

Grade 4: Midyear

Universal Screener for Number Sense

Interview - Detailed Script and Rubrics, *print 1 copy/test*

Multiplication - 4.OA.A.1

Number Sense: Multiplication – Mental Math

1. Show the student the card $20 \times 4 = 80$. **“Read this card.”** Ensure that the student has read the card correctly. **“If you know that $20 \times 4 = 80$, how can you use that to solve 19×4 ?”**

| 3 | 2 | 1 |
|---|--|---------------------------------|
| Student uses $80 - 4$ to solve the problem. | Student solves 19×4 independently without using 20×4 . | Incorrect (e.g. $80 - 1 = 79$) |

Commentary: Students who do not see the connection between the two problems, and who resolve 19×4 from scratch need opportunities to continue developing their understanding of multiplication.

Place Value/Subtraction – 4.NBT.A.1

Number Sense: Subtraction – Mental Math

2. Show the card $2,000 - 10$. **“Read this card.”** (Ensure that the student reads correctly; correct them if necessary.) **“How much is $2,000 - 10$?”** If student is successful score as a 3. If not, remove the card and present $2,000 - 1$, and have the student read and solve that problem.

| 3 | 2 | 1 |
|-------------------------------|---|---------------------------------|
| Solves $2,000 - 10$ correctly | Solves $2,000 - 1$, but not $2,000 - 10$ | Unable to solve either problem. |

Commentary: Students should have a working understanding of the place value system as it relates to larger numbers that can be applied to mentally solve reasonable addition and subtraction problems into and beyond the thousands.

Division/Place Value – 4.NBT.A.1 & 4.NBT.B.6

Number Sense: Multiplication Mental Math & Decimal Place Value

3. Place the large array of 320 squares in front of the student. **“Here is an array with 320 squares. It has 10 rows. How many squares are in each row?”** If it helps the student to understand the task, restate the problem as, **“How many columns does it have?”**. Watch the student’s eyes. If the student begins to attempt to count the squares, ask, **“How can you solve this problem without counting the squares? You know there are 320 altogether, and there are exactly 10 rows.”** If the student solves inaccurately ask them to explain their thinking to see if they correct their answer.

| 3 | 2 | 1 |
|--|---|-----------------------|
| Student is able to solve the problem on the first attempt. | Student solves the problem on 2 nd attempt | Inaccurate or unable. |

Commentary: This problem, which is essentially a division/place value problem, helps shine light in a variety of ways. Arrays are a powerful tool for understanding both multiplication and division, and students who develop a functional understanding of arrays will have a solid foundation for multiplying and dividing multi-digit numbers.

Students who cannot solve this problem conceptually (i.e. without counting) probably do not have a working knowledge of arrays such that they will be able to use arrays as a tool to build further understanding.



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Quick Script, *print 1 copy/test administrator*

Multiplication

1. Show the student the card $20 \times 4 = 80$. **“Read this card.”** Ensure that the student has read the card correctly.

“If you know that $20 \times 4 = 80$, how can you use that to solve 19×4 ?”

Place Value/Subtraction

2. Show the card $2,000 - 10$. **“Read this card.”** (Ensure that the student reads correctly; correct them if necessary.)

“How much is $2,000 - 10$?” If student is successful score as a 3.

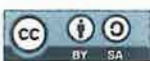
If not, remove the card and present $2,000 - 1$, and have the student read and solve that problem.

Division/Place Value

3. Place the large array of 320 squares in front of the student. **“Here is an array with 320 squares. It has 10 rows. How many squares are in each row?”** Restate the problem as, **“How many columns does it have?”**

If it helps the student to understand the task. Watch the student’s eyes. If the student begins to attempt to count the squares, ask, **“How can you solve this problem without counting the squares? You know there are 320 altogether, and there are exactly 10 rows.”**

If the student solves inaccurately ask them to explain their thinking to see if they correct their answer.



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Spanish Quick Script, *print 1 copy/test administrator*

Multiplication

1. Show the student the card $20 \times 4 = 80$. “**Lee esta tarjeta.**” Ensure that the student has read the card correctly.

” **Si tú sabes que $20 \times 4 = 80$, ¿Como puedes usar eso para resolver 19×4 ?**”

Place Value/Subtraction

2. Show the card $2,000 - 10$. “**Lee esta tarjeta.**” (Ensure that the student reads correctly; correct them if necessary.)

”**¿Cuanto es $2,000 - 10$?**” If student is successful score as a 3.

If not, remove the card and present $2,000 - 1$, and have the student read and solve that problem.

Division/Place Value

3. Place the large array of 320 squares in front of the student. “**Aquí hay una formación con 320 cuadrados. Tiene 10 filas. ¿Cuántos cuadrados hay en cada fila?**” Restate the problem as, “**¿Cuántas columnas tiene?**”

If it helps the student to understand the task. Watch the student’s eyes. If the student begins to attempt to count the squares, ask, “**¿Como puedes resolver este problema sin contar los cuadrados? Tú sabes que hay 320 con todos juntos y hay exactamente 10 filas.**”

If the student solves inaccurately ask them to explain their thinking to see if they correct their answer.



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Interview Note Catcher, *print 1 copy/student*

Name: _____

Date: _____ Teacher: _____

Language: English Spanish Other: _____

| Multiplication | <i>score</i> |
|--|--------------|
| <p>1. 19×4 from 20×4. <i>Notes:</i></p> <p><input type="checkbox"/> <i>student solves by using $80 - 4$: 3 pts</i> <input type="checkbox"/> <i>student solves 19×4 independently: 2 pts</i> <input type="checkbox"/> <i>student is incorrect: 1 pt</i></p> | |
| Place Value Subtraction | <i>score</i> |
| <p>2. $2,000 - 10$ (if necessary: $2,000 - 1$) <i>Notes:</i></p> <p><input type="checkbox"/> <i>solves $2,000 - 10$: 3 pts</i> <input type="checkbox"/> <i>cannot solve $2,000 - 10$, solves $2,000 - 1$: 2 pts</i> <input type="checkbox"/> <i>cannot solve either: 1 pt</i></p> | |
| Division/Place Value | <i>score</i> |
| <p>3. "Here is an array with 320 squares. It has 10 rows. How many squares are in each row?" <i>Notes:</i></p> <p><input type="checkbox"/> <i>student solves on first attempt: 3 pts</i> <input type="checkbox"/> <i>student solves on second attempt: 2 pts</i> <input type="checkbox"/> <i>student unable to solve: 1 pt</i></p> | |



$$2,000 - 1$$

$$2,000 - 10$$

$$20 \times 4 = 80$$

