COMMON CORE

State Standards

3rd Grade

Math Exemplar Performance Task

SAMPLER

MATHEMATICS

C2 Collaborative, Inc.
Supporting Today's Educators, Shaping Tomorrow's Leaders

800.318.4555 | wwwC2Ready.org

C2 Collaborative, Inc.
1s660 Midwest Road, Suite 310
Oakbrook Terrace, IL 60181
(800) 318-4555
www.C2Ready.org

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INTRODUCTION

The Common Core Institute is pleased to provide student **Performance Task Items** and the resource of **Online Planning Coach Modules** for teachers as they plan their units and/or lessons leading up to the performance tasks. The **Performance Task Items** have been created for Mathematics for grades 3-8 and the following secondary courses: Algebra I, Geometry, and Algebra II. **Performance Tasks Items** are aligned to the Common Core State Standards and focus on critical focus areas. These resources, designed by educators, for educators, can be used district-wide, school-wide or by teachers in individual classrooms.

The purpose of the **Performance Task Items** is to provide insight into how deeply a particular student understands the expectations embedded within one or more standard. Each task presents students with a complex, real-world challenge in which the scenario, role, process, and product are authentic. Students must then demonstrate that they have the skills and knowledge necessary to complete the task.

The intent of this resource is not so much to be utilized as a summative assessment, but to help you as an educator plan backwards for student success. These resources help you plan instruction purposefully and design student tasks/experiences that require higher levels of cognitive demand to address the rigor and depth of knowledge required for students to be college and career ready.

Understanding the Organization and Suggested Uses of the Resources

The **Performance Task Items Resource Package** contains the performance task for that grade level or course, a rubric for scoring, student resources or articles, and an accompanying **Online Planning Coach Module** to serve as your "personal coach" as you plan units/lessons. We highly suggest that you view the **Performance Task Introduction Module** to learn the purpose of performance tasks, how they differ from other assessments, and how performance tasks can drive instruction in your classroom. Next, you will want to view the **Online Planning Coach Module** for your specific grade/course. Each **Online Planning Coach Module** walks you through the specific performance task including the rubric for scoring, and offers helpful hints and tips to help you plan your unit/lesson leading up to the administration of the performance task, including common student misconceptions. Since the suggested purpose of the performance task items is to be used as a formative assessment, the information collected from the rubrics provides critical data to guide and scaffold instruction as you differentiate student experiences.

Performance Task Item: Wrapped Candy
Grade Level: Third Grade

TASK OVERVIEW/PURPOSE

Focus Area: Represent and solve problems involving multiplication and division

Core Idea of Focus Area:
Students develop an understanding of the meanings of multiplication and division of whole numbers through activities and problems involving equal-sized groups, arrays, and area models.

Learning Target: The student will be able to use multiplication and division flexibly to solve real-world problems.

COMMON CORE STATE STANDARDS

Common Core Domain: Operations and Algebraic Thinking

Content Standards:

- 3.OA.A.1: Interpret products of whole numbers, e.g., interpret 5×7 as the total number of objects in 5 groups of 7 objects each. For example, describe a context in which a total number of objects can be expressed as 5×7.

- 3.OA.A.2: Interpret whole-number quotients of whole numbers, e.g., interpret $56 \div 8$ as the number of objects in each share when 56 objects are partitioned equally into 8 shares, or as a number of shares when 56 objects are partitioned into equal shares of 8 objects each. For example, describe a context in which a number of shares or a number of groups can be expressed as $56 \div 8$.

Practice Standards:

- 3.MP. 1: Make sense of problems and persevere in solving them.

- 3.MP. 2: Reason abstractly and quantitatively.

- 3.MP. 4: Model with mathematics

- 3.MP. 7: Look for and make use of structure.

IDEAS FOR PLANNING & SCAFFOLDING

- Introduce new concepts through the use of essential academic vocabulary.
- Give clear verbal explanations to portray key concepts and relationships.
- Connect new information or skills to what students already know.
- Provide additional instruction or support to students who lack necessary background.
- Model the steps in the strategy by using the strategy think aloud.
- Use sentence stems to model the language of Mathematics.

Student Misconceptions:

- Students might assume that there is only one way to solve these types of problems based on the experiences they have had up to this point. It is important for students to share their thinking so that multiple strategies are experienced.

- Students might add the number of candy in each bag together without considering the concept of "each". The use of manipulatives will assist students to visualize multiplication and division. The numbers in this task were chosen to assist with visualization.

QUESTIONS FOR REFLECTION

For Student:

- Why are you able to use some packages of candy for the party and not others?
- What numbers made it easy to give guests an equal amount with none leftover? Why?

For Teacher:

- What questions did I ask that clarified student thinking?
- What connections was I able to make to prior learning?

IDEAS FOR EXTENDED LEARNING

- Students can create their own problems to calculate how to use the remainders. They can explore "fair share" using fractions.

- Students can explore prime and composite numbers by changing the number of guests and the amount of candy in each package.

- Students can discuss how the problem would be different if the guests did not get the same number of pieces of candy.

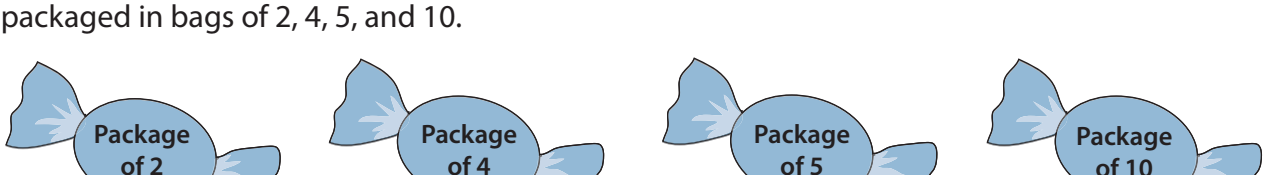
MATERIALS/RESOURCES

- Worksheet
- Manipulatives, if needed

Name: _____

Math Performance Task
Wrapped Candy

You went to the store to buy wrapped candy for your birthday party treat bags. The candy was packaged in bags of 2, 4, 5, and 10.



1A) 20 of your friends are attending your party. If you can buy only one size package, how many of each package of candy should you buy to make sure each friend gets one piece of candy – without any leftover?

Package of 2 = _____ Package of 4 = _____

Package of 5 = _____ Package of 10 = _____

1B) Write a number sentence for each solution above to show how you got your answers.

2A) Your mom called to tell you that 4 more friends have said they can attend your party. (New total = 24 friends)

How many of each candy package below can you now buy to make sure each person gets the same amount of candy – without having any leftover candy? (If a package can't be purchased, put an X on the line.)

Package of 2 = _____ Package of 4 = _____

Package of 5 = _____ Package of 10 = _____

2B) Explain how you got each of your answers in **2A.**

3A) If you decided to buy a combination of candy packages, what is one combination of bags you could buy in order to get 24 pieces of candy? Show how you found your solution.

3B) Is your solution the only possible answer? Explain.

PERFORMANCE TASK SCORING RUBRIC

Performance Task
Wrapped Candy

Focus: Represent and solve problems involving multiplication and division.	Depth of Knowledge Level	Points	Possible Section Points	Total Points Earned by Student
1A. 1 point for each correct answer Package of 2 - Buy 10 of each to get 1 piece per friend. Package of 4 - Buy 5 of each to get 1 piece per friend. Package of 5 - Buy 4 of each to get 1 piece per friend. Package of 10 - Buy 2 of each to get 1 piece per friend.	1	 1 1 1 1	4	
1B. 1 point for each correct answer Package of 2: 2 x ___ = 20 or 20 ÷2 = 10 Package of 4: 4 x ___ = 20 or 20 ÷ 4 = 5 Package of 5: 5 x ___ = 20 or 20 ÷ 5 = 4 P ackage of 10: 10 x ___ = 20 or 20 ÷ 10 =2	1	 1 1 1 1	4	
2A. 1 point for each correct answer Package of 2: 2 x ___ = 24 or 24 ÷ 2 = 12 Package of 4: 2 x ___ = 24 or 24 ÷ 4 Package of 5: 5 is not a factor of 24, so answer = Package of 10: 10 is not a factor of 24, so answer =	2	 1 1 1 1	4	
2B. 2 points for each correct explanation "I know that I can (divide or multiply) by 2 to equal 24 because 2 is a factor of 24." "I know that I can (divide or multiply) by 4 to equal 24 because 4 is a factor of 24." "I know I cannot (multiply or divide) by 5 to get 24 because 5 is not a factor of 24." "I know I cannot (multiply or divide) by 10 to get 24 because10 is not a factor of 24."	2	 2 2 2 2	8	
3A. 3 points for a correct answer Answers will vary, – All combinations that equal 24 will be accepted.	2	 3	3	
3B. 3 points for a correct explanation Answers will vary – Students receive points for being able to support their answer with correct mathematical language.	2	 3	3	
		TOTAL POINTS	**26**	

PERFORMANCE TASK RUBRIC INTERPRETATION

RUBRIC INTERPRETATION (source: Oregon Department of Education)

(26) Full Conceptual Understanding: The student uses all relevant information to solve the task.

- The student's answer is consistent with the question/problem.
- The student is able to translate the problem into appropriate mathematical language.

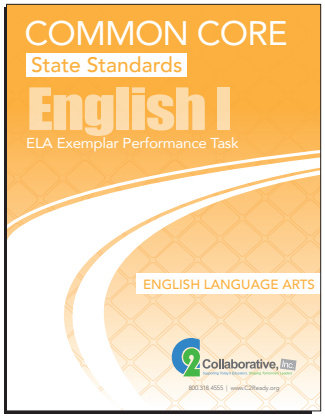
(12) Partial Conceptual Understanding: The student extracts the "essence" of the task, but is unable to use this information to solve the task.

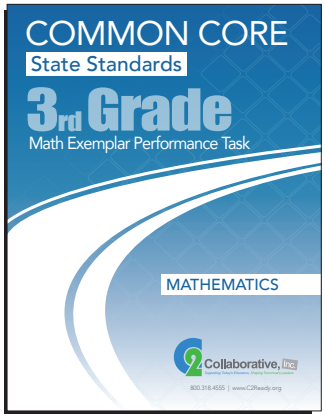
- The student is only partially able to make connections between/among the concepts.
- The student's solution is not fully related to the question.
- The student understands one portion of the task, but not the complete task.

(0) Lack of Conceptual Understanding: The student's solution is inconsistent or unrelated to the task.

- The student translates the problem(s) into inappropriate mathematical concepts.
- The student uses incorrect procedures without understanding the concepts related to the task.

C2Collaborative, Inc. provides the following materials for enhanced classroom instruction aligned to meet the needs of 21st Century learners.





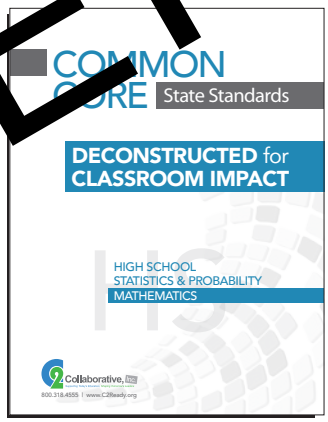
ELA & Math Exemplar Performance Tasks Grades 3 and Up

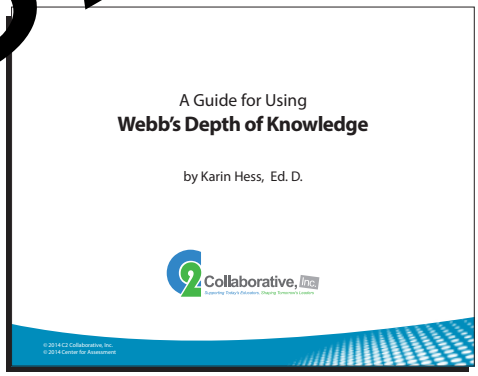
This teacher-friendly tool is designed for both instruction and formative assessment.

Performance Tasks can provide insight into how deeply a particular student understands the expectations embedded within one or more standard.

Common Core State Standards Deconstructed for Classroom Impact Available for ELA & Math, K-12

Plan instruction with everything you need at your fingertips: Learning Progressions, Big Ideas, Essential Questions, Deconstruction of Standards, Depth of Knowledge and more





A Guide for Using Webb's Depth of Knowledge

An indispensable spiral-bound resource printed on glossy card stock for ensuring assessment, instructional activities, and standards are all aligned by the level of cognitive demand.

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