subtraction**

A) Description of task
   a. Description of the strategy - This strategy for subtraction involves applying student’s knowledge in recognizing that calculating the difference between the minuend and the subtrahend does not require borrowing. This strategy will also rely on student understanding the value of each digit in the number to correctly use the math vocabulary to explain their understanding. This is a great foundation strategy if students use Front End Subtraction (starting at the left and working right –greatest place value to the least place value) as well to solve these types of questions.
      i. 2 - two digit whole numbers
      ii. The digit zero is not used in either number
      iii. Use these types of questions
           1. 89 - 21 = ?
           2. ? = 56 – 35
           3. 67 - 24 = ?

B) Instructions Given to the Students
   a. Provide the students a VISUAL representation of the number equation
      i. Examples…
         1. Number equation could be written on a white board for entire class
         2. Presented on a SMART Board for entire class
         3. Paper worksheet – specific to a student
         4. Written on the desk – specific to a student
         5. Written on an individual white board – specific to a student
   b. Instruct students to solve the equation by finding the DIFFERENCE using an efficient / easy strategy.
   c. Instruct students they will need to explain how they found the DIFFERENCE orally.
   d. Instruct students if they need to write any information down to help them keep track of the steps they are encouraged to do so…Please note – do not provide them what information they are to write down… Redirect with ‘Think of things that will help make it easier to find the DIFFERENCE.’
C) Look for / listen for …
   a. Possible Student Responses…
      i. 89 - 21 =
         1. When I looked at the minuend and subtrahend the digits didn’t need any
            borrowing if I used the algorithm. I just started and found the difference
            between found the difference between 80 and 20 that’s 60. Then the unit’s
            place difference between 9 and 1 is 8. I then put the 60 with the 8 to have a
            difference of 68.

D) Assessment
   a. Scale is … Yes / No
      i. To successfully achieve this outcome a student must achieve the criteria below…
         1. Provide the correct DIFFERENCE
         2. They must use the correct vocabulary
         3. Correctly explain an efficient strategy

Task C – Count On/ Count Back
A) Description of task…
   a. Description of strategy – This strategy student is required to count back from the greater
      number to find the difference, or count on from the lesser number to find the difference.
      Students are encouraged to use benchmark numbers (i.e. multiplies of ten) when counting
      back or counting on.
      i. 2 - two digit whole numbers
      ii. The digit zero is not used in either number
      iii. Use these types of questions
         1. 83 - 45 =
         2. ? = 65 – 37 =
         3. 52 – 17 =

B) Instructions Given to the Students
   a. Provide the students a VISUAL representation of the number equation
      i. Examples…
         1. Number equation could be written on a white board for entire class
         2. Presented on a SMART Board for entire class
         3. Paper worksheet – specific to a student
         4. Written on the desk – specific to a student
         5. Written on an individual white board – specific to a student
   b. Instruct students to solve the equation by finding the DIFFERENCE using an efficient /
      easy strategy.
   c. Instruct students they will need to explain how they found the DIFFERENCE orally.
   d. Instruct students if they need to write any information down to help them keep track of the
      steps they are encouraged to do so…Please note – do not provide them what information
      they are to write down… Redirect with ‘Think of things that will help make it easier to
      find the DIFFERENCE.’
e. If the student does not use the ‘Count on / Count back strategy, please specifically direct student to use the strategy.

C) **Look for / listen for …**

a. Possible Student Responses…
   i. 83 - 45 = 
      1. I started at eighty-three and counting back to 80 and that’s 3. Then I counted back from 80 to 50 and that’s 30. The difference so far is 33. Then I counted back from 50 to 45 is 5. I than added the 5 to 33 to get a difference of 38.
      2. I started at forty-five and counted on to fifty that’s five. Than from fifty to eighty is thirty. The difference so far is thirty-five. Than counted on from eighty to eighty-three is three. I added three to the thirty-five to have a difference of thirty-eight.

D) **Assessment**

a. Scale is … Yes / No
   i. To successfully achieve this outcome a student must achieve the criteria below…
      1. Provide the correct DIFFERENCE
      2. They must use the correct vocabulary
      3. Correctly explain an efficient strategy

---

**Task D – Front End Place Value**

A) **Description of task**

a. *Description of the strategy - This strategy for subtraction involves the student working from left to right in the question. Student will find the difference between the minuend and greatest place value digit in the subtrahend. The student will work from the left to the right in the subtrahend. For example: 84 – 26, you would do 84 – 20 and then 64 - 6*
   i. Two – two digit whole numbers
   ii. The digits in the units in the minuend must be less than the digit in the subtrahend
      1. Use these types of questions
         a. 84 - 26 = 
         b. = 73 - 55
         c. ___ = 66 - 37

B) **Instructions Given to the Students**

a. Provide the students a **VISUAL** representation of the number equation
   i. Examples…
      1. Number equation could be written on a white board for entire class
      2. Presented on a SMART Board for entire class
      3. Paper worksheet – specific to a student
      4. Written on the desk – specific to a student
      5. Written on an individual white board – specific to a student
   b. Instruct students to solve the equation by finding the DIFFERENCE using an efficient / easy strategy.
c. Instruct students they will need to explain how they found the DIFFERENCE orally.
d. Students are not to write any information down to help them in these questions. This completely orally activity.

C) Look for / listen for …
   a. Possible Student Responses…
      i. 73 - 55 =
         1. I found the difference between 73 and 50 that’s 23 and then found the difference between 23 and 5 is 18.

D) Assessment…
   a. Scale is … Yes / No
      i. To successfully achieve this outcome a student must achieve the criteria below…
         1. Provide the correct DIFFERENCE
         2. They must use the correct vocabulary
         3. Correctly explain an efficient strategy
Grade 4 Oral Math Calculations

Task A – Finding Compatibles (Make 10)

A) Description of task...

a. Description of the strategy - This strategy for addition involves looking for pairs of numbers that combine to make 10 or a multiple of 10. The term finding friendly numbers is used to describe this strategy.

   i. Single digit whole numbers
   ii. Maximum number of numbers in the string is 7
   iii. At least 4 of the numbers are compatibles that make 10
   iv. Use these types of questions
       1. 3 + 8 + 9 + 1 + 7 + 4 + 6 = ?
       2. □ = 9 + 1 + 4 + 5 + 6 + 6 + 8
       3. Sum of 2 + 4 + 6 + 5 + 8 + 4 + 6 is ___

B) Instructions Given to the Students

a. Provide the students a visual representation of the number equation

   i. Examples...
       1. Number equation could be written on a white board for entire class
       2. Presented on a SMART Board for entire class
       3. Paper worksheet – specific to a student
       4. Written on the desk – specific to a student
       5. Written on an individual white board – specific to a student

b. Instruct students to solve the equation by finding the SUM using an efficient / easy strategy.

   i. Note – do not direct the students or imply to the students to use the specific strategy of ‘Finding 10’ – an important part of the assessment is to decide if a student will identify the numbers in the equation will be best suited for a specific strategy.

   ii. Instruct students they will need to explain how they found the SUM orally.

   iii. Instruct students if they need to write any information down to help them keep track of the steps they are encouraged to do so…Please note – do not provide them what information they are to write down… Redirect with ‘Think of things that will help make it easier to find the SUM.’

       1. Examples of information a student may use.
       2. Circle the pairs that make ten
       3. Cross out the pair of numbers that make ten and write down the sub total
       4. Draw a line from one number to its friendly partner that makes ten.
C) Look for / listen for…
   a. Possible Student Responses
      i. Three add seven make a ten, nine add one makes another ten and four and six makes a third ten. The three tens make thirty and the eight left from the equation that makes thirty-eight. Therefore, the sum of the string of numbers is thirty-eight.
      ii. I know if I find numbers that make ten or multiples of ten it will be easier … I saw that a one, four and five make ten – the two sixes and the eight make twenty - therefore all that’s left in the string of numbers to add is nine. When I add subtotals of ten, twenty and nine it’s thirty-nine. The sum of the equation is thirty-nine.

D) Assessment
   a. Scale is … Yes / No
      i. To successfully achieve this outcome a student must achieve the criteria below…
         1. Provide the correct SUM
         2. They must use the correct vocabulary
         3. Correctly explain an efficient strategy
            a. See student responses for examples

Task B – Finding Compatibles (Make 1000)

A) Description of task
   a. Description of the strategy - This strategy for addition involves looking for pairs of numbers that combine to make 1000 or a multiple of 1000. The term finding friendly numbers is used to describe this strategy.
      i. Three digit whole numbers in standard form (#00)
      ii. Maximum number of numbers in the string is 5
      iii. At least 4 of the numbers are compatibles that make 1000
      iv. Use these types of questions
         1. 600 + 800 + 200 + 500 + 500 = ?
         2. □ = 900 + 100 + 400 + 500 + 600
         3. Sum of 200 + 400 + 600 + 500 + 800 is _______
B) Instructions Given to the Students

a. Provide the students a visual representation of the number equation
   i. Examples…
      1. Number equation could be written on a white board for entire class
      2. Presented on a SMART Board for entire class
      3. Paper worksheet – specific to a student
      4. Written on the desk – specific to a student
      5. Written on an individual white board – specific to a student

b. Instruct students to solve the equation by finding the SUM using an efficient / easy strategy.
   i. Note – do not direct the students or imply to the students to use the specific strategy of ‘Finding 1000’ – an important part of the assessment is to decide if a student will identify the numbers in the equation will be best suited for a specific strategy.

c. Instruct students they will need to explain how they found the SUM orally.

d. Instruct students if they need to write any information down to help them keep track of the steps they are encouraged to do so…Please note – do not provide them what information they are to write down…Redirect with ‘Think of things that will help make it easier to find the SUM.’
   i. Examples of information a student may use.
      1. Circle the pairs that make a thousand
      2. Cross out the pair of numbers that make thousand and write down the subtotal
      3. Draw a line from one number to its friendly partner that makes one thousand.

1. \[ 600 + (800 + 200) + (500 + 500) = 2600 \]

2. \[ 2500 = 900 + 100 + 400 + 500 + 600 \]

3. \[ 200 + 400 + 600 + 500 + 800 = 2500 \]
C) **Look for / listen for …**
   a. Possible Student Responses…
      i. Well eight hundred and two hundred make ten hundred and five hundred and five hundred make one thousand so ten hundred and one thousand that’s two thousand plus the six hundred that’s twenty-six hundred.
      ii. I know if I find numbers that make thousand or multiples of hundred it will be easier … I saw that a one hundred, four hundred and five hundred make one thousand – that left the nine hundred and six hundred which makes fifteen hundred. When I added the two **subtotals** of one thousand and fifteen hundred is twenty-five hundred.

D) **Assessment**
   a. Scale is … Yes / No
      i. To successfully achieve this outcome a student must achieve the criteria below…
         1. Provide the correct **SUM**
         2. They must use the correct vocabulary
         3. Correctly explain an efficient strategy
            a. See student responses for examples

**Task C – Quick Addition**

A) **Description of task**
   a. **Description of the strategy - This strategy for addition involves applying student’s knowledge in recognizing that addends in the number equation do not require regrouping therefore calculating the SUM is less difficult. This strategy relies on students recognizing that ‘regrouping’ is not required to find the sum. This strategy will also rely on student understanding the value of each digit in the number to correctly use the math vocabulary to explain their understanding This is a great foundation strategy if students use Front End Addition (starting at the left and working right – greatest place value to the least place value) as well to solve these types of questions.**
      i. 2 - Three digit whole numbers
      ii. The digit zero is not used in either number
      iii. Sum 1000 or less
      iv. ### + ### <= 1000
      v. Use these types of questions
         1. 715 + 123 = ?
         2. ? = 436 + 453
         3. 222 + 456 = ?

B) **Instructions Given to the Students**
   a. Provide the students a VISUAL representation of the number equation
      i. Examples…
         1. Number equation could be written on a white board for entire class
         2. Presented on a SMART Board for entire class
         3. Paper worksheet – specific to a student
         4. Written on the desk – specific to a student
         5. Written on an individual white board – specific to a student
b. Instruct students to solve the equation by finding the SUM using an efficient / easy strategy.
   i. Note – do not direct the students or imply to the students to use the specific strategy of ‘Quick Addition’ – an important part of the assessment is to decide if a student will identify the numbers in the equation will be best suited for a specific strategy.

c. Instruct students they will need to explain how they found the SUM orally.

d. Instruct students if they need to write any information down to help them keep track of the steps they are encouraged to do so…Please note – do not provide them what information they are to write down… Redirect with ‘Think of things that will help make it easier to find the SUM.’
   i. Examples of information a student my use.
      1. Write the sub to tal of place value columns or write the numbers in expanded form

```
   a. 715 + 123 = 838
   700 + 100 = 800
   10 + 20 = 30
   5 + 3 = 8
   838

   b. 888 = 432 + 456
      400 + 400 = 800
      30 + 50 = 80
      80 + 8 = 88
      888

   c. 232 + 456 = 600 + 70 + 8 = 678
```

C) Look for / listen for …
   a. Possible Student Response
      i. I when I looked at the question I saw that there is no regrouping need – I found the sum of each of the place value columns starting with hundreds – than the tens and last the units. I added those three subtotals to find the SUM. Seven hundred add one hundred that’s eight hundred; one ten add two tens that’s three tens; five units add three units are eight units. Eight hundreds and three tens and three units equal eight hundred thirty – eight.
      ii. This question is easy because there is no regrouping needed. Four hundred and four hundred is eight hundred. Then I decided to add eight hundred and the thirty-six and fifty that’s eight hundred eighty-six - so all that’s left to add is three more to the eight hundred eighty-six so that sum is eight hundred eighty – eight

D) Assessment
   a. Scale is … Yes / No
      i. To successfully achieve this outcome a student must achieve the criteria below…
         1. Provide the correct SUM
         2. They must use the correct vocabulary
         3. Correctly explain an efficient strategy
            a. See student responses for examples
Task D – Front End Addition

A) Description of task
   a. Description of the strategy - This strategy for addition involves the student starting at the left of the addends and moving to the right. A student will find the sum of the digits in the greatest place-value position of the addends first and then continues to find the sum of the digits in lesser place value positions until all the place positions have a sub total. The student will add each of the subtotals to find the SUM of the equation.
      i. Two - Two digit whole numbers
      ii. The digit zero is not used in either addend
      iii. The SUM is less than 100
      iv. Regrouping is required when adding the units
      v. ### + ### =< 100
      vi. Use these types of questions
          1. 37 + 26 =
          2. 38 + 44 =
          3. 65 + 27 =

B) Instructions Given to the Students
   a. Provide the students a VISUAL representation of the number equation
      i. Examples…
          1. Number equation could be written on a white board for entire class
          2. Presented on a SMART Board for entire class
          3. Paper worksheet – specific to a student
          4. Written on the desk – specific to a student
          5. Written on an individual white board – specific to a student
      ii. Instruct students to solve the equation by finding the SUM using an efficient / easy strategy.
          1. Note – do not direct the students or imply to the students to use the specific strategy of ‘Front End Addition’ – an important part of the assessment is to decide if a student will identify the numbers in the equation will be best suited for a specific strategy.
      iii. Instruct students they will need to explain how they found the SUM orally.
      iv. Students are not to write any information down to help them in these questions. This completely orally activity.

C) Look for / listen for…
   a. Possible Student Responses…
      i. 37 + 26 = // Thirty and twenty is fifty – six and seven is thirteen – Therefore fifty and thirteen equals sixty-three.
D) **Assessment**
   a. Scale is … Yes / No
      i. To successfully achieve this outcome a student must achieve the criteria below…
         1. Provide the correct SUM
         2. They must use the correct vocabulary
         3. Correctly explain an efficient strategy
            a. See student responses for examples

**Task E – Break Up and/or Bridge**

A) **Description of task**
   a. *Description of the strategy - This strategy for addition involves the student finding the sum of the first addend and greatest place value of the second addend, continuing to add next greatest place value of second addend to the sub total until the second addend has been added.*
      i. Two - Two digit whole numbers
      ii. The digit zero is not used in either addend
      iii. The SUM is less than 100
      iv. Regrouping is required when adding the units
      v. ## + ## =< 100
      vi. Use these types of questions
         1. 45 + 36 =
         2. 25 + 48 =
         3. 13 + 69 =

B) **Instructions Given to the Students**
   a. Provide the students a **VISUAL** representation of the number equation
      i. Examples…
         1. Number equation could be written on a white board for entire class
         2. Presented on a SMART Board for entire class
         3. Paper worksheet – specific to a student
         4. Written on the desk – specific to a student
         5. Written on an individual white board – specific to a student
   b. Instruct students to solve the equation by finding the SUM using an **efficient / easy strategy**.
      i. Note – do not direct the students or imply to the students to use the specific strategy of ‘Break Up and Bridge’ – an important part of the assessment is to decide if a student will identify the numbers in the equation will be best suited for a specific strategy.
   c. Instruct students they will need to explain how they found the SUM orally.
   d. Students are not to write any information down to help them in these questions. This completely orally activity.
C) **Look for / listen for…**

   a. Possible Student Responses…
   
   i. 45 + 36
   
   1. I will break apart the thirty-six into a thirty and a six. I added the forty-five and the thirty that equals seventy-five. Then I added the seventy-five and the six and that equals eighty-one.
   
   2. Some students may use ‘bridge through the multiple of 10 as well in their explanation. I will break apart the thirty-six in a thirty and a six. I added the forty-five and the thirty that equals seventy-five. Then split the six into a five and one and added the five to seventy-five to make eighty and added one more to make eighty-one. \((45 + 36) = [(45 + 30) + 5] + 1\)

D) **Assessment**

   a. Scale is … Yes / No
   
   i. To successfully achieve this outcome a student must achieve the criteria below…
   
   1. Provide the correct SUM
   2. They must use the correct vocabulary
   3. Correctly explain an efficient strategy
      a. See student responses for examples

**Task F – Compensation**

A) **Description of task**

   a. *Description of the strategy - This strategy for addition involves the student recognizing that one of the addends can be easily changed into a multiple of ten or hundred. The student will adjust that addend by adding or removing a part of the addend to create an ‘easier number’ to work with. The student will than adjust the other addend or sum to compensate for the original adjustment*

   i. 1 three-digit whole number and 1 two-digit whole number
   
   ii. The digit zero is not used in either addend
   
   iii. Either addend will be a number that can be easily changed into a ‘friendly number’ (multiple of 10 or 100)
   
   iv. Use these types of questions
      1. 198 + 57
      2. 256 + 18
      3. 308 + 47 =

B) **Instructions Given to the Students**

   a. Provide the students a VISUAL representation of the number equation

   i. Examples…
      1. Number equation could be written on a white board for entire class
      2. Presented on a SMART Board for entire class
      3. Paper worksheet – specific to a student
      4. Written on the desk – specific to a student
      5. Written on an individual white board – specific to a student
b. Instruct students to solve the equation by finding the SUM using an efficient / easy strategy.
   i. Note – do not direct the students or imply to the students to use the specific strategy of ‘Compensation’ – an important part of the assessment is to decide if a student will identify the numbers in the equation will be best suited for a specific strategy.

c. Instruct students they will need to explain how they found the SUM orally.

d. Students are not to write any information down to help them in these questions. This completely orally activity.

C) Look for / listen for…
   a. Possible Student Responses…
      i. 198 + 57
         1. I know that one hundred ninety-eight is two less than two hundred and two hundred is way easier to work with. Two hundred add fifty-seven equals two hundred fifty-seven but I need to take two away from SUM two hundred fifty-seven which makes it equal to, two hundred fifty-five.
         2. One hundred ninety-eighty is two less than two hundred and two hundred is easier to work – so I will take two from fifty-seven and give it to the one hundred ninety-eight to make two hundred which keeps the equation balanced – therefore new easier equation is two hundred add fifty-five and that is a sum of two hundred fifty-five. ( 198 + 57 = 200 + 55 = (198 + 2) + (57 -2) = 255

D) Assessment
   a. Scale is … Yes / No
      i. To successfully achieve this outcome a student must achieve the criteria below…
         1. Provide the correct SUM
         2. They must use the correct vocabulary
         3. Correctly explain an efficient strategy
            a. See student responses for examples
Task A – Compensation (whole numbers)

A) Description of task...

- Description of the strategy - This strategy for subtraction involves the student recognizing that the subtrahend can be easily changed into a multiple of ten or hundred. The student will adjust the subtrahend by adding or removing a part of the subtrahend to create an ‘easier number’ to work with. The student will then adjust the other subtrahend or sum to compensate for the original adjustment
  - i. 1 three-digit number and 1 two-digit number
  - ii. The digit zero is not used in either subtrahend
  - iii. Either minuend or subtrahend will be a number that can be easily changed into a ‘friendly number’ (multiple of 10 or 100)
  - iv. Use these types of questions
    1. 158 - 49 =
    2. ___ = 473 - 68
    3. 254 - 27 =

B) Instructions Given to the Students

- Provide the students a VISUAL representation of the number equation
  - Examples...
    1. Number equation could be written on a white board for entire class
    2. Presented on a SMART Board for entire class
    3. Paper worksheet – specific to a student
    4. Written on the desk – specific to a student
    5. Written on an individual white board – specific to a student
- Instruct students to solve the equation by finding the DIFFERENCE using an efficient / easy strategy.
- Instruct students they will need to explain how they found the DIFFERENCE orally.
- Students are not to write any information down to help them in these questions. This is a completely oral activity.

C) Look for / listen for...

- Possible Student Responses...
  - i. 158 - 49 =
  1. The difference is 109. I decided to change 49 to 50 to make the equation friendlier to work with. I know the difference between 158 and 50 is 108. Therefor the difference between 158 and 49 would be one more. That’s how I know the difference is 109.
  2. I know the difference between 158 and 49 is 109. When I looked at the question I saw the subtrahend could be changed from 49 to 50 just by adding one. 50 is a lot easier to work with than 49. I know if I add one to the subtrahend I must the same amount to the minuend. This will keep the difference between the parts the same – that’s really important to
remember. That makes the minuend 159. The difference between 159 and 50 is 109.

**Note:** Students should be using proper vocabulary.

**D) Assessment**
- **Scale is … Yes / No**
  - To successfully achieve this outcome a student must achieve the criteria below…
    1. Provide the correct DIFFERENCE
    2. Correctly explain an efficient strategy
      - See student responses for examples

**Task B – Compensation (Mixed Numbers)**

**A) Description of task…**
- **Description of the strategy** - This strategy for subtraction involves the student recognizing that the subtrahend can be easily changed into a friendly number. The student will adjust the subtrahend by adding or removing a part of the subtrahend to create an ‘easier number’ to work with. The student will then adjust the other subtrahend or sum to compensate for the original adjustment.
  - 2 mixed numbers with decimals up to the hundredths
  - Sample Questions…
    1. $15.00 – $4.90 =
    2. ___ = 47.3 – 6.8
    3. $2.54 - $0.27 =

**B) Instructions Given to the Students**
- Provide the students a VISUAL representation of the number equation
  - Examples…
    1. Number equation could be written on a white board for entire class
    2. Presented on a SMART Board for entire class
    3. Paper worksheet – specific to a student
    4. Written on the desk – specific to a student
    5. Written on an individual white board – specific to a student
- Instruct students to solve the equation by finding the DIFFERENCE using an efficient / easy strategy.
- Instruct students they will need to explain how they found the DIFFERENCE orally.
- Students are not to write any information down to help them in these questions. This is a completely oral activity.

**C) Look for / listen for…**
- Possible Student Responses…
  - $15.00 - $4.90 = ____
1. The difference is $10.10. I decided to change $4.90 to $5.00 to make the equation friendlier to work with. I know the difference between $15.00 and $5.00 is $10.00. There for the difference between $15.00 and $4.90 would be $0.10 more. That’s how I know the difference is $10.10.

2. I know the difference between $15.00 and $4.90 is $10.10. When I looked at the question I saw the subtrahend could be changed from $4.90 to $5.00 just by adding $0.10. $5.00 is a lot easier to work with than $4.90. I know if I add one to the subtrahend I must the same amount to the minuend. This will keep the difference between the parts the same – that’s really important to remember. That makes the minuend 15.10. The difference between 15.10 and 5.00 is 10.10.

D) Assessment
   a. **Scale is … Yes / No**
      ii. To successfully achieve this outcome a student must achieve the criteria below…
         1. Provide the correct DIFFERENCE
         2. They must use the correct vocabulary
         3. Correctly explain an efficient strategy
            a. See student responses for examples

**Task C – Quick Subtraction**

A) **Description of task…**
   a. **Description of the strategy - This strategy for subtraction involves applying student’s knowledge in recognizing that calculating the difference between the minuend and the subtrahend does not require borrowing. This strategy will also rely on student understanding the value of each digit in the number to correctly use the math vocabulary to explain their understanding. This is a great foundation strategy if students use Front End Subtraction (starting at the left and working right –greatest place value to the least place value) as well to solve these types of questions.**
      i. 2 - three digit whole numbers
         ii. The digit zero is not used in either number
         iii. Use these types of questions
            1. 989-648 =
            2. 277- 165 =
            3. Five hundred fifty-seven less three hundred forty-six

B) **Instructions Given to the Students**
   a. Provide the students a VISUAL representation of the number equation
      i. Examples…
         1. Number equation could be written on a white board for entire class
         2. Presented on a SMART Board for entire class
         3. Paper worksheet – specific to a student
         4. Written on the desk – specific to a student
         5. Written on an individual white board – specific to a student
   b. Instruct students to solve the equation by finding the DIFFERENCE using an efficient strategy.
   c. Instruct students they will need to explain how they found the DIFFERENCE orally.
d. Instruct students if they need to write any information down to help them keep track of the steps they are encouraged to do so…Please note – do not provide them what information they are to write down… Redirect with ‘Think of things that will help make it easier to find the DIFFERENCE.’

C) Look for / listen for …
   a. Possible Student Responses…
      i. 989-648 =
         1. When I looked at the minuend and subtrahend the digits didn’t need any borrowing if I used the algorithm. I just started and found the difference between 900 and 600 and that’s 300. Then, I moved to the tens place and found the difference between 80 and 40 that’s 40. And then the units place and the difference between 9 and 8 is 1. I then put the 300 with 40 and 1 to have a difference of 341.

D) Assessment
   a. Scale is … Yes / No
      i. To successfully achieve this outcome a student must achieve the criteria below…
         1. Provide the correct DIFFERENCE
         2. They must use the correct vocabulary
         3. Correctly explain an efficient strategy

Task D – Repeated Halving

A) Description of task…
   a. Description of the strategy - This strategy involves students understanding the relationship between 2 – 4 – 8 and recognizing when these numbers are the divisor. Students need to understand that cutting a number in half and in half again is creating quarters or dividing into four parts. Students need to understand that cutting a number in half and in half again and in half again is creating eighths or dividing into eight parts.
      1. Dividend is 3-digit number and divisor is a 2 / 4 or 8.
      2. ### ÷ (2 or 4 or 8) =
      3. Use these types of questions
         a. 300 ÷ 4 =
         b. 156 ÷ 4 =
         c. 200 ÷ 8 =

B) Instructions Given to the Students
   a. Provide the students a VISUAL representation of the number equation
      i. Examples…
         1. Number equation could be written on a white board for entire class
         2. Presented on a SMART Board for entire class
         3. Paper worksheet – specific to a student
         4. Written on the desk – specific to a student
         5. Written on an individual white board – specific to a student
   b. Instruct students to solve the equation by finding the QUOTIENT using an efficient / easy strategy.
   c. Instruct students they will need to explain how they found the QUOTIENT orally.
d. Instruct students if they need to write any information down to help them keep track of the steps they are encouraged to do so…Please note – do not provide them what information they are to write down… Redirect with ‘Think of things that will help make it easier to find the QUOTIENT.’

C) **Look for / listen for …**
   a. Possible Student Responses…
      i. \( 300 \div 4 = \)
         1. If I cut 300 in half that is 150 and if cut 150 in half that’s 75. There for 300 divided by 4 is 75.
      ii. \( 156 \div 4 = \)
          1. Half of 156 is 50 and 25 and 3 that’s 78 and half of 78 is 35 and 4 and that’s 39. There for 156 divided by 4 is 39.
      iii. \( 200 \div 8 = \)
          1. 200 cut in half is 100; 100 cut in half is 50 and 50 cut in half is 25. There for 200 divided by 8 is 25.

D) **Assessment**
   a. Scale is … Yes / No
      i. To successfully achieve this outcome a student must achieve the criteria below…
         1. Provide the correct QUOTIENT
         2. They must use the correct vocabulary
         3. Correctly explain an efficient strategy

**Task E – Count On/Count Back**

A) **Description of strategy**
   a. Description of strategy – This strategy student is required to count back from the greater number to find the difference, or count on from the lesser number to find the difference. Students are encouraged to use benchmark numbers when counting back or counting on.
      i. Use numbers that are less than 20
      ii. One of the two numbers need to be in the tenths
      iii. The digit zero is not used in either number
      iv. Use these types of questions
         1. \( 5.2 \div 3.8 = \)
         2. \( ? \div 9.5 \div 1.8 \)
         3. \( 16 \div 11.7 = \)

B) **Instructions Given to the Students**
   a. Provide the students a VISUAL representation of the number equation
      i. Examples…
         1. Number equation could be written on a white board for entire class
         2. Presented on a SMART Board for entire class
         3. Paper worksheet – specific to a student
         4. Written on the desk – specific to a student
         5. Written on an individual white board – specific to a student
b. Instruct students to solve the equation by finding the DIFFERENCE using an efficient / easy strategy.

c. Instruct students they will need to explain how they found the DIFFERENCE orally.

d. Instruct students if they need to write any information down to help them keep track of the steps they are encouraged to do so…Please note – do not provide them what information they are to write down… Redirect with ‘Think of things that will help make it easier to find the DIFFERENCE.’

e. If the student does not use the ‘Count on / Count back strategy, please specifically direct student to use the strategy.

C) **Look for / listen for …**

a. Possible Student Responses…

i. \(5.2 - 3.8=\)

1. To find the difference I started at three and eight tenths and counted up to five and two tenths. I added two tenths to three and eight tenths to make four wholes and then added one whole to the four wholes to make five wholes. Then I added two tenths to the five wholes to arrive at five and two tenths. I then added together all the parts I added to find the difference – two tenths and one whole and another two tenths to make a total difference of one and four tenths difference between five and two tenths and three and eight tenths.

ii. \(? = 9.5 - 1.8\)

1. To find the difference between nine and five tenths and one and eight tenths I decided to count back from minuend to the subtrahend. I started at nine and five tenths and counted back by five tenths to nine wholes. From nine wholes I counted back by seven wholes to two wholes. From two wholes, I counted back by two tenths to one and eight tenths. I than put together all parts I counted back by… five tenths and seven wholes and two tenths which makes seven and seven tenths which is the difference between nine and five tenths and one and eight tenths.

iii. \(16 - 11.7=\)

1. I decided to use count up strategy to find the difference between 11.7 and 16. I started with eleven and seven tenths by counting up by three tenths which made my new number twelve wholes. Then the difference between twelve wholes and sixteen wholes is easy- that’s four more wholes. The difference between eleven and seven tenths and sixteen is three tenths and four wholes making the total difference four and three tenths.

D) **Assessment**

a. Scale is … Yes / No

i. To successfully achieve this outcome a student must achieve the criteria below…

1. Provide the correct DIFFERENCE
2. They must use the correct vocabulary
3. Correctly explain an efficient strategy
**Task F – Partial Quotients**

**A) Description of task…**

a. Description of the strategy - This strategy involves students recognizing that dividend can be split into parts that can be divided evenly by the divisor. Students will require a good understanding of part / part / whole relationships.
   i. Dividend is 3-digit number and divisor is a single digit number.
   ii. ### ÷ # =
   iii. Use these types of questions
      1. 336 ÷ 3 =
      2. 497 ÷ 7 =

**B) Instructions Given to the Students**

a. Provide the students a VISUAL representation of the number equation
   i. Examples…
      1. Number equation could be written on a white board for entire class
      2. Presented on a SMART Board for entire class
      3. Paper worksheet – specific to a student
      4. Written on the desk – specific to a student
      5. Written on an individual white board – specific to a student
b. Instruct students to solve the equation by finding the QUOTIENT using an efficient / easy strategy.
c. Instruct students they will need to explain how they found the QUOTIENT orally.
d. Instruct students if they need to write any information down to help them keep track of the steps they are encouraged to do so…Please note – do not provide them what information they are to write down… Redirect with ‘Think of things that will help make it easier to find the QUOTIENT.’

**C) Look for / listen for …**

b. Possible Student Responses…
   i. 336 ÷ 3 =
      1. If I break 336 into 300 and 36 it will make it easier to divide the parts. 300 ÷ 3 is 100 and 36 ÷ 3 is 12. I then combine the partial quotients 100 and 12 to give a quotient of 112 for 336 ÷ 3.
   ii. 497 ÷ 7 =
      1. I know that 49 is a multiple of 7, there for 490 must be a multiple of 7. I split apart 497 into 490 and 7. 490 ÷ 7 is 70 and 7 ÷ 7 is one. I then combine the partial quotients 70 and 1 to make 71. There for 497 ÷ 7 is 71.

**D) Assessment**

c. Scale is … Yes / No

   i. To successfully achieve this outcome a student must achieve the criteria below…
      1. Provide the correct QUOTIENT
      2. They must use the correct vocabulary
      3. Correctly explain an efficient strategy
Task G – Front End Subtraction

A) Description of task

a. Description of the strategy - This strategy for subtraction involves the student starting at the left place value of the minuend and moving to the right. A student will find the difference of the digits in the greatest place-value position of the minuend and subtrahend first and then continues to find the difference of the digits in lesser place value positions until all the place positions have a sub total. The student will add each of the subtotals to find the DIFFERENCE of the equation.

i. Whole numbers

ii. Minuend is three-digit number and subtrahend is two-digit number.

iii. The unit’s digit in the subtrahend is greater than unit’s digit in the minuend.

iv. The digit zero is not used in either the minuend and/or subtrahend.

v. ### - ## =

vi. Use these types of questions…

1. 424 - 68 =
2. 574 - 56 =

B) Instructions Given to the Students

a. Provide the students a VISUAL representation of the number equation

i. Examples…

1. Number equation could be written on a white board for entire class
2. Presented on a SMART Board for entire class
3. Paper worksheet – specific to a student
4. Written on the desk – specific to a student
5. Written on an individual white board – specific to a student

b. Instruct students to solve the equation by finding the DIFFERENCE using an efficient / easy strategy.

c. Instruct students they will need to explain how they found the DIFFERENCE orally.

d. Instruct students if they need to write any information down to help them keep track of the steps they are encouraged to do so…Please note – do not provide them what information they are to write down… Redirect with ‘Think of things that will help make it easier to find the DIFFERENCE.’

e. If the student does not use the ‘Count on / Count back strategy, please specifically direct student to use the strategy.

C) Look for / listen for …

a. Possible Student Responses…

i. 424 – 68 =

1. To find the difference between 424 and 68 I decided to start at the far left place value place of the minuend. The difference between 424 and 60 is 364 and then all that was left to do was find the difference between 364 and 8 and that’s 356. There for the difference between 424 and 68 is 356.

ii. 574 – 56 =
1. I decided to take 50 away from 574 that gives me a difference of 524 and then I took 6 away from 524 by taking 4 away first to 520 and then took 2 more away to make 518. Therefore the difference between 574 and 56 is 518.

D) **Assessment**
   a. Scale is … Yes / No
      i. To successfully achieve this outcome a student must achieve the criteria below…
      1. Provide the correct DIFFERENCE.
      2. They must use the correct vocabulary
      3. Correctly explain an efficient strategy
Grade 6 Oral Math Calculations

Task A – Finding Compatibles (Make 100)

A) Description of task

a. Description of the strategy - This strategy for addition involves looking for pairs of numbers that combine to make 100. The term finding friendly numbers is used to describe this strategy.
   i. Two digit whole numbers
   ii. Numbers are multiples of 10
   iii. Maximum number of numbers in the string is 7
   iv. At least 4 of the numbers are compatibles that make 100
   v. Use these types of questions
      1. \( 50 + 70 + 30 + 80 + 90 + 10 + 50 = ? \)
      2. \( \square = 30 + 10 + 10 + 50 + 50 + 70 + 40 \)
      3. Sum of \( 20 + 40 + 60 + 90 + 70 + 30 + 30 \) is ______

B) Instructions Given to the Students

a. Provide the students a visual representation of the number equation
   i. Examples…
      1. Number equation could be written on a white board for entire class
      2. Presented on a SMART Board for entire class
      3. Paper worksheet – specific to a student
      4. Written on the desk – specific to a student
      5. Written on an individual white board – specific to a student

b. Instruct students to solve the equation by finding the SUM using an efficient / easy strategy
   i. Note – do not direct the students or imply to the students to use the specific strategy of ‘Finding 100’ – an important part of the assessment is to decide if a student will identify the numbers in the equation will be best suited for a specific strategy.

c. Instruct students they will need to explain how they found the SUM orally.

d. Instruct students if they need to write any information down to help them keep track of the steps they are encouraged to do so…Please note – do not provide them what information they are to write down… Redirect with ‘Think of things that will help make it easier to find the SUM.’
   i. Examples of information a student my use.
      1. Circle the pairs that make a hundred
      2. Cross out the pair of numbers that make a hundred and write down the sub total
      3. Draw a line from one number to its friendly partner that makes one hundred.
C) **Look for / listen for...**

a. Possible Student Responses
   i. I looked for pairs of addends that make a hundred to make it easier. Seventy and thirty makes a hundred and ninety and ten make another hundred, and two fifties make a third hundred. That left only eighty in the string of numbers so the SUM will be three hundred eighty.

D) **Assessment**

a. Scale is ... Yes / No
   i. To successfully achieve this outcome a student must achieve the criteria below...
      1. Provide the correct SUM
      2. They must use the correct vocabulary
      3. Correctly explain an efficient strategy
         a. See student responses for examples

**Task B – Finding Compatibles (Make 1000)**

A) **Description of task**

a. **Description of the strategy** - This strategy for addition involves looking for **pairs of numbers that combine to make 1000.** The term finding friendly numbers is used to describe this strategy.
   i. Three digit standard numbers (##0)
   ii. Numbers are multiples of 10
   iii. Maximum number of numbers in the string is 5
   iv. At least 4 of the numbers are compatibles that make 1000
   v. Use these types of questions
      1. \(240 + 410 + 620 + 510 + 490 =\)
      2. \(____ = 550 + 650 + 410 + 190 + 330\)
B) **Instruction Given to the Students**

a. Provide the students a visual representation of the number equation
   i. Examples…
      1. Number equation could be written on a white board for entire class
      2. Presented on a SMART Board for entire class
      3. Paper worksheet – specific to a student
      4. Written on the desk – specific to a student
      5. Written on an individual white board – specific to a student

b. Instruct students to solve the equation by finding the SUM using an **efficient/easy strategy**.
   i. Note – do not direct the students or imply to the students to use the specific strategy of ‘Finding 1000’ – an important part of the assessment is to decide if a student will identify the numbers in the equation will be best suited for a specific strategy.

c. Instruct students they will need to explain how they found the SUM orally.

d. Instruct students if they need to write any **information** down to help them keep track of the steps they are encouraged to do so…Please note – do not provide them what information they are to write down… Redirect with ‘Think of things that will help make it easier to find the SUM.’
   i. Examples of information a student my use.
      1. Circle the pairs that make a thousand
      2. Cross out the pair of numbers that thousand and write down the sub total
      3. Draw a line from one number to its friendly partner that makes one thousand

\[
\begin{align*}
1. \quad & 240 + 410 + 620 + 510 + 490 = 2270 \\
& 200 + 400 + 600 + 50 + 90 = 2270 \\
& 40 + 10 + 20 + 60 + 70 = 270
\end{align*}
\]

\[
\begin{align*}
1. \quad & 240 + 410 + 620 + 510 + 490 = 2270 \\
& 250 + 270 \\
\end{align*}
\]

\[
\begin{align*}
1. \quad & 240 + 410 + 620 + 510 + 490 = 2270 \\
& 1630 + 1000 = 2630
\end{align*}
\]
C) Look for / listen for …
   a. Possible Student Responses
      i. I expanded each of the addends in the string to make it easier to find subtotals that
         make one thousand. I used the ten from five hundred ten and put it with the ninety
         from four hundred ninety to make a hundred. I put that hundred with the four
         hundred to make five hundred. Then I added the two five hundreds to make one
         thousand. I than took the four hundred from four hundred ten and the six hundred
         form the six hundred forty to make another one thousand. That left the two
         hundred and the forty from the two hundred forty and ten from the four hundred
         ten and the twenty from the six hundred twenty. I added the forty and ten and the
         twenty that makes seventy. I added that seventy
         -two hundred to two hundred
         seventy. I took the three subtotals, the two one thousands and the two hundred
         seventy which makes the sum of two thousands two hundred seventy.

D) Assessment
   a. Scale is… Yes / No
      i. To successfully achieve this outcome a student must achieve the criteria below…
         1. Provide the correct SUM
         2. They must use the correct vocabulary
         3. Correctly explain an efficient strategy
            a. See student responses for examples

Task C – Quick Addition

A) Description of task...
   a. Description of the strategy - This strategy for addition involves applying student’s
      knowledge in recognizing that addends in the number equation do not require regrouping
      therefore calculating the SUM is less difficult. This strategy relies on students
      recognizing that ‘regrouping’ is not required to find the sum. This strategy will also rely
      on student understanding the value of each digit in the number to correctly use the math
      vocabulary to explain their understanding This is a great foundation strategy if students
      use Front End Addition (starting at the left and working right –greatest place value to the
      least place value) as well to solve these types of questions.
      i. Two Mixed Numbers / in decimal format
      ii. The digit zero is not used in either number
      iii. Sum less than ten
      iv. No regrouping
      v. #.## + #.## < 10
      vi. Use these types of questions
         1. 7.45 + 2.53 =
         2. 2.22 + 4.56 = ?
         3. ____ = 5.25 + 4.24
B) **Instructions Given to the Students**
   
a. Provide the students a **VISUAL** representation of the number equation  
   i. Examples…  
      1. Number equation could be written on a white board for entire class  
      2. Presented on a SMART Board for entire class  
      3. Paper worksheet – specific to a student  
      4. Written on the desk – specific to a student  
      5. Written on an individual white board – specific to a student  

b. Instruct students to solve the equation by finding the **SUM using an efficient / easy** strategy.  
   i. Note – do not direct the students or imply to the students to use the specific strategy of ‘Quick Addition’ – an important part of the assessment is to decide if a student will identify the numbers in the equation will be best suited for a specific strategy.  

c. Instruct students they will need to explain how they found the **SUM orally**.  

d. Instruct students if they need to write any **information** down to help them keep track of the steps they are encouraged to do so…Please note – do not provide them what information they are to write down… Redirect with ‘Think of things that will help make it easier to find the SUM.’  
   i. Examples of information a student my use.  
      1. Write the sub total of place value columns

![Example Image](image.png)

C) **Look for / listen for**…

a. Possible Student Response  
   i. I when I looked at the question I saw that there is no regrouping need – I found the sum of each of the place value columns starting with units – than the tenths and the hundredths. I added those three subtotals to find the SUM. Seven wholes and two wholes is nine wholes; four tenths and five tenths that’s nine tenths; five hundredths add three hundredths is eight hundredths. Seven wholes and nine tenths and five hundredths equals nine and ninety-eight hundredths.  

D) **Assessment**…

a. Scale is … Yes / No  
   i. To successfully achieve this outcome a student must achieve the criteria below…  
      1. Provide the correct SUM  
      2. They must use the correct vocabulary
3. Correctly explain an efficient strategy
   a. See student responses for examples

**Task D – Front End Addition (whole numbers)**

**E) Description of task**
   a. *Description of the strategy* - This strategy for addition involves the student starting at the left of the addends and moving to the right. A student will find the sum of the digits in the greatest place-value position of the addends first and then continues to find the sum of the digits in lesser place value positions until all the place positions have a sub total. The student will add each of the subtotals to find the SUM of the equation.
   i. Two – Four digit whole numbers
   ii. Both numbers are multiples of 100
   iii. Regrouping is required when adding the both the thousands and hundreds place value positions
   iv. ##00 + ##00 > 10 000
      1. Use these types of questions
         a. 7600 + 8800 =
         b. 3800 + 7400 =
         c. _____ = 6500 + 5700 =

**F) Instructions Given to the Students**
   a. Provide the students a **VISUAL** representation of the number equation
      i. Examples…
         1. Number equation could be written on a white board for entire class
         2. Presented on a SMART Board for entire class
         3. Paper worksheet – specific to a student
         4. Written on the desk – specific to a student
         5. Written on an individual white board – specific to a student
   b. Instruct students to solve the equation by finding the SUM using an **efficient / easy strategy**.
      i. Note – do not direct the students or imply to the students to use the specific strategy of ‘Front End Addition’ – an important part of the assessment is to decide if a student will identify the numbers in the equation will be best suited for a specific strategy.
   c. Instruct students they will need to explain how they found the SUM orally.
   d. Students are not to write any information down to help them in these questions. This completely orally activity.

**G) Look for / listen for …**
   a. Possible Student Responses…
      i. 7600 + 8800 = seven thousand and eight thousand is fifteen thousand – six hundred and eight hundred is fourteen hundred – Therefore fifteen thousand and fourteen hundred is sixteen thousand four hundred.
H) Assessment…
   a. Scale is … Yes / No
      i. To successfully achieve this outcome a student must achieve the criteria below…
         1. Provide the correct SUM
         2. They must use the correct vocabulary
         3. Correctly explain an efficient strategy
            a. See student responses for examples

Task E – Front End Addition (mixed numbers)

A) Description of task
   a. Description of the strategy - This strategy for addition involves the student starting at the
      left of the addends and moving to the right. A student will find the sum of the digits in the
      greatest place-value position of the addends first and then continues to find the sum of the
      digits in lesser place value positions until all the place positions have a sub total. The
      student will add each of the subtotals to find the SUM of the equation.
      i. Two – two digit mixed numbers
      ii. The digit zero is not used in either addend
      iii. Regrouping in the tenths position
      iv. #.# + #.# < 10
      v. Use these types of questions
         1. 3.8 + 5.4 =
         2. 6.4 + 2.7 =
         3. 4.5 + 4.8 =

B) Instructions Given to the Students
   a. Provide the students a VISUAL representation of the number equation
      i. Examples…
         1. Number equation could be written on a white board for entire class
         2. Presented on a SMART Board for entire class
         3. Paper worksheet – specific to a student
         4. Written on the desk – specific to a student
         5. Written on an individual white board – specific to a student
   b. Instruct students to solve the equation by finding the SUM using an efficient / easy
      strategy.
      i. Note – do not direct the students or imply to the students to use the specific
         strategy of ‘Front End Addition’ – an important part of the assessment is to decide
         if a student will identify the numbers in the equation will be best suited for a
         specific strategy.
   c. Instruct students they will need to explain how they found the SUM orally.
   d. Students are not to write any information down to help them in these questions. This
      completely orally activity.
C) **Look for / listen for…**
   a. Possible Student Responses…
      i. \(3.8 + 5.4 =\)
         1. Three wholes plus five wholes is eight wholes // eight tenths and four tenths is twelve tenths // twelve tenths is the same as one whole and two tenths // eight wholes and one whole and two tenths equals nine and two tenths

D) **Assessment**
   a. Scale is… Yes / No
      i. To successfully achieve this outcome a student must achieve the criteria below…
         1. Provide the correct SUM
         2. They must use the correct vocabulary
         3. Correctly explain an efficient strategy
            a. See student responses for examples

**Task F – Break Up and/or Bridge**

A) **Description of task**
   a. *Description of the strategy* - This strategy for addition involves the student finding the sum of the first addend and greatest place value of the second addend, continuing to add next greatest place value of second addend to the sub total until the second addend has been added in full.
      i. Two – Four digit whole numbers
      ii. Both addends are multiplies of 10
      iii. \(###0 + ###0\)
      iv. Regrouping is required for two of the four place value positions
      v. Use these types of questions
         1. \(5820 + 7350 = \) _____
         2. _____ = \(4260 + 7180\)

B) **Instructions Given to the Students**
   a. Provide the students a VISUAL representation of the number equation
      i. Examples…
         1. Number equation could be written on a white board for entire class
         2. Presented on a SMART Board for entire class
         3. Paper worksheet – specific to a student
         4. Written on the desk – specific to a student
         5. Written on an individual white board – specific to a student
   b. Instruct students to solve the equation by finding the SUM using an efficient / easy strategy
      i. Note – do not direct the students or imply to the students to use the specific strategy of ‘Break Up and Bridge’ – an important part of the assessment is to decide if a student will identify the numbers in the equation will be best suited for a specific strategy.
c. Instruct students they will need to explain how they found the SUM orally.
d. Instruct students if they need to write any information down to help them keep track of the steps they are encouraged to do so…Please note – do not provide them what information they are to write down… Redirect with ‘Think of things that will help make it easier to find the SUM.’
   i. Examples of information a student my use
      1. Write the sub total of place value columns

   ![Subtotal Diagram]

C) Look for / listen for …
   a. Possible Student Responses…
      i. 5820 + 7350 =
         1. I will break apart the seventy-three hundred fifty into seven thousand and three hundred and fifty. I added the five thousand eight hundred twenty and the seven thousand that gives twelve thousand eight hundred twenty. Then I added the three hundred to the twelve thousand eight hundred twenty and that equals thirteen thousand one hundred twenty. That works because the three hundred and the eight hundred is twelve hundred or one thousand one hundred. And finally I added the twenty to thirteen thousand one hundred twenty that equals thirteen thousand one hundred seventy.
      ii. ______ 4260 + 7180
         1. I added the seventy-one hundred from the second addend to forty-two hundred sixty and that equals eleven thousand three hundred sixty. Then I added forty from the eighty to the eleven thousand three hundred sixty and that equals eleven thousand four hundred. All that is left to add is the other forty from the eight to eleven thousand four hundred and that’s easy it’s eleven thousand four hundred forty.

D) Assessment
   a. Scale is … Yes / No
      i. To successfully achieve this outcome a student must achieve the criteria below…
         1. Provide the correct SUM
         2. They must use the correct vocabulary
         3. Correctly explain an efficient strategy
            a. See student responses for examples
Task G – Compensation (whole #’s)

A) Description of task
   a. Description of the strategy - This strategy for addition involves the student recognizing that one of the addends can be easily changed into a multiple of ten or hundred. The student will adjust that addend by adding or removing a part of the addend to create an ‘easier number’ to work with. The student will than adjust the other addend or sum to compensate for the original adjustment.
      i. Two - five digit whole numbers
      ii. ## 000 + ## 000 =
      iii. Multiples of 1000
      iv. Regrouping is required for either the thousand or ten thousand place value position
      v. Either addend will be a number that can be easily changed into a ‘friendly number’
      vi. Use these types of questions
          1. 24 000 + 59 000

B) Instructions Given to the Students
   a. Provide the students a VISUAL representation of the number equation
      i. Examples…
         1. Number equation could be written on a white board for entire class
         2. Presented on a SMART Board for entire class
         3. Paper worksheet – specific to a student
         4. Written on the desk – specific to a student
         5. Written on an individual white board – specific to a student
   b. Instruct students to solve the equation by finding the SUM using an efficient / easy strategy
      i. Note – do not direct the students or imply to the students to use the specific strategy of ‘Compensation’ – an important part of the assessment is to decide if a student will identify the numbers in the equation will be best suited for a specific strategy.
   c. Instruct students they will need to explain how they found the SUM orally.
   d. Instruct students if they need to write any information down to help them keep track of the steps they are encouraged to do so…Please note – do not provide them what information they are to write down… Redirect with ‘Think of things that will help make it easier to find the SUM.’
      i. Example of information a student my use.
C) Look for / listen for …
   a. Possible Student Responses…
      i. 24 000 + 59 000 =
         1. I am going to take one thousand from the twenty-four thousand and give to the fifty-nine thousand. That will make the fifty-nine thousand sixty thousand which is easier to add. The twenty-four thousand is now twenty-three thousand so twenty-three thousand and sixty thousand equals eighty-three thousand.
         2. This is easy because I will add one thousand to fifty-nine thousand to make sixty thousand. That changes the number equation to make it easy – its twenty-four thousand and sixty thousand which makes eighty-four thousand but I have to reduce the eighty-four thousand by the one thousand I added in there for the sum will be eighty-three thousand.

D) Assessment
   a. Scale is … Yes / No
      i. To successfully achieve this outcome a student must achieve the criteria below…
         1. Provide the correct SUM
         2. They must use the correct vocabulary
         3. Correctly explain an efficient strategy
            a. See student responses for examples

Task H – Compensation (rational #’s)
A) Description of task …
   a. Description of the strategy - This strategy for addition involves the student recognizing that one of the addends can be easily changed into a multiple of ten or hundred. The student will adjust that addend by adding or removing a part of the addend to create an ‘easier number’ to work with. The student will than adjust the other addend or sum to compensate for the original adjustment.
      i. Two – three digit rational numbers
      ii. 0.## + 0.##
      iii. Both addends are less than one whole
      iv. Sum is less than one whole
      v. Regrouping is required for either of the tenths or thousandths place value positions
      vi. Either addend will be a number that can be easily changed into a ‘friendly number’
      vii. Use these types of questions
          1. 0.28 + 0.44 =

B) Instruction Given to the Students …
   a. Provide the students a VISUAL representation of the number equation
      i. Examples…
         1. Number equation could be written on a white board for entire class
         2. Presented on a SMART Board for entire class
         3. Paper worksheet – specific to a student
         4. Written on the desk – specific to a student
5. Written on an individual white board – specific to a student
   b. Instruct students to solve the equation by finding the SUM using an efficient / easy strategy.
      i. Note – do not direct the students or imply to the students to use the specific strategy of ‘Compensation’ – an important part of the assessment is to decide if a student will identify the numbers in the equation will be best suited for a specific strategy.
   c. Instruct students they will need to explain how they found the SUM orally.
   d. Instruct students if they need to write any information down to help them keep track of the steps they are encouraged to do so…Please note – do not provide them what information they are to write down… Redirect with ‘Think of things that will help make it easier to find the SUM.’

C) Look for / listen for …
   a. Possible Student Responses…
      i. 0.28 + 0.44
         1. I am going to make twenty-eight hundredths into thirty hundredths by adding two hundredths from the forty-four hundredths. That makes the number equation thirty hundredths added to forty-two hundredths which is easy to add that’s seventy-two hundredths.
         2. That is easy because I will make twenty-eight hundredths into thirty hundredths by adding two hundredths. That makes the equation thirty hundredths and forty-four hundredths which equals seventy-four hundredths but I have to take away the extra two hundredths that I added in to make each side of the equation balanced. There for seventy-four hundredths less two hundreds equals seventy-two hundredths.

D) Assessment …
   a. Scale is … Yes / No
      i. To successfully achieve this outcome a student must achieve the criteria below…
         1. Provide the correct SUM
         2. They must use the correct vocabulary
         3. Correctly explain an efficient strategy
            a. See student responses for examples

Multiplication

Task I – Halving and Doubling

A) Halving and Doubling…
   a. Description of task
      i. Description of the strategy - This strategy involves students understanding the relationship that when you half one factor and double the other factor the product will not change. The goal in using this strategy is to create easier factors to multiply. The key for students in using this strategy is to recognize factors that by halving or doubling will create easy numbers.
         1. Two – two or three digit whole numbers
         2. At least one of the factors is an even digit
3. ## (even) x ##
4. ## x ### (even)
5. ##0 x ##0
6. Use these types of questions
   a. 50 x 14 same as 100 x 7 = 700
   b. 18 x 30 same as 9 x 60 = 540
   c. 20 x 125 same as 10 x 250 = 2500
   d. 350 x 220 same as 700 x 110 = (700 x 100) + (700 x 10) = 70000 + 7000 = 77000

B) Instructions Given to the Students…
   a. Provide the students a VISUAL representation of the number equation
      i. Examples…
         1. Number equation could be written on a white board for entire class
         2. Presented on a SMART Board for entire class
         3. Paper worksheet – specific to a student
         4. Written on the desk – specific to a student
         5. Written on an individual white board – specific to a student
      ii. Instruct students to solve the equation by finding the PRODUCT using an efficient/easy strategy.
         1. Note – do not direct the students or imply to the students to use the specific strategy of ‘halving / doubling’ – an important part of the assessment is to decide if a student will identify the numbers in the equation will be best suited for a specific strategy.
      iii. Instruct students they will need to explain how they found the PRODUCT orally.
      iv. Instruct students if they need to write any information down to help them keep track of the steps they are encouraged to do so…Please note – do not provide them what information they are to write down… Redirect with ‘Think of things that will help make it easier to find the SUM.’
         1. Examples of information a student my use.

   ![Example Image]

C) Look for / listen for …
   a. Possible Student Responses…
      i. 50 x 14 =
         1. If a double fifty I get one hundred because its’ easier to multiply by one hundred. If I double one of the factors I have to cut the other factor in half to keep the equation balanced. Fourteen cut in half is seven. Fifty multiplied by fourteen is the same as one hundred multiplied by seven which equals seven hundred.
D) **Assessment**
   a. Scale is … Yes / No
      i. To successfully achieve this outcome a student must achieve the criteria below…
         1. Provide the correct PRODUCT
            a. They must use the correct vocabulary to explain an efficient strategy correctly.

**Task J – Front End Multiplication or Distributive Principle**

A) **Description of task**
   a. *Description of the strategy* - This strategy involves students starting with finding the product of the digit in the greatest place value position of the multi digit factor and the single digit factor. The student continues to find the product of the next greatest digit and the single digit factor until all the digits in the multi digit number have multiplied by the single digit factor. The student then adds all of the ‘sub products’ to provide a product of the initial equation.
      i. Single digit whole number & two-digit whole number
      ii. Factors will not include the digit zero
      iii. The numbers used must create regrouping
      iv. # x ## or ## x #
      v. Sample questions and student responses could include…
         1. \[68 \times 3 = (60 \times 3) + (8 \times 3) = 180 + 24 = (180 + 20) + 4 = 204\]
         2. \[8 \times 67 = (8 \times 60) + (8 \times 7) = 480 + 56 = (480 + 20) + 36 = 536\]

B) **Instructions Given to the Students …**
   a. Provide the students a VISUAL representation of the number equation
      i. Examples…
         1. Number equation could be written on a white board for entire class
         2. Presented on a SMART Board for entire class
         3. Paper worksheet – specific to a student
         4. Written on the desk – specific to a student
         5. Written on an individual white board – specific to a student
      ii. Instruct students to solve the equation by finding the PRODUCT using an efficient / easy strategy.
         1. Note – do not direct the students or imply to the students to use the specific strategy of ‘halving / doubling’ – an important part of the assessment is to decide if a student will identify the numbers in the equation will be best suited for a specific strategy.
      iii. Instruct students they will need to explain how they found the PRODUCT orally.
      iv. Instruct students if they need to write any information down to help them keep track of the steps they are encouraged to do so…Please note – do not provide them what information they are to write down… Redirect with ‘Think of things that will help make it easier to find the SUM.’
1. Examples of information a student may use.

\[
\begin{align*}
1. & \quad 68 \times 3 = \underline{204} \\
   & \quad 60 \times 3 = 180 \quad (6 \times 3 = 18) \\
   & \quad 8 \times 3 = 24 \\
2. & \quad 8 \times 67 = (8 \times 60) + (8 \times 7) \\
   & \quad 480 + 56 \\
   & \quad \underline{536}
\end{align*}
\]

C) Look for / listen for …
   a. Possible Student Responses
      i. 68 x 3 =
          1. I will split the 67 into 60 and 7 – 8 groups 60 is 480 and 8 groups of 7 is 56. There for 480 and 20 from the 56 is 500 and then 500 and 36 left from the 56 is 536. Therefore the product of 8 groups of 67 is 536

D) Assessment…
   a. Scale is … Yes / No
      i. To successfully achieve this outcome a student must achieve the criteria below…
         1. Provide the correct PRODUCT
         2. They must use the correct vocabulary to explain an efficient strategy correctly
Grade 7 Oral Math Calculations

Task A – Compensation (Rational Numbers)

A) Description of task...
   a. Description of the strategy - This strategy for subtraction involves the student recognizing that the subtrahend can be easily changed into a multiple of a tenth or hundredth or thousandth. The student will adjust the subtrahend by adding or removing a part of the subtrahend to create an ‘easier number’ to work with. The student will then adjust the other subtrahend or sum to compensate for the original adjustment
      i. Use rational numbers in the hundredths or thousandths – use the same type (ex. both hundredths for one question)
      ii. Either minuend or subtrahend will be a number that can be easily changed into a ‘friendly number’ (multiple of hundredths, or thousandths)
      iii. Use these types of questions
         1. 82 hundredths less 59 hundredths
         2. 0.321 – 0.199
         3. __________ = 527 thousandths less 134 thousandths

B) Instructions Given to the Students
   a. Provide the students a VISUAL representation of the number equation
      i. Examples…
         1. Number equation could be written on a white board for entire class
         2. Presented on a SMART Board for entire class
         3. Paper worksheet – specific to a student
         4. Written on the desk – specific to a student
         5. Written on an individual white board – specific to a student
   b. Instruct students to solve the equation by finding the DIFFERENCE using an efficient / easy strategy.
   c. Instruct students they will need to explain how they found the DIFFERENCE orally.
   d. Students are not to write any information down to help them in these questions. This is a completely oral activity.

C) Look for / listen for…
   a. Possible Student Responses…
      i. 82 hundredths less 59 hundredths
         1. The difference is 23 hundredths. I decided to change 59 hundredths to 60 hundredths to make the equation friendlier to work with. I know the difference between 82 hundredths and 60 hundredths is 22 hundredths. There for the difference between 82 hundredths and 59 hundredths would be one more hundredths. That’s how I know the difference is 23 hundredths.
         2. I know the difference between 82 hundredths and 59 hundredths is 23 hundredths. When I looked at the question I saw the subtrahend could be changed from 59 hundredths to 60 hundredths just by adding one one
hundredth. 60 hundredths are a lot easier to work with than 59 hundredths. I know if I add one one hundredth to the subtrahend I must the same amount to the minuend. This will keep the difference between the parts the same – that’s really important to remember. That makes the minuend 83 hundredths. The difference between 83 hundredths and 60 hundredths is 23 hundredths.

3. The difference is 23 hundredths. I decided to change the 82 hundredths to 80 hundredths to make the equation friendlier to work with. I know the difference between 80 hundredths and 59 hundredths is 21 hundredths. Therefore, the difference between 82 hundredths and 59 hundredths is 2 more hundredths. That’s how I know the difference is 23 hundredths.

D) Assessment

a. Scale is … Yes / No
   i. To successfully achieve this outcome a student must achieve the criteria below…
      1. Provide the correct DIFFERENCE
      2. They must use the correct vocabulary
      3. Correctly explain an efficient strategy
         a. See student responses for examples

Task B – Compensation (Mixed Numbers)

A) Description of task…

a. Description of the strategy - This strategy for subtraction involves the student recognizing that the subtrahend can be easily changed into a friendly number. The student will adjust the subtrahend by adding or removing a part of the subtrahend to create an ‘easier number’ to work with. The student will then adjust the other subtrahend or sum to compensate for the original adjustment.
   ii. 2 mixed numbers with decimals up to the hundredths
   iii. Numbers must be less than 1000
   iv. Use these types of questions
      1. $715.00 – $44.90 =
      2. ___ = 187.3 – 136.8
      3. $22.54 - $9.27 =

B) Instructions Given to the Students

a. Provide the students a VISUAL representation of the number equation
   i. Examples…
      1. Number equation could be written on a white board for entire class
      2. Presented on a SMART Board for entire class
      3. Paper worksheet – specific to a student
      4. Written on the desk – specific to a student
      5. Written on an individual white board – specific to a student

b. Instruct students to solve the equation by finding the DIFFERENCE using an efficient / easy strategy.
c. Instruct students they will need to explain how they found the DIFFERENCE orally.
d. Students are not to write any information down to help them in these questions. This is a completely oral activity.

C) Look for / listen for…
a. Possible Student Responses…
   i. $715.00 less $44.90
      1. The difference is $670.10. I decided to change $44.90 to $45.00 by adding $0.10 to make the equation friendlier to work with. I know if I add any amount to the subtrahend I need to add that same amount to the minuend to keep the difference between the 2 amounts balanced. The equation now reads $715.10 less $45.00 which is easier to work with. I decided to remove $15 from both numbers to making the numbers $700.10 and $30.00. That makes the numbers really easy to work with as the difference between $700.10 and $30.00 is $670.10. There for the difference between $715.00 and $44.90 is $670.10.
   ii. ___ = 187.3 – 138.8
      1. I know the difference between 187.3 and 138.8 is 48.5. When I looked at the question I saw the subtrahend could be changed from 138.8 to 140 by adding one and two hundredths. 140 is easier to work. I know if I add one and two hundredths to the subtrahend I must the same amount to the minuend. This will keep the difference between the parts the same – that’s really important to remember. That makes the minuend 188.5. The difference between 188.5 and 140 is 48.5.
   iii. $24.89 - $6.94 =
      1. The difference is $17.95. I decided to change the $6.94 to $7.00 by adding $0.06 to make the equation friendlier to work with. That made the equation $24.89 - $7.00 which has a difference of $17.89. But I added $0.06 to the subtrahend I then need to add $0.06 to the difference to make the original equation balance. That makes the difference of $17.95 between $24.89 and $6.94.

D) Assessment
   a. Scale is … Yes / No
      i. To successfully achieve this outcome a student must achieve the criteria below…
         1. Provide the correct DIFFERENCE
         2. They must use the correct vocabulary
         3. Correctly explain an efficient strategy
            a. See student responses for examples
Task C – Compensation (Integers)

A) Description of task...
   a. Description of the strategy - This strategy for subtraction involves the student recognizing that the subtrahend can be easily changed into a friendly number. The student will adjust the subtrahend by adding or removing a part of the subtrahend to create an ‘easier number’ to work with. The student will then adjust the minuend or difference to compensate for the original adjustment.
      i. Two two-digit integers
      ii. Use these types of questions
          1. \(-44 - 78 = \)
          2. \(35 \text{ take away negative } 49\)
          3. \(29 \text{ less } 36\)

B) Instructions Given to the Students
   a. Provide the students a VISUAL representation of the number equation
      i. Examples…
         1. Number equation could be written on a white board for entire class
         2. Presented on a SMART Board for entire class
         3. Paper worksheet – specific to a student
         4. Written on the desk – specific to a student
         5. Written on an individual white board – specific to a student
   b. Instruct students to solve the equation by finding the DIFFERENCE using an efficient / easy strategy.
   c. Instruct students they will need to explain how they found the DIFFERENCE orally.
   d. Students are not to write any information down to help them in these questions. This is a completely oral activity.

C) Look for / listen for …
   a. Possible Student Responses…
      i. \(-44 - 78\)
         1. Negative forty-four less seventy-eight is negative one hundred twenty-two. I solved this by first making positive seventy-eight into positive eighty by adding a positive two. Then I added a positive two to negative forty-four and that makes it negative forty-two. That makes the equation negative forty-two less positive eighty which is negative one hundred twenty.
      ii. \(35 \text{ take away negative } 49\)
         1. The difference is 84. I made negative 49 into a negative 50 by adding negative 1 to make a ‘friendly number’. I know that whatever I do to the subtrahend I need to do to the minuend to keep the difference between the two amounts balanced. That makes the equation 34 take away negative 50 which is 84. There for \(35 - (-49) = 84\)
iii. 22 – 36 =

1. I know that I can make positive 22 easier to work with by taking 2 away.
   That makes twenty. That makes the equation positive 20 take away positive 36 which is negative 16. But I need to take away the two from the answer to balance off what I did to start. There for the difference between positive 22 and positive 36 is negative fourteen.

D) Assessment
a. Scale is … Yes / No
   i. To successfully achieve this outcome a student must achieve the criteria below…
      1. Provide the correct DIFFERENCE
      2. They must use the correct vocabulary
      3. Correctly explain an efficient strategy
         a. See student responses for examples

Task D – Quick Subtraction (Rational Numbers)
A) Description of task…
   a. Description of the strategy - This strategy for subtraction involves applying student’s knowledge in recognizing that calculating the difference between the minuend and the subtrahend does not require borrowing. This strategy will also rely on student understanding the value of each digit in the number to correctly use the math vocabulary to explain their understanding. This is a great foundation strategy if students use Front End Subtraction (starting at the left and working right –greatest place value to the least place value) as well to solve these types of questions.
      i. 2 - three digit rational numbers and / or mixed numbers less than 100
      ii. The digit zero is not used in either number
      iii. Use these types of questions
         1. 329 thousandths less 118 thousandths =
         2. 8 and 79 hundredths less 7 and 37 hundredths =
         3. 45.6 – 34.3 =

B) Instructions Given to the Students
   a. Provide the students a VISUAL representation of the number equation
      i. Examples…
         1. Number equation could be written on a white board for entire class
         2. Presented on a SMART Board for entire class
         3. Paper worksheet – specific to a student
         4. Written on the desk – specific to a student
         5. Written on an individual white board – specific to a student
   b. Instruct students to solve the equation by finding the DIFFERENCE using an efficient / easy strategy.
   c. Instruct students they will need to explain how they found the DIFFERENCE orally.
   d. Instruct students if they need to write any information down to help them keep track of the steps they are encouraged to do so…Please note – do not provide them what information they are to write down… Redirect with ‘Think of things that will help make it easier to find the DIFFERENCE.’
C) Look for / listen for …
   a. Possible Student Responses…
      i. 329 thousandths – 118 thousandths =
         1. When I looked at the minuend and subtrahend the digits didn’t need any borrowing if I used the algorithm. I just started and found the difference between 300 thousandths and 100 thousandths and that’s 200 thousandths. Then, I moved to the hundredths place and found the difference between 20 thousandths and 10 thousandths that’s 10 thousandths. And then looked at the thousandths place and the difference between 9 thousandths and 8 thousandths is 1 thousandth. I then put the 200 thousandths with 10 thousandths and 1 thousandth to have a difference of 211 thousandths.
      ii. 8 and 79 hundredths less 7 and 37 hundredths =
         1. I realized that I did not need to borrow to solve for this difference as all the digits in the minuend are greater than the digits in the subtrahend. I the know the difference between 8 wholes and 7 wholes is 1 whole. Than the difference between 70 hundredths and 30 hundredths is 40 hundredths and finally the difference between 9 hundredths and 7 hundredths is 2 hundredths. I combined 1 whole with 40 hundredths and 7 hundredths to make one and forty-seven hundredths. That is the difference between 8.79 and 7.37.

D) Assessment
   a. Scale is … Yes / No
      i. To successfully achieve this outcome a student must achieve the criteria below…
         1. Provide the correct DIFFERENCE
         2. They must use the correct vocabulary
         3. Correctly explain an efficient strategy

Task E – Repeated Halving
A) Description of task…
a. Description of the strategy - This strategy involves students understanding the relationship between 2 – 4 – 8 and recognizing when these numbers are the divisor. Students need to understand that cutting a number in half and in half again is creating quarters or dividing into four parts. Students need to understand that cutting a number in half and in half again and in half again is creating eighths or dividing into eight parts.
   1. Dividend is 3-digit number and divisor is a 2 / 4 or 8.
   2. ### ÷ (2 or 4 or 8) =
   3. Use these types of questions
      a. 0.300 ÷ 4 =
      b. 1.56 ÷ 4 =
      c. 0.2 ÷ 8 =
B) Instructions Given to the Students
   a. Provide the students a VISUAL representation of the number equation
      i. Examples…
         1. Number equation could be written on a white board for entire class
         2. Presented on a SMART Board for entire class
         3. Paper worksheet – specific to a student
         4. Written on the desk – specific to a student
         5. Written on an individual white board – specific to a student
   b. Instruct students to solve the equation by finding the QUOTIENT using an efficient / easy strategy.
   c. Instruct students they will need to explain how they found the QUOTIENT orally.
   d. Instruct students if they need to write any information down to help them keep track of the steps they are encouraged to do so…Please note – do not provide them what information they are to write down…Redirect with ‘Think of things that will help make it easier to find the QUOTIENT.’

C) Look for / listen for …
   a. Possible Student Responses…
      i. 300 ÷ 4 =
         1. If I cut three hundredths in half that is one hundred fifty hundredths and if cut one hundred fifty hundredths in half that’s seventy-five thousandths. Therefore three hundredths divided by 4 is seventy-five thousandths.
      ii. 1.56 ÷ 4 =
         1. Half of 1.00 is 0.50 and half of 0.50 is 0.25. Then I cut 0.56 in half that’s 0.28 and then half of 0.28 is 0.14. Then I combined 0.25 and 0.14 to make 0.39. Therefore 1.56 divided by 4 is 0.39.
      iii. 0.2 ÷ 8 =
         1. 0.2 cut in half is one tenth; one tenth cut in half is five hundredths and five hundredths cut in half is twenty-five thousandths. Therefore 0.2 divided by 8 is twenty-five thousandths.

D) Assessment
   a. Scale is … Yes / No
      i. To successfully achieve this outcome a student must achieve the criteria below…
         1. Provide the correct QUOTIENT
         2. They must use the correct vocabulary
         3. Correctly explain an efficient strategy

Task F – Front End Subtraction (Integers)
A) Description of task…
   a. Description of the strategy - This strategy for subtraction involves the student starting at the left place value of the minuend and moving to the right. A student will find the difference of the digits in the greatest place-value position of the minuend and subtrahend first and then continues to find the difference of the digits in lesser place value positions
until all the place positions have a sub total. The student will add each of the subtotals to find the DIFFERENCE of the equation.

1. Integers – two digits
2. No decimal numbers
3. The digit zero is not used in either the minuend and/or subtrahend.
4. ## - ## =
5. Use these types of questions…
   a. 37 take away 56 =
   b. -42 less 31

C) Instructions Given to the Students
   a. Provide the students a VISUAL representation of the number equation
      i. Examples…
         1. Number equation could be written on a white board for entire class
         2. Presented on a SMART Board for entire class
         3. Paper worksheet – specific to a student
         4. Written on the desk – specific to a student
         5. Written on an individual white board – specific to a student
   b. Instruct students to solve the equation by finding the DIFFERENCE using an efficient/easy strategy.
   c. Instruct students they will need to explain how they found the DIFFERENCE orally.
   d. Instruct students if they need to write any information down to help them keep track of the steps they are encouraged to do so…Please note – do not provide them what information they are to write down…Redirect with ‘Think of things that will help make it easier to find the DIFFERENCE.’
   e. If the student does not use the ‘Count on / Count back strategy, please specifically direct student to use the strategy.

D) Look for / listen for …
   a. Possible Student Responses…
      i. 37 take away 56 =
         1. To find the difference between positive 37 and positive 56, I decided to start at the far left place value place of the minuend. The difference between positive 37 and positive 50 is negative 27 and then all that was left to do was take away positive 6 from negative 27 and that’s negative 19. Therefore the difference between 37 and 56 is negative 19.
      ii. -47 less 34
         1. I started by finding the difference between negative 42 and positive 30 and that’s negative 77. Then I found the difference between negative 77 and positive 4 and that’s negative 81. Therefore the difference between negative 47 and positive 34 is negative 81.

E) Assessment
   a. Scale is … Yes / No
      i. To successfully achieve this outcome a student must achieve the criteria below…
         1. Provide the correct DIFFERENCE.
2. They must use the correct vocabulary
3. Correctly explain an efficient strategy

**Task G – Partial Quotients**

**A) Description of task...**

a. Description of the strategy - This strategy involves students recognizing that dividend can be split into parts that can be divided evenly by the divisor. Students will require a good understanding of part / part / whole relationships.
   i. Dividend is 3-digit number and divisor is a single digit number.
   ii. ### ÷ # =
   iii. Use these types of questions
       1. 222 ÷ 3 =
       2. 511 ÷ 7 =

**B) Instructions Given to the Students**

a. Provide the students a VISUAL representation of the number equation
   i. Examples...
      1. Number equation could be written on a white board for entire class
      2. Presented on a SMART Board for entire class
      3. Paper worksheet – specific to a student
      4. Written on the desk – specific to a student
      5. Written on an individual white board – specific to a student
b. Instruct students to solve the equation by finding the QUOTIENT using an efficient / easy strategy.
   c. Instruct students they will need to explain how they found the QUOTIENT orally.
   d. Instruct students if they need to write any information down to help them keep track of the steps they are encouraged to do so...Please note – do not provide them what information they are to write down... Redirect with ‘Think of things that will help make it easier to find the QUOTIENT.’

**C) Look for / listen for ...**

a. Possible Student Responses...
   i. 222 ÷ 3 =
      1. If I break 222 into 210 and 12 which will make it easier to divide the parts. 2100 ÷ 3 is 70 and 12 ÷ 3 is 4. I than combine the partial products 70 and 4 to give a quotient of 74 for 222 ÷ 3.
   ii. 511 ÷ 7 =
      1. I know that 49 is a multiple of 7, there for 490 must be a multiple of 7. I split apart 511 into 490 and 21. 490 ÷ 7 is 70 and 21 ÷ 7 is 3. I than combine the partial products 70 and 3 to make 73. There for 511 ÷ 7 is 73.

**D) Assessment**

a. Scale is... Yes / No
   i. To successfully achieve this outcome a student must achieve the criteria below...
      2. Provide the correct QUOTIENT
      3. They must use the correct vocabulary
      4. Correctly explain an efficient strategy
Grade 8 Oral Math Calculations

Addition

Task A – Finding Compatibles (Make 10,000)

A) Description of task...

   a. Description of the strategy - This strategy for addition involves looking for pairs of numbers that combine to make 1000 or 10,000. The term finding friendly numbers is used to describe this strategy.
      i. Four digit whole numbers
      ii. Numbers are multiples of 100
      iii. ##00
      iv. Maximum number of numbers in the string is 7
      v. Use these types of questions
         1. 3600 + 7300 + 2700 + 4400 + 6200 + 5100 + 4900 =

B) Instructions Given to the Students...

   a. Provide the students a visual representation of the number equation
      i. Examples...
         1. Number equation could be written on a white board for entire class
         2. Presented on a SMART Board for entire class
         3. Paper worksheet – specific to a student
         4. Written on the desk – specific to a student
         5. Written on an individual white board – specific to a student
   b. Instruct students to solve the equation by finding the SUM using an efficient / easy strategy.
      i. Note – do not direct the students or imply to the students to use the specific strategy of ‘Finding 1000 or 10,000 – an important part of the assessment is to decide if a student will identify the numbers in the equation will be best suited for a specific strategy.
   c. Instruct students they will need to explain how they found the SUM orally.
   d. Instruct students if they need to write any information down to help them keep track of the steps they are encouraged to do so...Please note – do not provide them what information they are to write down... Redirect with ‘Think of things that will help make it easier to find the SUM.’
      i. Examples of information a student may use.
         1. Circle the pairs that make ten thousand
         2. Cross out the pair of numbers that make a ten thousand and write down the sub total
         3. Draw a line from one number to its friendly partner that makes ten thousand.
C) **Look for / Listen for …**

a. Possible Student Response

i. $3600 + 7300 + 2700 + 4400 + 6200 + 5100 + 4900 = 30,000$

1. I looked for pairs of addends that make would make ten thousand or one thousand to make it easier. I know the seventy-three hundred and twenty-seven hundred make a ten thousand because seventy hundred and twenty hundred is ninety hundred and three hundred and seven hundred make ten thousand // ninety hundred or nine thousand and ten hundred or one thousand makes ten thousand. The four thousand from four thousand four hundred and the six thousand from the six thousand two hundred makes another ten thousand. And then I saw that fifty-one hundred and forty-nine hundred makes one hundred hundreds which is another ten thousand. I than added all three ten thousands which makes thirty thousand. I took the three thousand from the three thousand six hundred and added it to the thirty thousand to make thirty-three thousand. I than saw that the six hundred from the thirty-six hundred and four hundred from the forty-four hundred would make one thousand and added it to the thirty-three thousand to make thirty-four thousand and all that was left to add from the string of numbers to the sub total was the two hundred from the six thousand two hundred and that makes thirty-four thousand two hundred. That is the Sum of the list of seven numbers.

D) **Assessment…**

a. Scale is … Yes / No

i. To successfully achieve this outcome a student must achieve the criteria below…

1. Provide the correct SUM

   a. They must use the correct vocabulary to explain an efficient strategy correctly

**Task B – Finding Compatibles (Make 1.0)**

A) **Description of task…**

a. *Description of the strategy - This strategy for addition involves looking for pairs of numbers that combine to make 1. The term finding friendly numbers is used when describing this strategy.*
i. Three-digit rational numbers in decimal format
ii. Addends are less than one whole
iii. 0.##
iv. Maximum number of numbers in the string is 5
v. Use these types of questions
   1. \(0.36 + 0.73 + 0.27 + 0.44 + 0.62 =\)

B) Instructions Given to the Students
   a. Provide the students a visual representation of the number equation
      i. Examples…
         1. Number equation could be written on a white board for entire class
         2. Presented on a SMART Board for entire class
         3. Paper worksheet – specific to a student
         4. Written on the desk – specific to a student
         5. Written on an individual white board – specific to a student
   b. Instruct students to solve the equation by finding the SUM using an efficient/easy strategy.
      i. Note – do not direct the students or imply to the students to use the specific strategy of ‘Finding 1 whole’ – an important part of the assessment is to decide if a student will identify the numbers in the equation will be best suited for a specific strategy.
   c. Instruct students they will need to explain how they found the SUM orally.
   d. Instruct students if they need to write any information down to help them keep track of the steps they are encouraged to do so…Please note – do not provide them what information they are to write down…Redirect with ‘Think of things that will help make it easier to find the SUM.’
      i. Examples of information a student may use.
         1. Circle the pairs that make one whole
         2. Cross out the pair of numbers that make one whole and write down the sub total
         3. Draw a line from one number to its friendly partner that makes one whole.

C) Look for / listen for …
   a. Possible Student Responses
      i. \(0.36 + 0.73 + 0.27 + 0.44 + 0.62 =\)
         1. I first looked at each of the digits in the tenths place to see if there were any pairs that would make a whole. I looked at thirty-six hundredths and seventy-three hundredths and instantly knew it was more than one whole. I than decided to look for addends that had either six tenths to partner with thirty-six hundredths or an addend with two tenths to partner with seventy-three hundredths. I tried finding the sum of seventy-three hundredths and twenty-seven hundredths and realized it was one whole – seven tenths and two tenths are nine tenths and three hundredths and seven hundredths makes ten hundredths which is one tenth. I added the nine tenths and one tenth to make the whole. I then used the four hundredths from forty-four hundredths and thirty-six hundredths to make forty hundredths. Then I add the two hundredths from sixty-two hundredths to the forty hundredths to make forty-two hundredths. Then I added the parts - the two wholes and the forty-two hundredths to make two and forty-two hundredths as the Sum of the string of numbers.
D) **Assessment…**
   a. Scale is … Yes / No
      i. To successfully achieve this outcome a student must achieve the criteria below…
         1. Provide the correct PRODUCT
         2. They must use the correct vocabulary to explain an efficient strategy correctly

**Task C – Quick Addition**

A) **Description of task**
   a. *Description of the strategy* - This strategy for addition involves applying student’s knowledge in recognizing that addends in the number equation do not require regrouping therefore calculating the SUM is less difficult. This strategy relies on students recognizing that ‘regrouping’ is not required to find the sum / product. This strategy will also rely on student understanding the value of each digit in the number to correctly use the math vocabulary to explain their understanding. This is a great foundation strategy if students use Front End Addition (starting at the left and working right – greatest place value to the least place value) as well to solve these types of questions.
      i. Two Mixed Numbers / in fraction format
      ii. Sum less than ten
      iii. # #/# + # #/# (using ½’s ¼’s 1/8’s & 1/16’s)
      iv. Use these types of questions
         1. 2 ¾ + 1 =
         2. 5 ¼ + 3

B) **Instructions Given to the Students…**
   a. Provide the students a **VISUAL** representation of the number equation
      i. Examples…
         1. Number equation could be written on a white board for entire class
         2. Presented on a SMART Board for entire class
         3. Paper worksheet – specific to a student
         4. Written on the desk – specific to a student
         5. Written on an individual white board – specific to a student
   b. Instruct students to solve the equation by finding the SUM using an efficient / easy strategy.
      i. Note – do not direct the students or imply to the students to use the specific strategy of ‘Quick Addition’ – an important part of the assessment is to decide if a student will identify the numbers in the equation will be best suited for a specific strategy.
   c. Instruct students they will need to explain how they found the SUM orally.
   d. Students are not to write any information down to help them in these questions. This completely orally activity.

C) **Look for / listen for…**
   a. Possible Student Responses
      i. 2 ¾ + 1 =
         1. I added the whole numbers and that makes three. I used two eights from the three eights and added it to the three quarter to make another whole and that makes four. That works because two eighths is the same as one quarter. That leaves one eighth left from the three eighths to add with the four wholes to make a sum of four and one eighth.
ii. 5 ½ + 3
1. Seven sixteenths is one sixteenth less than a half. I add the half from five and a half and another half to make whole and took away one sixteenth to make fifteen sixteenths. I than added the five wholes, the three wholes and the fifteen sixteenths and that’s eight wholes and fifteen sixteenths.

D) Assessment
a. Scale is … Yes / No
i. To successfully achieve this outcome a student must achieve the criteria below…
   1. Provide the correct SUM
   2. They must use the correct vocabulary to explain an efficient strategy correctly

Task D – Break Up and / or Bridge
A) Description of task…
   a. Description of the strategy - This strategy for addition involves the student finding the sum of the first addend and greatest place value of the second addend, continuing to add next greatest place value of second addend to the sub total until the second addend has been added in full.
      i. Two – Three digit mixed numbers
      ii. Both addends are in decimal format
      iii. SUM is less than ten
      iv. No use of the digit zero
      v. Regrouping is required for one of the place value positions
      vi. .## + #.##
      vii. Use these types of questions
         1. 7.46 + 4.23
         2. 5.54 + 3.72

B) Instructions Given to the Students …
   a. Provide the students a VISUAL representation of the number equation
      i. Examples…
         1. Number equation could be written on a white board for entire class
         2. Presented on a SMART Board for entire class
         3. Paper worksheet – specific to a student
         4. Written on the desk – specific to a student
         5. Written on an individual white board – specific to a student
      ii. Instruct students to solve the equation by finding the SUM using an efficient / easy strategy.
         1. Note – do not direct the students or imply to the students to use the specific strategy of ‘Break Up and Bridge’ – an important part of the assessment is to decide if a student will identify the numbers in the equation will be best suited for a specific strategy.
      iii. Instruct students they will need to explain how they found the SUM orally.
      iv. Instruct students if they need to write any information down to help them keep track of the steps they are encouraged to do so…Please note – do not provide them
what information they are to write down… Redirect with ‘Think of things that will help make it easier to find the SUM.’

1. Examples of information a student my use.
   a. Write the sub total of place value columns

   1. $7.46 + 4.23 = 11.69$

   2. $5.54 + 3.72 = 9.26$

C) **Look for / listen for …**
   a. Possible Student Responses…
      i. $7.46 + 4.23 =$
         1. Seven and forty-six hundredths and four is eleven and forty-six hundredths
            // eleven and forty-six hundredths add twenty hundredths is eleven and sixty-six hundredths
            // eleven and sixty-six hundredths and three hundredths is eleven and sixty-nine hundredths
      ii. $5.54 + 3.72$
         1. Five and fifty-four hundredths increased by three is eight and fifty-four hundredths.
            Eight and fifty-four hundredths plus seven tenths – I am going to take five tenths and add it to the
            five tenths in eight and fifty-four hundredths it makes another whole. That will give me nine and four
            hundredths. There are two more tenths from the seven tenths to add to the nine and four tenths that
            makes nine and twenty-four hundredths. All that’s left to add is two more hundredths to the nine
            and twenty-four hundredths that makes nine and twenty-six hundredths.

D) **Assessment…**
   a. Scale is … Yes / No
      i. To successfully achieve this outcome a student must achieve the criteria below…
         1. Provide the correct SUM
         2. They must use the correct vocabulary
         3. Correctly explain an efficient strategy
            a. See student responses for examples
**Multiplication**

**Task E – ‘Halving and Doubling’**

A) **Description of task**
   a. *Description of the strategy - This strategy involves students understanding the relationship that when you half one factor and double the other factor the product will not change. The goal in using this strategy is to create easier factors to multiply. The key for students in using this strategy is to recognize factors that by halving or doubling will create easy numbers.*
   
i. Two – two or three digit rational numbers
   
ii. Factors are in decimal format
   
iii. One of the two factors must be even
   
iv. 0.# (even) x 0.##
   
v. 0.## x 0.## (even)
   
vi. Use these types of questions
      1. 0.4 x 0.13 same as 0.2 x 0.26 is the same as 0.1 x 0.54 = 0.054
      2. 0.18 x 0.3 same as 0.09 x 0.6 = 0.054

B) **Instructions Given to the Students…**
   
a. Provide the students a **VISUAL** representation of the number equation
   
i. Examples…
      1. Number equation could be written on a white board for entire class
      2. Presented on a SMART Board for entire class
      3. Paper worksheet – specific to a student
      4. Written on the desk – specific to a student
      5. Written on an individual white board – specific to a student
   
b. Instruct students to solve the equation by finding the PRODUCT using an efficient / easy strategy
   
i. Note – do not direct the students or imply to the students to use the specific strategy of ‘halving / doubling’ – an important part of the assessment is to decide if a student will identify the numbers in the equation will be best suited for a specific strategy.
   
c. Instruct students they will need to explain how they found the PRODUCT orally.
   
i. Students are not to write any information down to help them in these questions. This completely orally activity.

C) **Look for / listen for …**
   
a. Possible Student Responses…
   
i. 0.4 x 0.13
      1. I can cut four tenths in half that’s two tenths and double thirteen hundredths and that’s twenty-six hundredths – than I will cut two tenths in half that’s one tenths and double twenty-six hundredths to give me fifty-two hundredths. One tenth of fifty-two hundredths is fifty-two thousandths
   
ii. 0.18 x 0.3
      1. If I cut eighteen hundredths in half that is nine hundredths – to keep the equation balanced I have to double three tenths which is six tenths – that makes it nine hundredths of six tenths which is fifty-four thousandths

D) **Assessment**
   
a. Scale is … **Yes / No**
   
i. To successfully achieve this outcome a student must achieve the criteria below…
      1. Provide the correct PRODUCT
2. They must use the correct vocabulary
3. Correctly explain an efficient strategy
   a. See student responses for examples

Task F – Quick Multiplication

A) Description of task...
   a. Description of the strategy - This strategy for multiplication involves applying student’s knowledge in recognizing that factors in the number equation do not require extensive regrouping therefore calculating the Product is less difficult. This strategy relies on students recognizing the relationships between the digits / numbers in the equation creates simplified equation. This strategy will also rely on student understanding the value of each digit in the number to correctly use the math vocabulary to explain their understanding. This is a great foundation strategy if students use Front End Multiplication (starting at the left and working right – greatest place value to the least place value) as well to solve these types of questions.
      i. One or Two Digit Whole Numbers
      ii. Rational Number in fraction or decimal format
      iii. #:/# x ## or # x #/# or # x #.
      iv. Use these types of questions
          1. of 12 =
          2. 8 sets of ¾
          3. 15 groups of 0.8

B) Instructions Given to the Students...
   a. Provide the students a VISUAL representation of the number equation
      i. Examples...
         1. Number equation could be written on a white board for entire class
         2. Presented on a SMART Board for entire class
         3. Paper worksheet – specific to a student
         4. Written on the desk – specific to a student
         5. Written on an individual white board – specific to a student
   b. Instruct students to solve the equation by finding the PRODUCT using an efficient / easy strategy
      i. Note – do not direct the students or imply to the students to use the specific strategy of ‘Quick Multiplication’ – an important part of the assessment is to decide if a student will identify the numbers in the equation will be best suited for a specific strategy.
   c. Instruct students they will need to explain how they found the PRODUCT orally.
   d. Students are not to write any information down to help them in these questions. This completely orally activity.

C) Look for / listen for …
   a. Possible Student Responses...
      i. 2/3 of 12
         1. One third of twelve is four – therefor two thirds of twelve would be eight.
      ii. 8 sets of ¾
         1. Eight split into half is four. If I split into half is two and that will be quarter of eight. A half and a quarter make three quarters therefor four and two make six which is eight sets of three quarters.
iii. 15 groups of 0.8
   1. I decided to split fifteen into a ten and five because it is easier to work with/ten sets of eight tenths that’s eight/five sets of eight tenths is four because five sets of eight tenths is half of ten sets of eight tenths. If I put it all back together, fifteen sets of eight tenths is eight and four that makes twelve.

D) Assessment…
a. Scale is … Yes / No
   i. To successfully achieve this outcome a student must achieve the criteria below…
   1. Provide the correct PRODUCT
   2. They must use the correct vocabulary to explain an efficient strategy correctly.

Task G – ‘Front End Multiplication or Distributive Principle
A) Description of task
   a. Description of the strategy - This strategy involves students starting with finding the product of the digit in the greatest place value position of the multi digit factor and the single digit factor. The student continues to find the product of the next greatest digit and the single digit factor until all the digits in the multi digit number have multiplied by the single digit factor. The student than adds all of the ‘sub products’ to provide a product of the initial equation.
   i. Single digit whole number & four-digit whole number
   ii. Four-digit whole number is multiple of 100
   iii. The numbers used must create one opportunity to regrouping
   iv. # x ##00 or ##00 x #
   v. Use these types of questions
      1. 6800 x 3 =
      2. 8 x 6700 =

B) Instructions Given to the Students
   a. Provide the students a VISUAL representation of the number equation
   i. Examples…
      1. Number equation could be written on a white board for entire class
      2. Presented on a SMART Board for entire class
      3. Paper worksheet – specific to a student
      4. Written on the desk – specific to a student
      5. Written on an individual white board – specific to a student
   b. Instruct students to solve the equation by finding the PRODUCT using an efficient / easy strategy.
      i. Note – do not direct the students or imply to the students to use the specific strategy of ‘halving / doubling’ – an important part of the assessment is to decide if a student will identify the numbers in the equation will be best suited for a specific strategy.
   c. Instruct students they will need to explain how they found the PRODUCT orally.
   d. Instruct students if they need to write any information down to help them keep track of the steps they are encouraged to do so…Please note – do not provide them what information
they are to write down… Redirect with ‘Think of things that will help make it easier to find the PRODUCT.’

i. Examples of information a student may use.

C) Look for / listen for …
   a. Possible Student Responses…
   i. $6800 \times 3 = \text{ }$
      1. I will split 6800 into 6000 and 800 — 6000 groups of 3 is 18 000 // than 800 groups of 3 is 2400 // 18 000 and the 2000 from the 2400 is 20 000 and 400 from the 24 00 and the 20 000 is 20 400. There for $6800 \times 3$ is 20 400

   ii. $8 \times 6700 =\text{ }$
      1. I will split the 6 700 into 6000 and 700 — 8 groups 6000 is 48 000 // and 8 groups of 700 is 5600 // 48 000 and 2000 from the 5600 is 50 000 and then 50 000 and 3600 left from the 5600 is 53 600. There for $8 \times 6700$ is 53 600

D) Assessment
   a. Scale is … Yes / No
      i. To successfully achieve this outcome a student must achieve the criteria below…
         1. Provide the correct PRODUCT
         2. They must use the correct vocabulary
         3. Correctly explain an efficient strategy
            a. See student responses for examples

Task H – Compensation
A) Description of task
   a. Description of the strategy - This strategy involves the student recognizing that one of the two factors in the equation can be easily changed in a more ‘friendly’ factor (i.e. multiple of 10 / 100 / 1000) by adding a minimal amount. When finding the product with the changed factor the student must recognize they need to compensate the product to equal the amount they changed the factor.
      i. Single digit whole number & three-digit whole number
      ii. Single digit whole number by two-digit rational number in decimal form
      iii. Regrouping is required for at least one place value combination
iv. # x ### and # x 0.## (use of proper vocabulary is required)

v. Sample questions and student responses could include…
   1. 8 x 598
   2. 0.68 x 4

B) Instruction Given to the Students
   a. Provide the students a VISUAL representation of the number equation
      i. Examples…
         1. Number equation could be written on a white board for entire class
         2. Presented on a SMART Board for entire class
         3. Paper worksheet – specific to a student
         4. Written on the desk – specific to a student
         5. Written on an individual white board – specific to a student

   b. Instruct students to solve the equation by finding the PRODUCT using an efficient / easy strategy.
      i. Note – do not direct the students or imply to the students to use the specific strategy of ‘halving / doubling’ – an important part of the assessment is to decide if a student will identify the numbers in the equation will be best suited for a specific strategy.

   c. Instruct students they will need to explain how they found the PRODUCT orally.

   d. Instruct students if they need to write any information down to help them keep track of the steps they are encouraged to do so…Please note – do not provide them what information they are to write down… Redirect with ‘Think of things that will help make it easier to find the PRODUCT.’
      i. Examples of information a student may use.

   C) Look for / listen for …
      a. Possible Student Responses…
         i. 8 x 598 = _____
            1. I will add two to five hundred ninety-eight to make six hundred because six hundred is way easier to work with. Eight groups of six hundred are forty-eight hundred. But I need to take away the extra two groups of eight which is sixteen from the forty-eight hundred. That is forty-seven hundred eighty-four.

         ii. 0.68 x 4 = _____
1. By adding two hundredths to sixty-eight hundredths it will make seventy hundredths which is easier to work with. That make the equation seventy hundredths of four; seventy hundredths of four is two and eight tenths. But, I have to take away what I added in which is two hundredths of four to make all balance. Two hundredths of four is eight hundredths. The difference between those sub products is two and seventy-two hundredths which is the product of sixty-eight hundredths of four.

D) **Assessment**
   a. Scale is … Yes / No
      i. To successfully achieve this outcome a student must achieve the criteria below…
         1. Provide the correct PRODUCT
         2. They must use the correct vocabulary
         3. Correctly explain an efficient strategy
            a. See student responses for examples

**Task I – Decomposition of Factors**

A) **Description of task**
   a. *Description of the strategy* - This strategy involves a student recognizing decomposing a factor inside the equation into other factors will make the equation easier to calculate mentally. As an example, it is critical that a student understands that multiplying by 12 in an equation is the same as multiplying by 4 and then multiplying that sub product by 3.
      i. Two – two digit whole numbers
      ii. Choose factors that are easily decomposed
      iii. ## x ##
         1. Use these types of questions
            a. 12 x 35 =
            b. 16 x 25

B) **Instructions Given to the Students**
   a. Provide the students a VISUAL representation of the number equation
      i. Examples…
         1. Number equation could be written on a white board for entire class
         2. Presented on a SMART Board for entire class
         3. Paper worksheet – specific to a student
         4. Written on the desk – specific to a student
         5. Written on an individual white board – specific to a student
   b. Instruct students to solve the equation by finding the PRODUCT using an efficient / easy strategy.
      i. Note – do not direct the students or imply to the students to use the specific strategy of ‘decomposing of factors’ – an important part of the assessment is to decide if a student will identify the numbers in the equation will be best suited for a specific strategy.
   c. Instruct students they will need to explain how they found the PRODUCT orally.
   d. Students are not to write any information down to help them in these questions. This completely orally activity.
C) **Look for / listen for …**
   a. Possible Student Responses…
      i. $12 \times 35 =$
         1. Instead of using the factor twelve I will replace it with two and six as factors in the equation. Thirty-five multiplied by two is seventy and seventy multiplied by six is four hundred twenty.
      ii. $16 \times 25 =$
          1. I know that four multiplied by four is sixteen. Therefore I am going to use four multiplied by four to replace sixteen in the equation because four multiplied by twenty-five is easy – it’s a hundred and hundred multiply by the other four is easy too it’s four hundred.

D) **Assessment …**
   a. Scale is … Yes / No
      i. To successfully achieve this outcome a student must achieve the criteria below…
         1. Provide the correct PRODUCT
         2. They must use the correct vocabulary
         3. Correctly explain an efficient strategy
            a. See student responses for example
Section III – Problem Solving

- Teachers will be provided a sample ‘math problem’ and rubric created by school division.
- Teachers can choose who they wish to administer the problem to – not all students need to be assessed in January and/or May of each school year.
- All students must be assessed and reported on at least once in a school year. If they are successful in January, there is no need to reassess in May.
- Oral assessment – all answers will be provided orally.

Grade 1 – Problem Solving

Problem – Applying Number Sense to orally solve a problem.

Numbers – Whole numbers 10 or less.

Operation – Finding a difference (subtraction)

Skill – Solving ‘Separate – Initial Unknown’ type of problems.

Sample Problem:

- Some teddy bears are in the basket. Billy takes 5 teddy bears out. There are now 3 teddy bears left in the basket. How many were in the basket to start with?

Grade 2 – Problem Solving

Problem – Applying Number Sense to orally solve a problem.

Numbers – The dividend is a two-digit whole number – not a multiple of 5. The divisor can be 4 or 5.

Operation – Dividing / Sharing

Skill – Solving division problems – understanding what to do with remainder

Sample Problem:

- All of the students in grade 2 where filling shoe boxes to send to away as presents to children in different countries. The students have brought 23 pencils to school to put in the boxes. Their teacher said there should be 5 pencils in each box. Please tell me how many boxes would you need if we put 5 pencils in each box?
Grade 3 – Problem Solving

Problem – Applying Number Sense to orally solve a problem.

Numbers – The dividend is a three-digit whole number – not a multiple of 5. The divisor is 10.

Operation – Dividing / Sharing

Skill – Solving division problems – understanding what to do with remainder

Sample Problem:

- The grade 3 classroom is planning a school celebration for Fun Day. They decided to have juice boxes at lunch. There are 327 students. Juice boxes come in packages of 10. How many packages of juice boxes are needed?

Grade 4 – Problem Solving

Problem – Applying Number Sense to orally solve a problem. Understanding the reminder. 2 step problem

Numbers – The dividend is four-digit whole number – use only non-zero digits. The divisor can be a multiple of 10 or 100.

Operation – Dividing with a reminder

Sample Problem:

- For months you have been saving money to buy a motor bike. The cost of the motor bike is $3988. You finally have enough money in your bank account. You are going pay using CASH money. Please tell me how $100 bills you will need from your bank account to pay for the motor bike? Will you receive any change back? If so how much?
Grade 5 – Problem Solving
Problem – *Applying Number Sense to orally solve a 2 step problem.*

Numbers – Mixed number in fraction format (fraction is unit fraction such as \( \frac{1}{2} \), \( \frac{1}{4} \), \( \frac{1}{5} \), \( \frac{1}{8} \), or \( \frac{1}{10} \)) and single digit whole numbers

Skill – Repeated Addition of Fractions

Sample Problem:

- Nolan’s dentist told him to brush his teeth for \( 2 \frac{1}{2} \) minutes every night. Nolan did as the dentist had instructed for 1 week. How many minutes did Nolan brush in total? His twin sister did the same thing. What was the total amount of time brushing for Nolan and his sister?

Grade 6 – Problem Solving
Problem – *Applying Number Sense to orally solve a 2 step problem.*

Numbers – *Two digit to four digit whole numbers*

Skill – Multiplication (specifically compensation strategy) // Doubling and Halving Relationship

Knowledge – Relationship between 50 and 100

Sample Problem:

- You and friend where asked to help set out ‘rally towels’ on each seat for the Oil Caps playoff game. The rally towels come in a box of 100. How many boxes will be required? If the arena has 50 rows with 48 seats in each row. How many rally towels will you need?
Grade 7 – Problem Solving
Problem – *Applying Number Sense to orally solve a 2 step problem.*

Numbers – Single digit integer numbers

Skill – Repeated addition of negative integer; subtracting an integer number from that sum; producing a difference that is a negative number

*Sample Problem:*

On Monday the temperature was +3 degrees. The next four days of the week it dropped 2 degrees per day. On the fifth day, it increased 4 degrees. What was the temperature?

Grade 8 – Problem Solving
Problem – *Applying Number Sense to orally solve a 2 step problem.*

Numbers – Rational numbers in fraction format & two digit whole numbers (multiples of 10)

Skill – Multiplying Fractions

Knowledge – Understanding the relationship a rational number has to its whole!

*Sample Problem:*

Your parents allow you to purchase a new Smart Phone. The agreement with your parents is you will pay \( \frac{3}{4} \) of the price of the phone and your parents will pay the rest. You have half of your share in your bank account. What fraction of the total cost of the phone do you have in your bank account?

In your bank account you have $150. What is the total cost of the phone?
<table>
<thead>
<tr>
<th>Criteria</th>
<th>Level 1</th>
<th>Level 2</th>
<th>Level 3</th>
<th>Level 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Understand the Problem</td>
<td>Is unable to restate the problem</td>
<td>Has difficulty stating the problem</td>
<td>Restates the problem</td>
<td>Rephrases the problem in own words</td>
</tr>
<tr>
<td>Makes a Plan</td>
<td>Struggles to model the problem</td>
<td>Models part of the problem</td>
<td>Models the problem correctly</td>
<td>Models the problem in an efficient or creative way</td>
</tr>
<tr>
<td>Carry out the plan / Look back</td>
<td>Solution is seriously flawed due to major errors in procedures; gives up if plan does not work</td>
<td>Solution is faulty due to several errors in procedures; hesitant to change plan</td>
<td>Solution is correct; though there may be minor procedural errors; revises the plan as necessary</td>
<td>Solution is correct and there are few if any, errors in procedures; flexible about the plan and revises it as necessary</td>
</tr>
<tr>
<td>Communicate</td>
<td>Provides an incomplete explanation of the results that is unclear and/or imprecise</td>
<td>Provides a partial explanation of the results that is somewhat clear and precise</td>
<td>Provides a complete, clear, and precise explanation of the results</td>
<td>Provides a thorough, clear, and insightful explanation of the results</td>
</tr>
</tbody>
</table>

Source: Prime – Number and Operations Background and Strategies