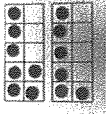
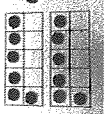
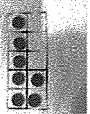
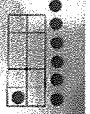


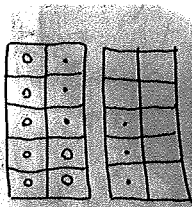
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Included with the prompt is a student exemplar. The following exemplar may not be the only approach the student may utilize. Work of this nature would represent grade level understanding.

Expression of Understanding – If the student was asked to explain their work, a student may verbalize their work as displayed below. The expression of understanding should be an expectation at or near the end of the students’ learning, not always during the process of learning.

1. Using the digits 7 and 6, determine the sum and difference using multiple representations.

Strategies and Applications	Expressions of Understanding	Comments connecting to the rubric
7 + 6   7 - 6  	• Showed 7 with the pink counters • Showed 6 with the orange counters • Take 1 pink counter off, it leaves 6 and 6, which is a double • That is 12 with one more pink counter to make 13 • Showed 7 with the pink counters • Took 6 pink counters away • Leaving 1 pink counter	• For concretely, this is an efficient method for demonstrating the addition of 2 single digit numbers • Connecting the representation to an efficient strategy (doubling plus one) • For concretely, this is showing the strategy of removing the quantity we are subtracting • Other visualizations may be applicable

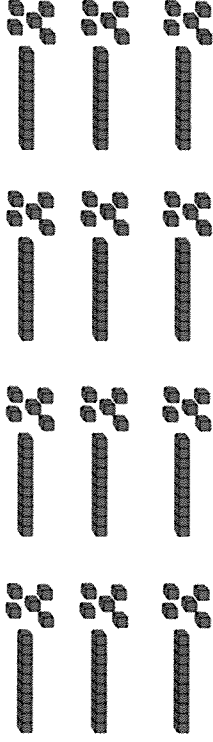
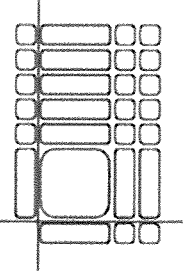
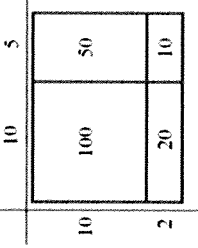
7 + 6  7 - 6  Pictorially	• Drew 7 circles then 6 dots. Left with 1 group of 10 and 3 more dots. Total is then 13 • Drew 7 circles and crossed 6 off, leaving one circle	• Used the strategy of 10-frames • To find the sum, used the strategy of making 10s
7 + 6 = 13 7 - 6 = 1 Symbolically	• Doubled and added one • 7 is one more than 6, so the answer is 1	• Counting on may not be the most efficient method at the end of Grade 2 • Student may say “I just know it”. When asked to explain their understanding, they should be able to provide a strategy.

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Expression of Understanding – If the student was asked to explain their work, a student may verbalize their work as displayed below. The expression of understanding should be an expectation at or near the end of the students’ learning, not always during the process of learning.

1. Model multiplying 12×15 using either base 10 blocks or area model.

Strategies and Applications	Expression of Understanding	Comments connecting to the rubric
<u>Base 10 Block Model with Repeated Addition</u>  Or <u>Area Model</u>  (Using Base 10 Blocks) or  (Using symbols)	- This 12×15 means 12 groups of 15 15 is one 10-block and 5 1-blocks	- This method demonstrates accuracy - This example of unitizing demonstrates efficiency provided the question involves smaller two digit numbers. When the numbers become larger (i.e. > 20) this method would not be considered efficient
	- Break the 12 into 10 and 2 - Break the 15 into 10 and 5 - Building a rectangle with sides of length 12 and 15 - Multiply the four separate multiplications to find the area	- This method demonstrates accuracy - This example demonstrates efficiency, especially if larger numbers were to be used

2. Find 12×15 symbolically.

Strategies and Applications	Expression of Understanding	Comments connecting to the rubric
$\begin{array}{r} 12 \\ \times 15 \\ \hline 60 \\ 180 \\ \hline 180 \end{array}$ Or $\begin{array}{r} 12 \\ \times 15 \\ 60 \\ +120 \\ \hline 180 \end{array}$	• Multiplied 5 by 2 to get 10 • Multiplied 5 by 10 to get 50 • Multiplied 10 by 2 to get 20 • Multiplied 10 by 10 to get 100 • Added the four answers to get 180 • Multiplied 5 by 2 to get 10, put 0 and carried the 1 into the 10s column • Multiplied 5 by 10 to get 50 and added the carried 10 to get 60 • Multiplied 10 by 2 to get 20 so I wrote 20 • Multiplied 10 by 10 to get 100, so I wrote the 1 in front • Added 60 and 120 to get 180	• Method demonstrates efficiency, accuracy and connects to the distributive property of multiplication • Method demonstrates efficiency and accuracy through the use of the standard algorithm

3. Explain how your work in Parts 1 and 2 are connected.

Expression of Understanding	Comments connecting to the rubric
The base 10 blocks show 12 rods of 10 and 60 one cubes. Adding them together we get 180. Or The four multiplications in the area model were the same four multiplications in the second part. Both gave an answer of 180.	• Student should be able to connect the model of choice to their symbolic representation

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1. With the expression $(-24) \div 8 \times (-6)$, will the value of the answer be positive or negative? Justify your answer.

Strategies and Applications	Expression of Understanding	Comments connecting to the rubric
negative $\div$ positive = negative	An odd number of negatives will result in a negative answer	Student independently used prior knowledge
negative $\times$ negative = positive	An even number of negative will result in a positive answer	Student applies appropriate strategies to determine the sign when multiplying and dividing integers
Answer is positive		Student uses appropriate language to express their understanding

2. How could change the original question above if you wanted the answer to have the opposite sign?

Strategies and Applications	Expression of Understanding	Comments connecting to the rubric
I could change one of the signs to the opposite sign Or I could change all of the signs to the opposite sign	To get a negative answer an odd number of negatives is needed	- Student justifies solutions to math problem - Student used appropriate mathematical language.

