

Samples to Success

Sample items provide valuable insight into how students engage with different texts, tasks, and contexts, highlighting the types of opportunities they need for success in the classroom. These items offer a shared reference point for understanding proficiency expectations, complementing the assessment's role in measuring learning. By analyzing items alongside performance data, educators can gain a deeper understanding of students' strengths and areas for growth. Students thrive in environments rich with diverse materials, challenges that vary in task type, and multiple avenues for demonstrating understanding. High-quality instruction, aligned with the learning goals, is the most effective way to support students' growth and prepare them for success.



MATHEMATICS GRADE 5

The items featured in this rubric are a mix of items representative of those found on the IAR and items appropriate for classroom instruction to support and build the skills measured on the IAR. The distinction between a student scoring proficient and above proficient on the IAR is primarily determined by the total points earned on items that require modeling and/or reasoning. Students who can effectively explain and demonstrate their thinking are most likely to earn these points.

Operations & Algebraic Thinking

5.OA.1	Below Proficient	Approaching Proficient	Proficient	Above Proficient
Expectation at Proficient:	Which operation should be done first to determine the value of the following expression?	What is the value of the expression shown?	What is the value of the expression shown?	A farmer has 12 apples in a basket. He gives 2 apples to each of his 3 children. Then, he adds 5 more apples to the basket.
Evaluate numerical expressions with multiple grouping symbols.	$12 - (3 \times 2) + 5$	$12 - (3 \times 2) + 5$	$12 - ((3 \times 2) + 5)$	Write an expression to determine the resulting number of apples in the basket.
	A. $12 - 3$	A. 1		How many apples are in the basket?
	B. 3×2	B. 11		
	C. $2 + 5$	C. 12		
	D. $12 - 5$	D. 23		

Operations & Algebraic Thinking

5.OA.2	Below Proficient	Approaching Proficient	Proficient	Above Proficient
Expectation at Proficient:	Which expression represents "the product of 5 and 3?"	Which expression represents "7 more than the product of 5 and 3?"	Write an expression that represents "7 more than the product of 5 and 3."	Mabel solves a problem by adding 7 to the product of 5 and 3.
Write and interpret expressions involving parentheses.	A. $5 + 3$	A. $(7 + 5) \times 3$		Write an expression Mabel could use to solve the problem.
	B. $5 - 3$	B. $(5 \times 3) + 7$		What is the answer to the problem?
	C. 5×3	C. $5 + (3 \times 7)$		

$$D. 5 \div 3$$

$$D. 3 + (5 \times 7)$$

Operations & Algebraic Operations

5.OA.3 Expectation at Proficient: Generate two numerical patterns using two given rules. Plot ordered pairs on a coordinate plane and identify apparent patterns or relationships between the two given rules.	Below Proficient	Approaching Proficient	Proficient	Above Proficient																				
	Complete the pattern given the rule "add 2." 9, ____, 13, ____	Complete the pattern given the rule "multiply by 3." 4, ____, ____, ____	Complete the table of values given the two patterns shown. Pattern A: add 2 Pattern B: add 6 <table border="1" data-bbox="1220 407 1572 508"> <tr> <td>Pattern A</td> <td>9</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Pattern B</td> <td></td> <td>33</td> <td></td> <td></td> </tr> </table>	Pattern A	9				Pattern B		33			Complete the table of values given the two patterns shown. Pattern A: add 2 Pattern B: add 6 <table border="1" data-bbox="1629 407 2011 508"> <tr> <td>Pattern A</td> <td>9</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Pattern B</td> <td></td> <td>33</td> <td></td> <td></td> </tr> </table> Complete the statement comparing the corresponding values in Pattern A and Pattern B is true? Each term in Pattern B is ____ times the corresponding term in Pattern A.	Pattern A	9				Pattern B		33		
Pattern A	9																							
Pattern B		33																						
Pattern A	9																							
Pattern B		33																						

Number & Operations in Base Ten

5.NBT.1 Expectation at Proficient: Recognize that in a multi-digit number, a digit in one place represents 10 times as much as it represents in the place to its right and 1/10 of what it represents in the place to its left.	Below Proficient	Approaching Proficient	Proficient	Above Proficient
	A number is shown. 76,543.21 Which digit is in the hundreds place?	Select the word that best completes the following sentence. The value of the digit 3 in the number 3,000 is (more than/less than) the value of the digit 3 in the number 30,000.	In which number is the value of the digit in the hundreds place one-tenth the value of the digit in the thousands place? A. 3,300 B. 33,000 C. 330,000 D. 3,300,000	A number is shown. 432,521.02 The digit 2 appears twice. Explain how many times larger/smaller one of the digits is from the other. Use place value and powers of 10 in your explanation.

Number & Operations in Base Ten

5.NBT.2	Below Proficient	Approaching Proficient	Proficient	Above Proficient
<p>Expectation at Proficient:</p> <p>Explain patterns in the number of zeros of the product when multiplying a number by powers of 10.</p> <p>Explain patterns in the placement of the decimal point when a decimal is multiplied or divided by a power of 10.</p> <p>Use whole number exponents to denote powers of 10.</p>	<p>A number is shown.</p> <p>400</p> <p>If the number is multiplied by 10, how many zeros will the number contain?</p> <p>If the number is divided by 10, how many zero will the number contain?</p>	<p>About 100,000 people live in a town. The number 100,000 can be written as 10^n, where n is a whole number.</p> <p>What is the value of n?</p> <p>A. 3</p> <p>B. 4</p> <p>C. 5</p> <p>D. 6</p>	<p>About 100,000 people live in a town. The number 100,000 can be written as 10^n, where n is a whole number.</p> <p>What is the value of n? Explain how you know.</p>	<p>Perform the following operations involving powers of 10.</p> <p style="text-align: center;">$3.45 \times 10^3 = \underline{\quad}$</p> <p style="text-align: center;">$0.056 \times 10^4 = \underline{\quad}$</p> <p style="text-align: center;">$12.67 \times 10^2 = \underline{\quad}$</p> <p style="text-align: center;">$4.5 \div 10^2 = \underline{\quad}$</p> <p style="text-align: center;">$0.002 \div 10^3 = \underline{\quad}$</p> <p style="text-align: center;">$89.75 \div 10^1 = \underline{\quad}$</p> <p>1. Analyze the patterns in the number of zeros in the product or quotient when multiplying or dividing by powers of 10.</p> <p>2. Describe how the decimal point shifts when multiplying or dividing a decimal number by a power of 10. Explain how you can predict the placement of the decimal point based on the power of 10?</p> <p>3. Explain how you use exponents to represent powers of 10 and how that impacts the decimal point placement in the result.</p>

Number & Operations in Base Ten

5.NBT.3a	Below Proficient	Approaching Proficient	Proficient	Above Proficient
<p>Expectation at Proficient:</p> <p>Read and write decimals to thousandths using base ten numerals, number names, and expanded form.</p>	<p>What is another way to represent the number “forty-two and seventeen hundredths”?</p> <p>A. 42.17</p> <p>B. 42.017</p> <p>C. 42.0017</p> <p>D. 42.00017</p>	<p>What is another way to represent the number “forty-two and seventeen hundredths”?</p> <p>A. 42.017</p> <p>B. 42.17</p> <p>C. $40 + 2 + 0.1 + 0.17$</p> <p>D. $40 + 2 + 0.01 + 0.007$</p>	<p>What is another way to represent the number “forty-two and seventeen thousandths”?</p> <p>Select the two answers.</p> <p>A. 42.017</p> <p>B. 42.17</p> <p>C. 42,017</p> <p>D. $40 + 2 + 0.1 + 0.17$</p>	<p>Compare the following values with a $<$, $=$, or $>$.</p> <p>42.17 $\underline{\quad}$ forty-two and seventeen hundredths</p> <p>$20 + 2 + 0.04 + 0.005$ $\underline{\quad}$ 22.045</p>

E. $40 + 2 + 0.01 + 0.007$

Number & Operations in Base Ten

5.NBT.3b	Below Proficient	Approaching Proficient	Proficient	Above Proficient
<p>Expectation at Proficient:</p> <p>Compare two decimals to thousandths based on meanings of the digits in each place, using $>$, $=$, and $<$ symbols to record the results of comparisons</p>	<p>Which symbol correctly compares the two decimals?</p> <p>3.7 ____ 3.8</p>	<p>Which comparison is true?</p> <p>A. $4\frac{34}{100} > \text{four hundred thirty}$</p> <p>B. $5.03 > 5 + \frac{3}{100}$</p> <p>C. $0.47 > \text{thirty hundredths}$</p> <p>D. $70 + 5 + \frac{1}{10} = 751$</p>	<p>Which comparison is true?</p> <p>A. $4\frac{34}{100} > \text{four hundred thirty}$</p> <p>B. $5.03 > 5 + \frac{3}{100}$</p> <p>C. $0.47 > \text{thirty thousandths}$</p> <p>D. $70 + 5 + \frac{1}{10} = 751$</p>	<p>Complete the comparison shown with a $<$, $=$, or $>$ symbol.</p> <p>0.57 ____ fifty-seven thousandths</p> <p>Explain the symbol you chose.</p> <p>Explain why the other symbols are unreasonable.</p>

Number & Operations in Base Ten

5.NBT.4	Below Proficient	Approaching Proficient	Proficient	Above Proficient
<p>Expectation at Proficient:</p> <p>Use the place value system to round decimals to any place.</p>	<p>Which value rounded to the nearest whole number is 3?</p> <p>A. 2.3</p> <p>B. 2.4</p> <p>C. 2.5</p> <p>D. 3.5</p>	<p>Which value rounded to the nearest tenth is 3.7?</p> <p>A. 3.63</p> <p>B. 3.69</p> <p>C. 3.75</p> <p>D. 3.79</p>	<p>Which values rounded to the nearest tenth is 3.7?</p> <p>Select the three correct answers.</p> <p>A. 2.9</p> <p>B. 3.66</p> <p>C. 3.701</p> <p>D. 3.729</p> <p>E. 3.77</p> <p>F. 4.001</p>	<p>Round 3.4508 to each of the following place.</p> <p>Ones:</p> <p>Tenths:</p> <p>Hundredths:</p> <p>Thousandths:</p> <p>Explain the impact of rounding in a real-world context.</p>

Number & Operations in Base Ten

5.NBT.5	Below Proficient	Approaching Proficient	Proficient	Above Proficient
<p>Expectation at Proficient:</p> <p>Accurately multiply multi-digit whole</p>	<p>What is the value of the expression?</p> <p>205×3</p> <p>A. 208</p>	<p>What is the value of the expression?</p> <p>205×13</p>	<p>What is the value of the expression?</p> <p>$4,704 \times 18$</p>	<p>Explain the steps necessary to multiply $4,704 \times 18$.</p>

numbers using the standard algorithm.

B. 615
C. 645
D. 2053

Number & Operations in Base Ten

5.NBT.6	Below Proficient	Approaching Proficient	Proficient	Above Proficient
Expectation at Proficient:	What is the value of the expression?	What is the value of the expression?	What is the value of the expression?	What is the value of the expression?
Find whole-number quotients of whole numbers with up to four-digit dividends and two-digit divisors.	$52 \div 4$	$216 \div 12$	$4,632 \div 12$	$4,632 \div 12$
				Use equations, models, or visual representations to justify your answer.

Number & Operations in Base Ten

5.NBT.7	Below Proficient	Approaching Proficient	Proficient	Above Proficient
Expectation at Proficient:	Which expression has a value of 2?	Which expression has a value of 1.5?	Which expression has a value of 1.5?	Explain 2 different ways to evaluate the expression shown.
Add, subtract, multiply, and divide decimals to hundredths.	A. $1.5 + 2$ B. $6 - 4.5$ C. 2×1.5 D. $4.4 \div 2.2$	A. $0.6 + 0.9$ B. $6.8 - 4.3$ C. 0.2×6 D. $12.6 \div 4.2$	A. $0.56 + 0.85$ B. $6.8 - 4.3$ C. 0.25×6 D. $10.75 \div 5.25$	$1.25 + 0.75$ Explain why one approach may be more efficient than the other.

Number & Operations - Fractions

5.NF.1	Below Proficient	Approaching Proficient	Proficient	Above Proficient
Expectation at Proficient:	What is $\frac{1}{3} + \frac{1}{6} + \frac{2}{6}$?	What is $\frac{1}{3} + \frac{5}{6} + \frac{5}{3}$?	What is $1\frac{1}{3} + \frac{5}{6} - \frac{5}{12}$?	What is $1\frac{1}{3} + \frac{5}{6} - \frac{5}{12}$?
Add and/or subtract up to three fractions with unlike denominators that may include mixed numbers by replacing given fractions with equivalent fractions in	A. $\frac{1}{6}$ B. $\frac{5}{6}$ C. $\frac{1}{3}$ D. $\frac{5}{3}$	A. $\frac{11}{12}$ B. $1\frac{5}{6}$ C. $2\frac{5}{6}$ D. $2\frac{11}{12}$		Explain your work.

such a way as to produce an equivalent sum or difference of fractions with like denominators. Answers may include mixed numbers.

Number & Operations - Fractions

5.NF.2	Below Proficient	Approaching Proficient	Proficient	Above Proficient
<p>Expectation at Proficient:</p> <p>Solve word problems involving addition and subtraction of fractions referring to the same whole, including cases of unlike denominators by using a variety of representations, equations, and visual models to represent the problem. Use benchmark fractions and number sense of fractions to estimate mentally and assess the reasonableness of answers.</p>	<p>Robin and Josie shared a bottle of paint for an art project. Robin used $\frac{3}{5}$ of the bottle of paint. Josie used $\frac{1}{5}$ of the bottle of paint.</p> <p>What fractional part of the bottle of paint did Robin and Josie use altogether?</p> <p>A. $\frac{2}{5}$ B. $\frac{4}{5}$ C. $\frac{2}{10}$ D. $\frac{4}{10}$</p>	<p>Robin and Josie shared a bottle of paint for an art project. Robin used $\frac{3}{5}$ of the bottle of paint. Together they used $\frac{4}{5}$ of the bottle of paint.</p> <p>What fractional part of the bottle of paint did Josie use?</p> <p>A. $\frac{1}{5}$ B. $\frac{7}{5}$ C. $\frac{1}{10}$ D. $\frac{7}{10}$</p>	<p>Robin and Josie shared a bottle of paint for an art project. Robin used $\frac{3}{5}$ of the bottle of paint. Together they used $\frac{17}{20}$ of the bottle of paint.</p> <p>What fractional part of the bottle of paint did Josie use?</p>	<p>Robin and Josie shared a bottle of paint for an art project. Robin used $\frac{3}{5}$ of the bottle of paint. Together they used $\frac{17}{20}$ of the bottle of paint.</p> <p>What fractional part of the bottle of paint did Josie use?</p> <p>Is your answer reasonable in the context? Explain.</p>

Number & Operations - Fractions

5.NF.3	Below Proficient	Approaching Proficient	Proficient	Above Proficient
<p>Expectation at Proficient:</p> <p>Interpret a fraction as the number that results from dividing the whole number numerator by</p>	<p>What is $20 \div 8$?</p> <p>A. $\frac{20}{8} = 2.5$ B. $\frac{8}{20} = 0.4$ C. $\frac{20}{8} = 0.4$</p>	<p>Luka is making cookies. He makes 20 ounces of cookie dough. He divides it into 8 equal parts to make 8 cookies.</p>	<p>Luka is making cookies. He makes 20 ounces of cookie dough. He divides it into 6 equal parts to make 6 cookies. The number of ounces of dough Luka uses for each cookie is between which two numbers?</p>	<p>Luka is making cookies. He makes 20 ounces of cookie dough. He divides it into 8 equal parts to make 8 cookies.</p>

the whole number denominator ($a/b = a \div b$). Solve word problems involving division of whole numbers leading to answers in the form of fractions or mixed numbers. Answers may include mixed numbers.

D. $\frac{8}{20} = 2.5$

What fraction represents the number of ounces of dough Luke uses for each cookie?

A. $\frac{20}{8} = 2.5$

B. $\frac{8}{20} = 0.4$

C. $\frac{20}{8} = 0.4$

D. $\frac{8}{20} = 2.5$

A. 2 and 3

B. 3 and 4

C. 4 and 5

D. 5 and 6


What fraction represents the number of ounces of dough Luke uses for each cookie?

Explain your work.

Number & Operations - Fractions

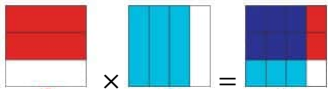
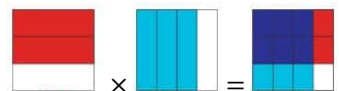
5.NF.4	Below Proficient	Approaching Proficient	Proficient	Above Proficient
Expectation at Proficient:	What is the value of the expression?	What is the value of the expression?	What is the value of the expression?	What is the value of the expression?
Multiply a fraction by a whole number and multiply a fraction by a fraction.	$\frac{1}{2} \times \frac{1}{4}$	$\frac{3}{7} \times \frac{5}{4}$	$\frac{3}{7} \times \frac{5}{4}$	$\frac{3}{7} \times \frac{5}{4}$
	A. $\frac{1}{24}$	A. $\frac{12}{35}$		Explain your work.
	B. $\frac{1}{8}$	B. $\frac{15}{28}$		
	C. $\frac{1}{6}$	C. $\frac{21}{20}$		
	D. $\frac{2}{4}$	D. $\frac{35}{74}$		

Number & Operations - Fractions

5.NF.4a-1	Below Proficient	Approaching Proficient	Proficient	Above Proficient
Expectation at Proficient:	What is the value of the expression?	What is the value of the expression?	What is the value of the expression?	Create a real-world word problem that requires calculating the product of $5 \times \frac{5}{7}$.
Interpret the product $(a/b) \times q$ as a part of a partition of q into b equal parts. For example, use a visual fraction model to show $(\frac{2}{3}) \times 4 = \frac{8}{3}$, and create a story context for this equation.	$3 \times \frac{1}{2}$	$5 \times \frac{5}{7}$	$5 \times \frac{5}{7}$	
		A. $\frac{10}{7}$		
	A. $\frac{4}{2}$	B. $\frac{25}{7}$		
		C. $\frac{25}{35}$		
		D. $\frac{10}{35}$		

- B. $\frac{3}{2}$
- C. $\frac{4}{6}$
- D. $\frac{3}{6}$

Number & Operations - Fractions

	Below Proficient	Approaching Proficient	Proficient	Above Proficient
<p>5.NF.4a-2 Expectation at Proficient:</p> <p>Interpret the product of a fraction multiplied by a fraction $(a/b) \times (c/d)$. Use a visual fraction model and create a story context for this equation. For example, use a visual fraction model to show $(2/3) \times (4/5) = 8/15$, and create a story context for this equation. In general, $(a/b) \times (c/d) = ac/bd$.</p>	<p>A fraction model is shown.</p>  <p>What is $\frac{2}{3} \times \frac{3}{4}$?</p> <p>A. $\frac{5}{7}$ B. $\frac{6}{12}$ C. $\frac{5}{12}$ D. $\frac{6}{7}$</p>	<p>What is $\frac{2}{3} \times \frac{4}{5}$?</p> <p>A. $\frac{6}{8}$ B. $\frac{8}{15}$ C. $\frac{6}{15}$ D. $\frac{8}{8}$</p>	<p>Of all the baseball hats in a store, $\frac{2}{3}$ of the hats are blue. Of all the blue baseball hats, $\frac{4}{7}$ are on sale.</p> <p>Draw a fraction model to represent the baseball hats.</p> <p>What fraction of the baseball caps in the store are blue and on sale?</p>	<p>The fraction model shown represents $\frac{2}{3} \times \frac{3}{4}$.</p>  <p>Create a story context to represent $\frac{2}{3} \times \frac{3}{4}$.</p>

Number & Operations - Fractions

	Below Proficient	Approaching Proficient	Proficient	Above Proficient
<p>5.NF.5a Expectation at Proficient:</p> <p>Interpret multiplication as scaling. Comparing the size of the product</p>	<p>Choose the term to correctly complete the statement.</p> <p>Multiplying $15 \times \frac{1}{2}$ results in a value that is (greater/less) than 15.</p>	<p>Complete the comparison with a <, =, or > symbol.</p> <p>$15 \times \frac{1}{2}$ _____ 15</p>	<p>Order the following expressions from least value to greatest value.</p> <p>$15 \times \frac{2}{2}$</p>	<p>Order the following expressions from least value to greatest value.</p> <p>$15 \times \frac{2}{2}$</p>

to one factor based on the size of the other factor, without actually multiplying.

$$15 \times \frac{1}{2}$$

$$15 \times \frac{3}{2}$$

$$15 \times \frac{2}{3}$$


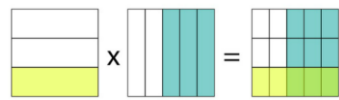
$$15 \times \frac{1}{2}$$

$$15 \times \frac{3}{2}$$

$$15 \times \frac{2}{3}$$

Explain how the size of a product compares to the size of the fraction that is being multiplied?

Number & Operations - Fractions

5.NF.6	Below Proficient	Approaching Proficient	Proficient	Above Proficient
Solve problems in real-world contexts involving multiplication of fractions, including mixed numbers, by using a variety of representations including equations and models.	A fraction equation model is shown.	Claire walked $2\frac{2}{5}$ miles. Jason walked $\frac{2}{3}$ as far as Claire.	Claire walked $2\frac{2}{5}$ miles. Jason walked $\frac{2}{3}$ as far as Claire.	A fraction equation model is shown.
	 <p>What is $\frac{1}{3} \times \frac{3}{5}$?</p> <p>A. $\frac{4}{8}$ B. $\frac{4}{15}$ C. $\frac{3}{8}$ D. $\frac{3}{15}$</p>	How many miles did Jason walk?	How many miles did Jason walk?	 <p>Create a problem in real-world context that requires multiplication of fractions that can be solved using the model.</p>

Number & Operations - Fractions

5.NF.7	Below Proficient	Approaching Proficient	Proficient	Above Proficient
Expectation at Proficient: Apply and extend previous	A model equation is shown. $\frac{1}{2} \div 3 = \frac{1}{6}$	Mason has $\frac{1}{8}$ pound of cheese to put on top of 4 tacos. He puts the same amount of cheese on each taco.	Mason has $\frac{1}{8}$ pound of cheese to put on top of 4 tacos. He puts the same amount of cheese on each taco.	Mason has $\frac{1}{8}$ pound of cheese to put on top of 4 tacos. He puts the same amount of cheese on each taco.

understandings of division to divide unit fractions by whole numbers and whole numbers by unit fractions.

What is $\frac{1}{2} \div 4$?

- A. $\frac{1}{8}$
- B. $\frac{1}{6}$
- C. $\frac{4}{8}$
- D. $\frac{4}{6}$

Which division equation can be used to find the fraction of a pound of cheese that Mason uses for each taco.

- A. $\frac{1}{8} \div 4 = \frac{4}{8}$
- B. $\frac{1}{8} \div 4 = \frac{1}{32}$
- C. $4 \div \frac{1}{8} = \frac{4}{8}$
- D. $4 \div \frac{1}{8} = \frac{1}{32}$

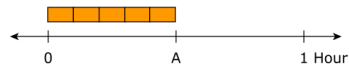
Write a division equation that can be used to find the fraction of a pound of cheese that Mason uses for each taco.

What is the fraction of a pound of cheese that Mason uses for each taco?

Write a division equation that can be used to find the fraction of a pound of cheese that Mason uses for each taco.

What is the fraction of a pound of cheese that Mason uses for each taco? Explain your work.

Number & Operations - Fractions

5.NF.7a	Below Proficient	Approaching Proficient	Proficient	Above Proficient
<p>Expectation at Proficient:</p> <p>Interpret division of a unit fraction by a non-zero whole number and compute such quotients. Use the relationship between multiplication and division to justify conclusions. (Ex. $\frac{1}{3} \div 4 = \frac{1}{12}$ because $(\frac{1}{12}) \times 4 = \frac{1}{3}$.)</p>	<p>An equation is shown.</p> $\frac{1}{12} \times 4 = \frac{1}{3}$ <p>What is $\frac{1}{3} \times 4$?</p> <ul style="list-style-type: none"> A. $\frac{1}{3}$ B. $\frac{1}{4}$ C. $\frac{1}{7}$ D. $\frac{1}{12}$ 	<p>An equation is shown.</p> $\frac{1}{12} \times 4 = \frac{1}{3}$ <p>What is $\frac{1}{3} \times 4$?</p>	<p>Cora has $\frac{1}{2}$ hour to do 5 chores. She plans to spend the same fraction of an hour on each chore. She wants to use the number line to help her determine what fraction of an hour she can spend on each chore.</p>  <p>What value does the letter A represent?</p> <p>What fraction of an hour will she spend on each chore?</p>	<p>What is $\frac{1}{3} \times 4$?</p> <p>Write an equivalent division equation to show the relationship between multiplication and division. Explain the relationship.</p>

Number & Operations - Fractions

5.NF.7b	Below Proficient	Approaching Proficient	Proficient	Above Proficient
<p>Expectation at Proficient:</p>	<p>An equation is shown.</p> $12 \times \frac{1}{2} = 6$	<p>What is $6 \div \frac{1}{2}$?</p>	<p>Samantha is serving lemonade at a party. She has 6 gallons of lemonade and wants to divide it</p>	<p>What is $6 \div \frac{1}{2}$?</p> <p>Write an equivalent multiplication equation to show the relationship</p>

Interpret division of a whole number by a unit fraction, and compute such quotients. For example, $4 \div (1/5)$, and use a visual fraction model to show the quotient. Use the relationship between multiplication and division to justify conclusions (e.g., $4 \div (1/5) = 20$ because $20 \times (1/5) = 4$).

What is $6 \div \frac{1}{2}$?

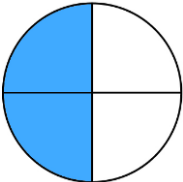
- A. 3
- B. 6
- C. 8
- D. 12

equally into glasses, each holding $\frac{1}{8}$ gallon.

How many $\frac{1}{8}$ -gallon glasses can Samantha pour?

between division and multiplication. Explain the relationship.

Number & Operations - Fractions

5.NF.7c	Below Proficient	Approaching Proficient	Proficient	Above Proficient
<p>Expectation at Proficient:</p> <p>Solve problems in real-world context involving division of unit fractions by non-zero whole numbers and division of whole numbers by unit fractions, using a variety of representations.</p>	<p>A fraction model is shown.</p>  <p>What is $\frac{1}{2} \div 2$?</p> <ul style="list-style-type: none"> A. $\frac{1}{4}$ B. $\frac{1}{2}$ C. 2 D. 4 	<p>Jim uses ribbon to make bookmarks. Jim has 9 feet of ribbon. He uses $\frac{1}{3}$ foot of ribbon to make each bookmark.</p> <p>What is the total number of bookmarks Jim makes with all 9 feet of ribbon?</p> <ul style="list-style-type: none"> A. 3 B. 9 C. 12 D. 27 	<p>Jim uses ribbon to make bookmarks. Jim has 9 feet of ribbon. He uses $\frac{1}{3}$ foot of ribbon to make each bookmark.</p> <p>What is the total number of bookmarks Jim makes with all 9 feet of ribbon?</p>	<p>Jim uses ribbon to make bookmarks. Jim has 9 feet of ribbon. He uses $\frac{1}{3}$ foot of ribbon to make each bookmark.</p> <p>What is the total number of bookmarks Jim makes with all 9 feet of ribbon? Explain your work.</p> <p>Each $\frac{1}{3}$ foot bookmark is folded in $\frac{1}{2}$. How long is each piece when folded?</p>

Measurement & Data

5.MD.1	Below Proficient	Approaching Proficient	Proficient	Above Proficient
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Expectation at Proficient:

Convert among different-sized standard measurement units within a given measurement system (e.g., convert 5 cm to 0.05 m) or (12 in to 1 ft.)

Solve multi-step real world problems requiring conversion among different sized standard measurement units within a given measurement system.

Circle the value in each pair of measurements that is longer?

5 ft, 5 in.

3 km, 3 m

2 mm, 2 cm

A bowl of ice cream weighs 1 pound. If 4 ounces of topping are added to the bowl of ice cream, what is the total weight, in ounces? (16 ounces = 1 pound)

A. 12

B. 17

C. 20

D. 64

A fence post is in the shape of a rectangular prism. One side of the fence post measures 8 inches wide by 6 feet long.

What is the area, in square **inches**, of one side of the fence post?

Explain how to convert feet to inches.

Explain how to convert inches to feet.

Explain how to convert a measurement in meters into millimeters and into kilometers.

What pattern do you notice?

Measurement & Data

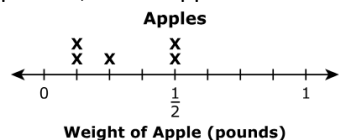
5.MD.2

Expectation at Proficient:

Use the Solve problems involving information in line plots that include fractions. For example, given different measurements of liquid in identical beakers, find the amount of liquid each beaker would contain if the total amount in all the beakers were redistributed equally.

Below Proficient

The line plot shows the weights, in pounds, of five apples.



What is the difference in weight, in pounds of the heaviest apple and the lightest apple?

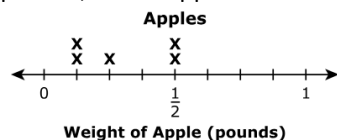
A. $\frac{1}{2} + \frac{1}{8} = \frac{5}{8}$

B. $\frac{1}{2} - \frac{1}{8} = \frac{3}{8}$

C. $\frac{1}{2} \times \frac{1}{8} = \frac{1}{16}$

Approaching Proficient

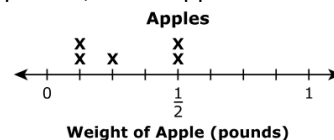
The line plot shows the weights, in pounds, of five apples.



What is the total weight, in pounds, of all 5 apples represented in the line plot?

Proficient

The line plot shows the weights, in pounds, of five apples.

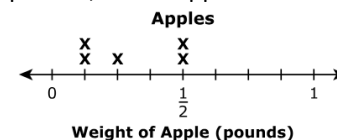


All five of these apples will be cut into pieces and placed in equal amounts into three containers for making applesauce.

What is the weight, in pounds, of apple pieces that should be placed in each container so that all three containers have the same weight?

Above Proficient

The line plot shows the weights, in pounds, of five apples.



Three additional apples are weighed and added to the line plot. Their weights, in pounds, are shown.

Apple 6: $\frac{3}{4}$

Apple 7: $\frac{5}{8}$

Apple 8: $\frac{3}{8}$

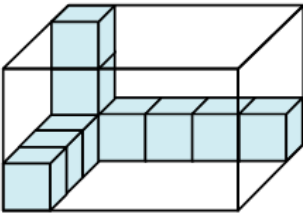

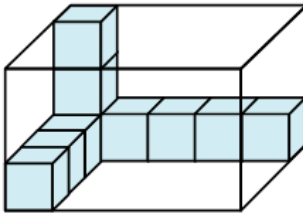

$$\left(\frac{1}{2} + \frac{1}{4} + \frac{1}{8} = \frac{7}{8} \div 3 = \frac{7}{24}\right)$$

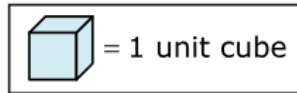
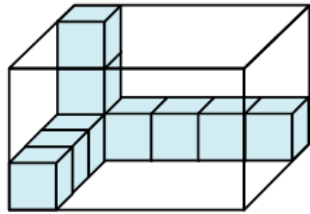
$$D. \frac{1}{2} \div \frac{1}{8} = \frac{8}{2}$$

What is the combined weight, in pounds, of the 8 apples?

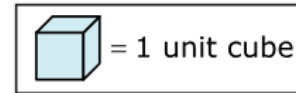
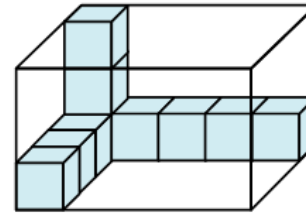
If a basket can only hold 3 pounds of apples, will the basket hold all 8 apples? Explain.

Measurement & Data

5.MD.3	Below Proficient	Approaching Proficient	Proficient	Above Proficient
<p>Expectation at Proficient:</p> <p>Recognize volume as an attribute of solid figures and understand concepts of volume measurement.</p>	<p>A rectangular prism is shown. The length of the rectangular prism is 5 units. The width of the rectangular prism is 4 units.</p>	<p>A rectangular prism is shown.</p>  <div data-bbox="825 1289 1115 1378" style="border: 1px solid black; padding: 5px; display: inline-block;">  = 1 unit cube </div>	<p>What is the volume of the rectangular prism, in cubic units, shown?</p>	<p>A rectangular prism is shown.</p>  <div data-bbox="1648 1289 1938 1378" style="border: 1px solid black; padding: 5px; display: inline-block;">  = 1 unit cube </div>



What are the dimensions, in units, of the rectangular prism?



Explain how to find the volume of the rectangular prism by using unit cubes.

What is the height, in units, of the rectangular prism?

Measurement & Data

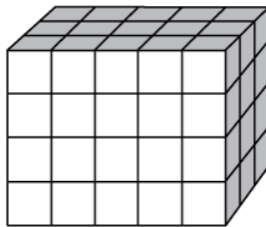
5.MD.4
Expectation at Proficient:

Identify concepts of volume and relate volume to multiplication and to addition.

Measure volumes by counting unit cubes, using cubic cm, cubic in, cubic ft, and improvised units.

Below Proficient

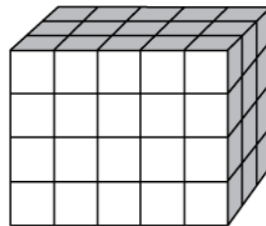
The rectangular prism shown was built using 1-inch cubes. The length of the rectangular prism is 5 inches, and the width is 3 inches.



What is the height, in inches, of the rectangular prism?

Approaching Proficient

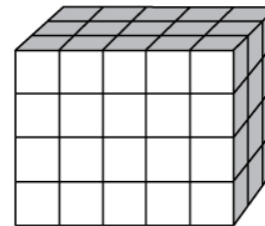
The rectangular prism shown was built using 1-inch cubes.



What are the dimensions, in inches, of the rectangular prism?

Proficient

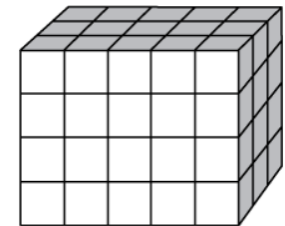
The rectangular prism shown was built using 1-inch cubes.



What is the volume, in cubic inches, of the rectangular prism?

Above Proficient

The rectangular prism shown was built using 1-inch cubes.



What is the volume, in cubic inches, of the rectangular prism?

Explain how you know.

Measurement & Data

5.MD.5a

Below Proficient

Approaching Proficient

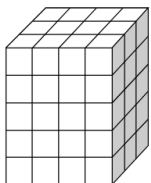
Proficient

Above Proficient

Expectation at Proficient:

Identify concepts of volume and relate volume to multiplication and to addition. Relate volume to the operations of multiplication and addition and solve real world and mathematical problems involving volume. Find the volume of a right rectangular prism by packing it with unit cubes and show that the volume is the same as would be found by multiplying the length, width, and height.

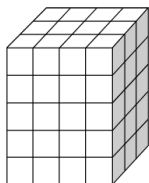
In the right rectangular prism, each small cube measures 1 unit on each side.



What is the volume, in cubic units, of the prism?

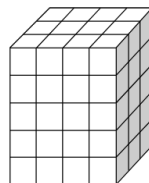
- A. 12
- B. 20
- C. 60
- D. 345

In the right rectangular prism, each small cube measures 1 unit on each side.



What is the volume, in cubic units, of the prism?

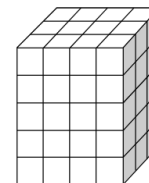
In the right rectangular prism, each small cube measures 1 unit on each side.



What is the volume, in cubic units, of the prism?

What would be the dimensions of a new right rectangular prism that has 20 fewer unit cubes than the original prism? Explain how you determined the new dimensions.

In the right rectangular prism, each small cube measures 1 unit on each side.



What is the volume, in cubic units, of the prism?

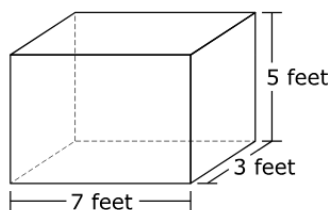
Compare and contrast the methods of finding the volume using unit cubes and using the volume formula $V = l \times w \times h$.

5.MD.5b**Expectation at Proficient:**

Apply the formulas $V = (l)(w)(h)$ and $V = (b)(h)$ for rectangular prisms to find volumes of right rectangular prisms with whole numbers in the context of solving real world and mathematical problems.

Below Proficient

A rectangular prism is shown.

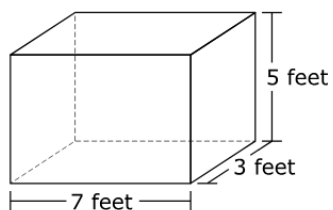


What is the volume, in cubic feet, of the rectangular prism?

- A. $7 + 3 + 5 = 15$
- B. $7 + 3 + 5 = 105$
- C. $7 \times 3 \times 5 = 15$
- D. $7 \times 3 \times 5 = 105$

Approaching Proficient

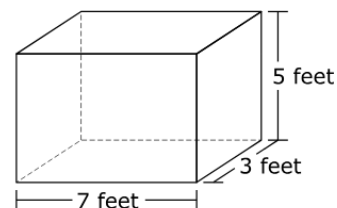
A rectangular prism is shown.



What is the volume, in cubic feet, of the rectangular prism?

Proficient

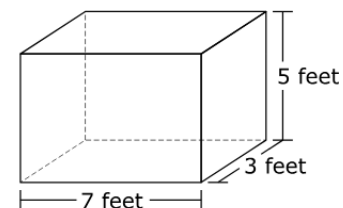
Mrs. Scott bought a desk for her classroom. The desk was placed in a box in the shape of a right rectangular prism. A model of the box is shown.



What is the volume, in cubic feet, of the box?

Above Proficient

Mrs. Scott bought a desk for her classroom. The desk was placed in a box in the shape of a right rectangular prism. A model of the box is shown.



What is the volume, in cubic feet, of the box? How would increasing the height of the box by 1 foot change its volume?

Geometry

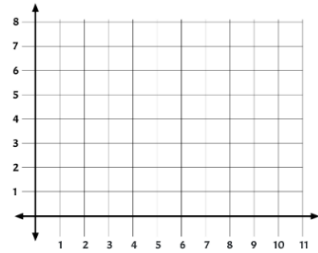
5.G.1

Expectation at Proficient:

Describe a coordinate system as perpendicular number lines, called axes, that intersect at the origin $(0, 0)$. Identify a given point in the first quadrant of the coordinate plane using an ordered pair of numbers, called coordinates. Understand that the first number (x) indicates the distance traveled on the horizontal axis, and the second number (y) indicates the distance traveled on the vertical axis.

Below Proficient

A coordinate plane is shown.



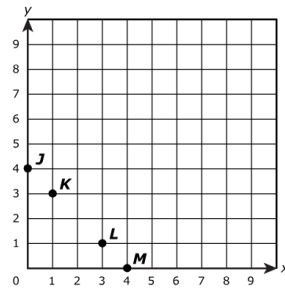
Use a red crayon to color the x-axis.

Use a blue crayon to color the y-axis.

Use a pencil to draw a point with coordinates $(2,3)$.

Approaching Proficient

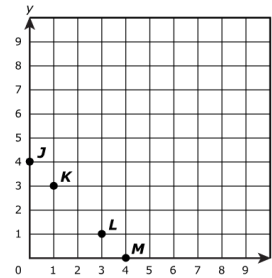
Which point on the graph has coordinates of $(1,3)$?



- A. point J
- B. point K
- C. point L
- D. point M

Proficient

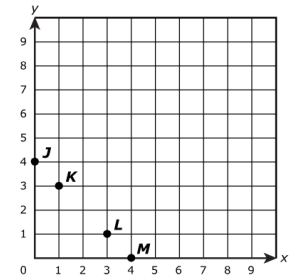
Identify the coordinates of each point graphed on the coordinate plane shown.



- J (__, __)
- K (__, __)
- L (__, __)
- M (__, __)

Above Proficient

A student is struggling to understand the coordinate graph shown.



Describe the coordinate system. Be sure to include the axes and points on the graph.

Geometry

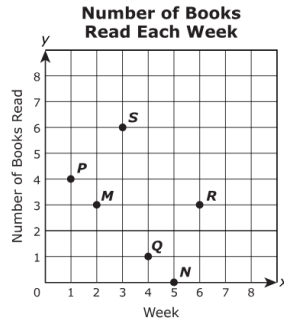
5.G.2

Expectation at Proficient:

Represent real-world and mathematical problems by graphing points in the first quadrant of the coordinate plane, and interpret coordinate values of points in the context of the situation.

Below Proficient

Jorge graphed the number of books he read over several weeks as shown on the coordinate plane.

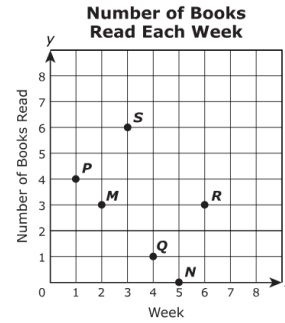


What are the coordinates of point S?

- A. (3,6)
- B. (6,3)
- C. (4,7)
- D. (7,4)

Approaching Proficient

Jorge graphed the number of books he read over several weeks as shown on the coordinate plane.

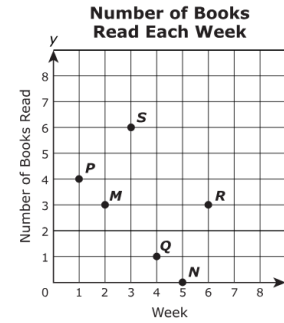


The coordinates of point S are (3,6). What are the coordinates of point M?

- A. (2,3)
- B. (3,2)
- C. (3,4)
- D. (4,3)

Proficient

Jorge graphed the number of books he read over several weeks as shown on the coordinate plane.



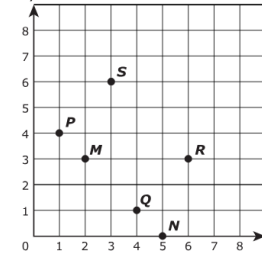
What are the coordinates of point S?

What do the coordinates of point S represent?

Above Proficient

Create a real-world context that can be solved by the graph shown.













Define the axes and describe what the coordinates of point S represents.



Geometry

5.G.3	Below Proficient	Approaching Proficient	Proficient	Above Proficient
<p>Expectation at Proficient:</p> <p>Recognize that attributes belonging to a category of two-dimensional figures also belong to all subcategories of that category. For example, all rectangles have four right angles and squares are rectangles, so all squares have four right angles.</p>	<p>Which figure always contains four right angles?</p> <p>A. parallelogram</p> <p>B. trapezoid</p> <p>C. rhombus</p> <p>D. rectangle</p>	<p>Which statement is true?</p> <p>A. All rectangles are rhombuses because all rectangles have opposite sides that are equal.</p> <p>B. All trapezoids are parallelograms because all trapezoids have at least one pair of parallel sides.</p> <p>C. All squares are rhombuses because all squares have four equal sides.</p> <p>D. All parallelograms are squares because all parallelograms have four right angles.</p>	<p>Which statements are true?</p> <p>Select the three correct answers.</p> <p>A. All squares are rhombuses because all squares have four equal sides.</p> <p>B. All parallelograms are quadrilaterals because all parallelograms have four sides.</p> <p>C. All rectangles are rhombuses because all rectangles have opposite sides that are equal.</p> <p>D. All trapezoids are parallelograms because all trapezoids have at least one pair of parallel sides.</p> <p>E. All squares are rectangles because all squares have vertices that are formed by perpendicular lines.</p>	<p>Explain why a square is also a rectangle.</p>

Geometry

5.G.4	Below Proficient	Approaching Proficient	Proficient	Above Proficient
<p>Expectation at Proficient:</p> <p>Classify two-dimensional figures in a hierarchy based on properties.</p>	<p>Which shape is not a quadrilateral?</p> <p>A. </p> <p>B. </p> <p>C. </p> <p>D. </p>	<p>Which shapes appear to be rectangles?</p> <p>Select the two correct answers.</p> <p>A. </p> <p>B. </p> <p>C. </p> <p>D. </p>	<p>Which shape is a parallelogram but not a rectangle?</p> <p>A. </p> <p>B. </p> <p>C. </p> <p>D. </p>	<p>Draw a shape that is a rhombus and a rectangle.</p> <p>What geometric figure did you draw?</p>

