Performance Tasks
Essential Questions

• What are some of the strategies to build student stamina for performance tasks?
• In what ways do you need to think differently about your teaching and assessments to help students navigate performance tasks?
## What’s the Difference?

### Performance Assessment
- Measure the process and products
- Based on student objectives
- Utilize checklists, student portfolios, projects, etc.
- Require students demonstrate their knowledge, reasoning, skills, and/or attitude

### Performance Task
- Both an assessment and instructional tool
- Focused on the requirements of the standards
- Looks closely at depth of understanding
- Is multi-faceted and, ideally, is used over time
- Linked together to provide an overall picture
Standard: W.4.1 Write opinion pieces on topics or texts, supporting a point of view with reasons and information.

Task Description: You are working for a newspaper and have investigated child labor issues. Based on your research, write an opinion piece, demonstrating knowledge you have gained about this complex issue. Explain the key issues and describe why people should or should not buy products made with child labor. As a good reporter you will need to support your point of view with reasons and information obtained from the texts.

Resources: Video - Life not sweet for Philippines' sugar cane child workers
“Child Labour.” And “Definition of Child Labour.” UNICEF.
Example Two

**Standards:**
**W.1:** Write arguments to support claims with clear reasons and relevant evidence.

**SL.4:** Present claims and findings, emphasizing salient points in a focused, coherent manner with pertinent descriptions, facts, details, and examples; use appropriate eye contact, adequate volume, and clear pronunciation.

**Task Description:** While reading *The Call of the Wild*, take notes in your journal about the roles of John Thornton and Judge Miller. Who, from the novel’s point of view, is the better master? Write an argument in which you justify your opinion, citing specific evidence from the text. Enter your thoughts in the classroom blog so you can compare your argument with those of your classmates.

**Resources:**
- The Call of the Wild
- Personal Journal
- Class blog
Math Examples
Grade 4 Performance task

TASK DETAILS

Task Name: Chocolate Bar Fractions

Grade: 4

Subject: Mathematics

Depth of Knowledge: 2

Task Description: This task asks students to multiply a fraction by a whole number and reason about the meaning of a solution that includes a fractional chocolate bar. Students are also asked to construct and critique arguments by reasoning about the products of whole numbers and fractions.
Part 1

John is giving out chocolate to his friends. If he wants to give each friend $\frac{2}{3}$ of a chocolate bar and he has 13 friends, how many chocolate bars will he need to buy?

*Use words, a model, or an equation to justify your answer.*

Part 2

William buys 4 chocolate bars and each bar weighs $\frac{1}{4}$ pound. Mary buys 2 chocolate bars and each one weighs $\frac{1}{2}$ pound. William claims that the chocolate weighs the same amount. Mary disagrees. Who is correct?

*Use a model and words to justify your answer.*
CHOCOLATE BAR FRACTIONS TASK: PERFORMANCE LEVEL 4

CHOCOLATE BAR FRACTIONS

Part 1
John is giving out chocolate to his friends. If he wants to give each friend \( \frac{3}{4} \) of a chocolate bar and he has 13 friends, how many chocolate bars will he need to buy?

Use words, a model, or an equation to justify your answer.

Answer: 9 chocolate bars

Equation: \( \frac{2}{3} \times 13 = \frac{26}{3} \)

Model:

\[
\begin{array}{c}
+ \quad + \\
+ \\
+ \\
\end{array}
\]

4.NF.4 Student uses a visual fraction model, an equation, and words to represent 26/3 as 8 and 2/3.

MP.1, MP.4, MP.6, MP.7

Part 2
William buys 4 chocolate bars and each bar weighs \( \frac{1}{4} \) pound. Mary buys 2 chocolate bars and each one weighs \( \frac{1}{3} \) pound. William claims the chocolate weighs the same amount. Mary disagrees. Who is correct? Use a model and words to justify your answer.

Answer: William

Words: \( \frac{4}{4} = 1 \)

4 1/4’s would be the same as \( \frac{4}{4} \) or a \( \frac{4}{4} \) split parts

1, 2, 3, 4 split parts is 1.

Equation: \( \frac{4}{4} \times 4 = 1 \); \( \frac{1}{4} \times 2 = \frac{1}{2} \)

Model: William

\[
\begin{array}{c}
\frac{1}{4} \quad \frac{1}{4} \\
\frac{1}{4} \\
\frac{1}{4} \\
\end{array}
\]

Mary

\[
\begin{array}{c}
\frac{1}{2} \\
\frac{1}{2} \\
\frac{1}{2} \\
\end{array}
\]

4.NF.2 Student compares two fractions with unlike numerators and denominators by relating them to the whole as a visual fraction model, and is able to use an equation and words to justify the answer to represent 26/3 as 8 and 2/3.

MP.1, MP.4, MP.6, MP.7
**CHOCOLATE BAR FRACTIONS TASK: PERFORMANCE LEVEL 3**

**CHOCOLATE BAR FRACTIONS**

**Part 1**
John is giving out chocolate to his friends. If he wants to give each friend \(\frac{2}{3}\) of a chocolate bar and he has 12 friends, how many chocolate bars will he need to buy?

*Use words, a model, or an equation to justify your answer.*

I got the answer by making a model with circles. Then I split each circle into thirds. After that I marked the chocolate with number to remember who got what. Answer: 8 bars.

**Part 2**
William buys 4 chocolate bars and each bar weighs \(\frac{1}{4}\) pound. Mary buys 2 chocolate bars and each one weighs \(\frac{1}{5}\) pound. William claims that the chocolate weighs the same amount. Mary disagrees. Who is correct? Use a model and words to justify your answer.

William is correct because \(4 \times \frac{1}{4} = 1\) just like \(2 \times \frac{1}{2} = 1\). What I did half the another model cut in forth.

**MP.3** Student is able to explain how the correct answers were obtained; however, the student does not justify the answers by using an equation to show the relationship between multiplication of a fraction by a whole number.

**MP.4, MP.7** Student is able in part 1 and part 2 to make use of structure by using visual fraction models and symbols to arrive at a correct answer.
CHOCOLATE BAR FRACTIONS TASK: PERFORMANCE LEVEL 2

CHOCOLATE BAR FRACTIONS

Part 1
John is giving out chocolate to his friends. If he wants to give each friend \( \frac{2}{3} \) of a chocolate bar and he has 13 friends, how many chocolate bars will he need to buy? Use words, a model, or an equation to justify your answer.

\[ \frac{2}{3} \times 13 = \frac{26}{3} \]

26 chocolate bars because 13 \( \times \frac{2}{3} \) is 26 and \( \frac{26}{3} \) could be 9

Part 2
William buys 4 chocolate bars and each bar weighs \( \frac{1}{2} \) pound. Mary buys 2 chocolate bars and each one weighs \( \frac{1}{4} \) pound. William claims that the chocolate weighs the same amount. Mary disagrees. Who is correct? Use a model and words to justify your answer.

\[ \frac{1}{4} \times 4 = \frac{4}{4} = 1 \text{ whole} \]

\[ \frac{1}{2} \times 2 = \frac{2}{2} = 1 \text{ whole} \]

William is correct because they both have 1 whole chocolate bar. When you multiply \( \frac{1}{2} \) by 2 you get \( \frac{2}{2} \).

And when you multiply \( \frac{1}{4} \) by 4 you get \( \frac{4}{4} \).

MP.1, MP.3, MP.4
Student is able to correctly use unit fractions to multiply a fraction by a whole number. Student does not attend to precision when referring to “1 whole chocolate bar” instead of pounds of chocolate.
CHOCOLATE BAR FRACTIONS TASK: PERFORMANCE LEVEL 1

CHOCOLATE BAR FRACTIONS

Part 1
John is giving out chocolate to his friends. If he wants to give each friend \( \frac{2}{3} \) of a chocolate bar and he has 13 friends, how many chocolate bars will he need to buy? Use words, a model, or an equation to justify your answer.

Part 2
William buys 4 chocolate bars and each bar weighs \( \frac{3}{4} \) pound. Mary buys 2 chocolate bars and each one weighs \( \frac{1}{2} \) pound. William claims that the chocolate weighs the same amount. Mary disagrees. Who is correct? Use a model and words to justify your answer.

Student is able to accurately represent visual models of unit fractions to multiply a fraction by a whole number (MP.1, MP.4).
Student will need more support with extending his/her understanding of fraction models to multiplication of unit fractions with whole numbers and being able to justify the solution in words.
GRADE 6 MATH: GOING MARBLES

UNIT OVERVIEW

This packet contains a curriculum-embedded task and instructional supports aligned to the Common Core standards. The task, “Time for Recess,” has been designed to provide a thorough understanding of multiplication of fractions, using both an area model and the algorithm.

TASK DETAILS

**Task Name:** Going Marbles

**Grade:** 6

**Subject:** Math

**Depth of Knowledge:** 5

**Task Description:** 6th Grade task on Ratios and Proportional Relationships. Students are expected to be able to find a fraction of a number. They are also expected to be able to set up a ratio table and use rates to make predictions.
6th Grade Task:

GOING MARBLES!

Answer the following questions using complete sentences. Be sure to show your mathematical reasoning for each question.

Your teacher gives you some marbles to place into four different boxes. She gives you clues about how many marbles go in each box so you can put the correct number of marbles inside.

PART A: Box A has 4 marbles. Box A has 5% of the marbles. What is the total amount of marbles in all four boxes?

Answer Sentence:_____________________________________________
PART B: Box B gets $\frac{3}{15}$ of the marbles. Luis says that he can use a ratio table to figure out how many marbles are in box B. Keisha says that it is impossible to use a ratio table to find the amount of marbles in box B. Who is correct? ________________

If you think Luis is correct, show the ratio table to figure out how many marbles are in box B. Write your answer sentence on the line below. If Keisha is correct, explain why. Then show another way to find out how many marbles are in box B and write your answer sentence on the line below.

Answer
Sentence: ___________________________________________
**PART C:** Your teacher tells you that the ratio of the marbles in Box B to those in Box C is 2 to 3. What is another way that your teacher could have written this without using the word “ratio”?

**PART D:** How many marbles are in box C?

**PART E:** All the rest of the marbles are in box D. I paid $3 for 10 marbles. At that rate, how much did the marbles in box D cost?

**PART F:** Explain how you found the cost of the marbles in box D.
## Going Marbles Rubric

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### Scoring:
- Total Points: 5
- Score: 4
- Score: 4 x 25
- Score: 100

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**Example Scoring:**
- If a student's work is presented in a neat and clear manner in an organized fashion, it is scored as 4.
- If the work is presented in a neat and clear manner in an organized fashion that is mostly easy to read, it is scored as 3.
- If the work appears sloppy and unorganized, it is scored as 0.

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**Notes:**
- The work is presented in a neat and clear manner in an organized fashion that is mostly easy to read.
- The work is presented in an organized fashion, but may be hard to read at times.
- No attempt was made to organize the problem.

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**Teacher Name:**

**Student Name:**

**Date:**

**Class:**
Part III: An Extended Performance Task

Gas Bills, Heating Degree Days, and Energy Efficiency

Here is a typical story about an Ohio family concerned with saving money and energy by better insulating their house.

Kevin and Shana Johnson's mother was surprised by some very high gas heating bills during the winter months of 2007. To improve the energy efficiency of her house, Ms. Johnson found a contractor who installed new insulation and sealed some of her windows. He charged her $600 for this work and told her he was pretty sure that her gas bills would go down by "at least 10 percent each year." Since she had spent nearly $1,500 to keep her house warm the previous winter, she expected her investment would conserve enough energy to save at least $150 each winter (10% of $1,500) on her gas bills.

Ms. Johnson's gas bill in January 2007 was $240. When she got the bill for January 2008, she was stunned that the new bill was $235. If the new insulation was going to save only $5 each month, it was going to take a very long time to earn back the $600 she had spent. So she called the insulation contractor to see if he had an explanation for what might have gone wrong. The contractor pointed out that the month of January had been very cold this year and that the rates had gone up from...
Winter Temperatures and "Heating Degree Days"
Kevin and Shana quickly found a description of “degree days” on Wikipedia at http://en.wikipedia.org/wiki/Heating_degree_day. Here is some of what they learned:

Degree Days are a method for determining cumulative temperatures over the course of a season. They were originally designed to evaluate energy demand and consumption, and are based on how far the average temperature departs from a human comfort level of 65°F. Each degree of temperature above 65°F is counted as one cooling degree day, and each degree of temperature below 65°F is counted as one heating degree day. For example, a day with an average temperature of 45°F is counted as having 20 heating degree days. The number of degree days accumulated in a day is proportional to the amount of heating/cooling you would have to do to a building to reach the human comfort level of 65°F. The degree days are accumulated each day over the course of a heating/cooling season, and can be compared to a long term (multi-year) average, or norm, to see if that season was warmer or cooler than usual.

Task Description
Assess the cost-effectiveness of Ms. Johnson’s new insulation and window sealing. In your assessment, you must do the following:

- Compare Ms. Johnson’s gas bills from January 2007 and January 2008, estimate her savings due to the new insulation and sealing, and explain your reasoning.

- Decide whether the insulation and sealing work on Ms Johnson’s house was cost-effective, and provide evidence for your decision.

Internet Resources
Heating and Cooling Degree Days - Definitions and Data Sources
Definition and discussion - http://en.wikipedia.org/wiki/Heating_degree_day
ELA/Literacy Examples
### 2nd Grade Reading: Reading Nonfiction, Reading the World

**Unit Topic and Length:**
- This Nonfiction Reading unit lasts a month and is taught alongside a unit in Information Writing.
**Final Performance Task:**

At the end of the unit, you will administer a performance assessment that assesses for both the Nonfiction Reading Unit and the Information Writing Unit in second grade. This assessment will take four periods. The children will have the opportunity to watch, listen to, and read four texts about animal families: a video, two read-aloud texts that are above grade level (N-0-P), and a text they’ll read independently that is at grade-level complexity for mid-way through second grade (L). Afterwards, they will independently write an information book using what they have learned and what they already knew about animal families. *Please see the instructions for the task for full details.*
Based on the information in the text “Biography of Amelia Earhart,” write an essay that summarizes and explains the challenges Earhart faced throughout her life. Remember to use textual evidence to support your ideas.
You have read three texts describing Amelia Earhart. All three include the claim that Earhart was a brave, courageous person. The three texts are:

- “Biography of Amelia Earhart”
- “Earhart's Final Resting Place Believed Found”
- “Amelia Earhart’s Life and Disappearance”

Consider the argument each author uses to demonstrate Earhart’s bravery.

Write an essay that analyzes the strength of the arguments about Earhart’s bravery in at least two of the texts. Remember to use textual evidence to support your ideas.
Literary Analysis Task
(Grade 10):
Ovid’s “Daedalus and Icarus” and
Sexton’s “To a Friend Whose Work Has Come to Triumph”

This is for ALL students!
Use what you have learned from reading “Daedalus and Icarus” by Ovid and “To a Friend Whose Work Has Come to Triumph” by Anne Sexton to write an essay that provides an analysis of how Sexton transforms Daedalus and Icarus.

As a starting point, you may want to consider what is emphasized, absent, or different in the two texts, but feel free to develop your own focus for analysis.

Develop your essay by providing textual evidence from both texts. Be sure to follow the conventions of standard English.
Part A
Which of the following sentences best states an important theme about human behavior as described in Ovid’s “Daedalus and Icarus”?

a. Striving to achieve one’s dreams is a worthwhile endeavor.

b. The thoughtlessness of youth can have tragic results.*

c. Imagination and creativity bring their own rewards.

d. Everyone should learn from his or her mistakes.
Part B
Select three pieces of evidence from Ovid’s “Daedalus and Icarus” that support the answer to Part A.

a. “and by his playfulness retard the work/his anxious father planned” (lines 310-311)*
b. “But when at last/the father finished it, he poised himself” (lines 312-313)
c. “he fitted on his son the plumed wings/ with trembling hands, while down his withered cheeks/the tears were falling” (lines 327-329)
d. “Proud of his success/the foolish Icarus forsook his guide” (lines 348-349)*
e. “and, bold in vanity, began to soar/rising above his wings to touch the skies” (lines 350-351)*
f. “and as the years went by the gifted youth/began to rival his instructor’s art” (lines 376-377)
g. “Wherefore Daedalus/enraged and envious, sought to slay the youth” (lines 384-385)
h. “The Partridge hides/in shaded places by the leafy trees...for it is mindful of its former fall” (lines 395-396, 399)
Performance Task Structure

- Includes two levels of inquiry
  - Structure
  - Independence
- Gradual Release of Responsibility
  - Teacher and student roles change
  - Expanded and deepened understanding
- Engages students in multiple opportunities
  - Reading, writing, listening, speaking
  - Engagement, Exploration, Explanation, Elaboration, Evaluation
Performance Task Rubric
13 Elements of a Performance Task Rubric

1. Contains the vocabulary of the CCSS

2. Directly related to the concepts (what students need to KNOW: found in the nouns and noun phrases) and the learning targets (what students need to be able to DO: found in the verbs) identified within the standards.

3. Depth of Knowledge levels are matched to the “ceiling” found in the standards.

4. Includes multiple, related standards (Domains or Standards), including Literacy Standards and Mathematical Practices.

5. Multiple components that collectively, require students to engage in both specific as well as generalized thinking.
6. Requires students to explain their reasoning rather than simply “getting the answer.”

7. The answer from each task must provide the student and teacher with specific, useful information concerning the student’s progress toward the standard.

8. Constructed to take more than one class period to complete; giving students extensive time to process.

9. Must require the use of multiple resources (paper-based texts, audio, video, data, etc.) and be both teacher and student selected.
10. Includes various ways for students to demonstrate their knowledge and deep understanding of the concepts and content.

11. Some should provide opportunities for students to work collaboratively in solving the task.

12. Encourages divergent thinking, multiple solutions, not just one right answer.

13. Should apply thinking to real-world problems.
Using Performance Tasks

HOW ARE PERFORMANCE TASKS USED WITH YOUR CLASS?
Curriculum-embedded performance tasks are designed to be used as part of a learning unit related to several Common Core State Standards.

The performance tasks are NOT intended to be administered as summative tests. Students are not expected to be able to complete all components of the tasks independently. Teachers play an important role in providing guidance and feedback as students work toward a greater level of independence. Performance tasks provide many opportunities for "teachable moments" during which teachers can provide lessons on the skills necessary for students to proceed independently.

There is no single "correct" answer for any of the performance tasks. Students' conclusions, however, should be logical, or "valid" interpretations of data collected in a systematic, or "reliable" way. Variations in students' procedures, data and conclusions provide opportunities for extended class discussions.

Performance tasks should be differentiated to accommodate students' learning needs and prior experiences. The main goal is to give all students opportunities to become curious, pose questions, collect and analyze data, and communicate conclusions. For different learners, these same actions will require different levels of "scaffolding" as they move toward greater levels of independence.