



## The Winner Is...Native Plants!



*"Wildflowers on the Colville National Forest"* by [U.S. Forest Service-Pacific Northwest Region](#) is licensed under [CC BY 2.0](#).

### Grade Level Focus:

- 3-5

### Possible Content Standards:

- CCSS.MATH.CONTENT.4.OA.A.3
- CCSS.MATH.CONTENT.4.MD.3

### Mathematical Practices Focus:

- SMP1 - Make sense of problems and persevere in solving them.
- SMP4 - Model with mathematics.

### Domain Focus:

- Operations and Algebraic Thinking

## Overview

The purpose of this Performance task is to provide students with an opportunity to problem solve based on a real-world situation (Claims 2 & 4). Due to the nature of the task, there are a variety of mathematical approaches students can take to successfully complete the task, however the mathematical approach presented in Act Three of the task addresses CCSS Domain of Operation and Algebraic Thinking. With this approach, students are shown different strategies for using multiplication to find the solution. The variety of strategies demonstrated and provided to students allows for students at all proficiency levels to access the problem and reach the solution. This performance task is intended to be presented to students with prior knowledge of multiplication as an operation and some experience multiplying numbers with at least 2-digits. Additionally, students will need previous knowledge of area formulas for rectangles and squares. It would serve well as an assessment tool at the end of a unit.

The purpose of this performance task is to provide students with an opportunity to problem solve based on a real-world situation. The task is modeled after the [3 ACT Fill'ER Up by Graham Fletcher](#). In the task, students are presented with a design challenge framed as a solution to drought frequency for their local area. Students then decide on necessary resources for finding the solution and are given time as a group to complete their work. The task concludes by having students examine design solutions to determine if they meet the requirements. Student discussion will lead to concrete evidence of students' ability to use appropriate mathematical strategies to meet the design requirements.

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# 3-5 Math Performance Task: The Winner Is...Native Plants!

## Content Focus:

- Operations and Algebraic Thinking

## Possible Content Standards:

- CCSS.MATH.CONTENT.4.OA.A.3
- CCSS.MATH.CONTENT.4.MD.3

## Mathematical Practices Focus:

- SMP1 - Make sense of problems and persevere in solving them.
- SMP4 - Model with mathematics.

## Smarter-Balanced Assessment (SBA) Targets Addressed:

- Claim 2 Target A: Apply mathematics to solve well-posed problems in pure mathematics arising in everyday life, society, and the workplace.
- Claim 4 Target B: Construct, autonomously, chains of reasoning to justify mathematical models used, interpretations made, and solutions proposed for a complex problem.
- Claim 4 Target E: Analyze the adequacy of and make improvements to an existing model or develop a mathematical model of a real phenomenon.

## Overview of task with standards addressed specified

If students were to use the mathematical approach presented in Act Three of the task, their efforts would support progress in the CCSS Domain of Operation and Algebraic Thinking. In math standard [4.OA.A.3](#), students are to use whole numbers to complete multistep word problems using the four operations. In the case of this task, these numbers are measurements; either those provided in the task scenario, or authentic measurements of a potential native plants garden area. Because these measurements are for garden bed construction, students will most likely use the area and perimeter formulas for rectangles (supporting math standard [4.MD.A.3](#)).

## Learning Goal Statement

- Students will understand how to analyze complex, real-world scenarios. (Claim 4)
- Students will solve a complex problem by making productive use of knowledge and problem-solving strategies (Claim 2)

## Success Criteria

- I can apply different operations to help me solve a real-world problem.
- I can solve problems involving whole numbers with multiple digits.



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## Step By Step:

### 1. Materials

- o Recording sheet, scratch paper, whiteboards, math journal (if applicable) for each group
- o Technology to show videos/PowerPoint
- o Post-it or notecard for each student

### 2. Pre-Planning

- o The context of the performance task is based on images from the National Integrated Drought Information System (NIDIS). You can use the images provided in “The Winner Is” presentation or visit the NIDIS website to access your local area’s drought history. These elements are linked in “The Winner Is” presentation. Check that the link is successful prior to the lesson and find the history of your local area. The link below should also provide you access if needed:
  - o [Current U.S. Drought Monitor Conditions for Washington](https://www.drought.gov/states/washington)  
<<<https://www.drought.gov/states/washington>>>
- o Additional information and supporting curriculum for providing instruction on native plants can be found through the following link:
  - o [BLM Classroom Investigations Series](https://www.blm.gov/sites/default/files/docs/2022-06/Native-Plants_BLM-classroom-invesigation-series-TEACHER.pdf)  
<<[https://www.blm.gov/sites/default/files/docs/2022-06/Native-Plants\\_BLM-classroom-invesigation-series-TEACHER.pdf](https://www.blm.gov/sites/default/files/docs/2022-06/Native-Plants_BLM-classroom-invesigation-series-TEACHER.pdf)>>
- o Before the lesson, decide if you would like the final design to be at your school or an area of your community. On the “A Schoolyard Challenge” slide, you will have to enter your school's name. Or if you choose a location in the community, use the “A Community Challenge.”
- o This lesson will include productive discussion that will open opportunities for multiple possible solutions. Prepare for this by making predictions about what students might come up with.
- o Prepare access to materials such as scratch paper, math manipulatives, and other materials you see fit for use as needed through the task.
- o There is an opportunity for students to take their learning outside. If you plan to take students outside, determine the best location for safety and possibility of finding signs of drought.
- o There is an opportunity on the “Another Reason” slide to connect to 4th grade Next Generation Science standards (4-ESS2-1). Students observe the experiment in the video and then discuss how the native plants offer other benefits to our community. This is not essential, so decide if you have time and would like to include it in your instruction.

### 3. Act 1: Introduction

- o Display the “Learning Goals and Success Criteria” slide from “The Winner Is” presentation. Have volunteers read learning goals aloud. Use the Think, Pair, Share strategy to have students respond to the prompt: “What connections or questions come to mind in relation to these learning goals?”



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- o Display the slide “What is Drought?” and define drought with the class: not having enough water for living things such as plants, animals, and humans.
- o If you intend to provide an opportunity for students to take their learning outside to build a richer experience for the rest of the performance task, display the slide “What are Signs of Drought” and discuss signs of drought such as those pictured. After the discussion, take students to the designated area to look for and discuss signs of life not having enough water.
- o Once ready to continue, display “What do you notice and wonder?” explaining to students that you will be displaying several graphs for students to observe and then in their groups discuss any noticing and wonderings. Encourage the use of the sentence frame and model what a notice sentence and wondering sentence might sound like.
- o Display graphical representations of the data. “Drought Charts” (slides 7-10) are for Yakima, WA. The “Current U.S. Drought Monitor Conditions” slide will take you to a link for graphs of your local area’s drought history for the time you designate. By going to the website, you can interact with the graph and show individual colors, one at a time.
- o Continue to display the data with the prompt: What do you notice and wonder? Have students record ideas on their **Recording Sheet**.
- o Record some group responses on class chart on the “What do you notice and wonder?” slide, or similar chart.
- o Display the slide “How often are we in drought?” and bring students back to the idea that the graphs demonstrate large areas are designated as being in a drought. This knowledge is considered by various members of the community when they make decisions, such as the Roadside Landscape Architect. Review the information on the [Career Profile Card](#).
- o Display the slide, “The Solution: Native Plants” and share with students that one tool for drought resilient communities and Roadside Landscape Architects use are Native Plants. Define native plants and have students discuss how larger roots would be beneficial to native plants' success.
- o Display “Another Reason.” This slide provides an opportunity to connect to 4th grade Next Generation Science standards (4-ESS2-1). Students observe the experiment in the video and then discuss how the native plants offer other benefits to our community.
- o Display either the “A Schoolyard Challenge” OR “A Community Challenge” slide (depending on which location the garden will be) and introduce students to the task.
  - o Go through “The winning design must meet the following guidelines” slides and review the requirements for the garden designs. Direct students to these requirements on their **Recording Sheet**. When discussing the opportunity for bonus points, highlight the practice of conservation by using the smallest amount of resources for the biggest impact. Draw students’ attention to the red lines on the first “The winning design...” slide in order to highlight the straight sides and help students better understand what a “garden bed” means. Bring to students’ attention the 36-inch width meets the Americans with Disabilities Act and will ensure that the garden is accessible for all community members.

### 4. Act 2: Conflict

- o Display the “Do You Have Everything You Need?” slide asking students, “Do you have everything you need to solve your problem?” Inform students that you will be providing them with poster paper



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(Ledger size, 11x17", works fine) to present their work and solution on. Give students time to create a list of materials they will need on Question 2 of their **Recording Sheet**.

- o The slide "Helpful Information and Tools" provides examples of various strategies for multiplying numbers with multiple digits.
  - o These elements can be provided to individual groups by printing the **Information Cards**.
- o Instruct students to record their thinking and math work on the provided poster sheet. Inform students that this work will be collected as evidence of their learning.
- o As students are working, be sure to ask questions about their thinking. Take note of different strategies students are using.
- o All groups will share their design and strategies with the class during Act 3: The Resolution. Make sure to identify groups whose strategies demonstrate math learning that aligns with learning goals.

### 5. Act 3: Resolution

- o Display the "Design Guidelines Summary" slide that revisits the requirements for the design. Allow groups to share their groups' answers with a complete description of how they completed the task. Remind students of access to **Discussion Frames** for complete responses.
- o Ask questions that allow students to make connections between the different answer statements to the learning goal. For example: How were these approaches similar/different?
- o Have students review the checklist before moving to the next presenter.
- o Display the slide "What did you learn today?" and inform students they will complete this task on the provided sticky or note card and will be collected with the group recording sheet.
  - o Ask students to rate their learning of the learning goals 0-10 (0 being you made no connection to the learning goals, 10 being you could teach this content).
  - o Ask students to summarize their learning in 1-3 sentences.

### Accessibility Strategies Used

- o Scratch paper: Students can use blank paper to record thinking, complete calculations, create diagrams, etc.
- o Multiplication Strategies: Students are provided with a variety of strategies for multiplication which allows students to work at their own level of proficiency. Additionally, students can be challenged to use multiple strategies to demonstrate a deeper understanding of the operation.
- o Manipulatives: Tools such as cubes or base-ten blocks could be used as concrete representations to support students at various proficiency levels.

### Things to Consider

- o The lesson can be split into 2-3 days where the students are introduced to the anticipatory concepts on day one. Then students find solutions to the task and share and discuss their designs on the second or third day.
- o There is opportunity for differentiation with intentional grouping of students by skill level, however this is not essential for students to meet the learning targets.
- o This task could be used as a math classroom tool in several ways:
  - o as formative assessment pre- or post-instruction;



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- as an opportunity to practice new skills;
- as practice for state tests; or
- to help make connections to math in the world outside of the classroom.

### Formative Assessment Process

- Clarify learning targets throughout the lesson. This is specifically done at the beginning and end but is helpful at any point to further students' learning.
- Evidence of student learning is found in multiple areas of the lesson. The Group Recording Sheet and individual responses are concrete options. Teacher observations, student questions, and student discussion provide additional evidence of students meeting learning targets.
- Use observations of student thinking and other evidence as an opportunity for purposeful discussions around the math concepts. This can be opportunities to reteach or extend learning of math concepts.
- Feedback based on evidence of student learning should be provided to students throughout the lesson. This can happen as the teacher circulates the room, during class discussion, or on group or individual response sheets.

### Strategies Used: In-depth look at teaching strategies used in the lesson

- 3 ACT Task
  - This is a whole-group task made up of 3 parts: Act 1 is an engaging situation that peaks students' curiosity, Act 2 is where students seek information and work towards a solution, Act 3 finishes the task by discussing solutions and tying the work back to the learning targets.
- Think-Pair-Share
  - With this strategy students are given the opportunity to examine a prompt as an individual, then with a partner or small group, and finally share and listen to responses among the whole class.
- Notice/Wonder
  - This strategy allows students to unpack a problem or prompt before beginning to solve the problem or respond to the prompt. The purpose is to create a common experience and provide access for all students in an environment where students share their thoughts freely because there is no expectation to find the answer.
  - Find more about the Notice and Wonder strategy on the OER Commons:  
<<[www.oercommons.org/courseware/lesson/79074/overview?section=1](http://www.oercommons.org/courseware/lesson/79074/overview?section=1)>>

### Extensions and Connections learned from teacher implementation

- The challenge in the task is to apply what students know to a rich, in-context problem. While the mathematics they may use to solve the problem addresses earlier standards, the modeling of the problem brings up the complexity and difficulty for students.

### Samples of Student Work

*Coming soon.*





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## Formative Assessment Rubric

Rubric Components	Point Scale			Student Score and Rationale
	3	2	1	
Student understands how to analyze complex, real-world scenarios.	Pulls out the appropriate information from the provided guidelines. Accurately set up and solve equations using strategies that demonstrate understanding of complex mathematical approaches and numbers with digits not regularly practiced in class.	Pulls out the appropriate information from the provided guidelines and chooses appropriate operations to find answers to the group's question. Accurately set up and solve equations using strategies and numbers with digits regularly practiced in class.	Requires support in pulling out appropriate information from the provided guidelines and determining appropriate operation to find answer to group's question. May or not accurately set up and solve the equation.	
Student solves a complex problem by making productive use of knowledge and problem-solving strategies	Analyze, explain, and demonstrate solving a problem with multiple representations in multiple ways. Learn from previous attempts to solve problems.	Explain and understand the process in solving a problem and representing it in several ways. Plans a solution pathway.	Explain and understand solving a problem one way. Only uses concrete objects or pictures to help conceptualize and solve a problem.	
Student applies different operations to help solve a real-world problem.	Independently determines appropriate operation and creates 1 or more accurate equations. Demonstrates multiple strategies to find solutions.	Independently determines appropriate operation and creates accurate equation to find correct solution.	Requires support to create equations and determine appropriate operations to find solutions. Unable to independently find a mathematically correct solution.	
Student solves problems involving whole numbers with multiple digits.	Use strategy involving creation of equations to accurately find solutions. Numbers used in the equation are above grade-level place values.	Use strategy involving creation of equations to accurately find solutions. Numbers used in the equation are at grade-level place values.	Only uses concrete objects or pictures to help conceptualize and solve a problem.	



# 3-5 Math Performance Task: The Winner Is...Native Plants!

## Presentation Materials - PowerPoint Slides

# The Winner Is...Native Plants!

...

Using Native Plants to Support Drought Conscious Communities




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### Learning Goals:

- ☼ Students will understand how to analyze complex, real-world scenarios. (Claim 4)
- ☼ Students will solve a complex problem by making productive use of knowledge and problem-solving strategies (Claim 2)


### Success Criteria:

- ☼ I can apply different operations to help me solve a real-world problem.
- ☼ I can solve problems involving whole numbers with multiple digits.




2

### What is Drought?



Not having enough water for living things such as plants, animals, and humans.



3

### What are Signs of Drought?



Take some time to head outside.  
Explore your playground for signs that life is not getting enough water.



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What do you notice and wonder?

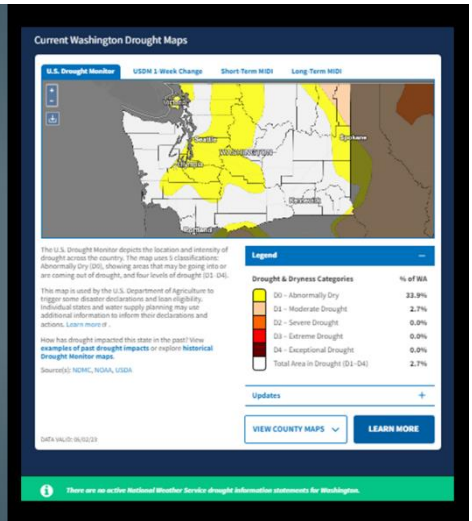
Notice (I noticed _____)	Wonder (I am wondering _____)

5

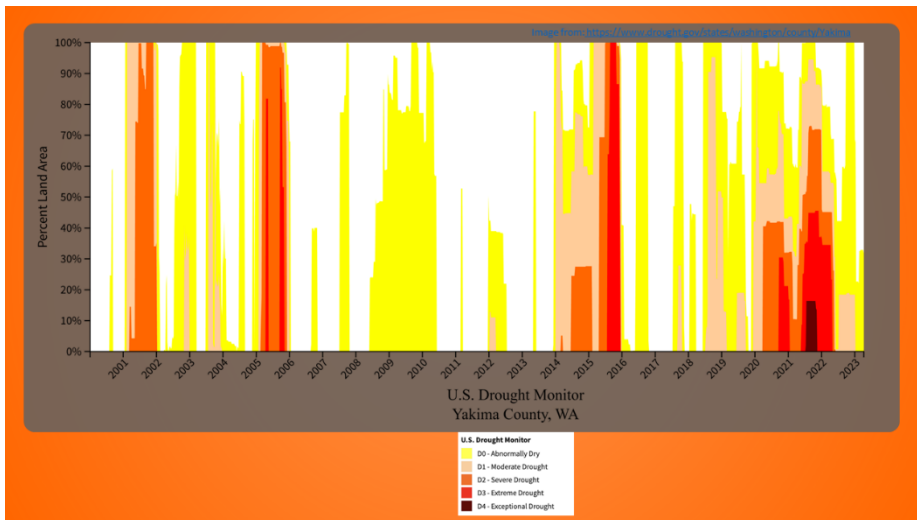
## Current U.S. Drought Monitor Conditions

[drought.gov/states/washington](https://drought.gov/states/washington)

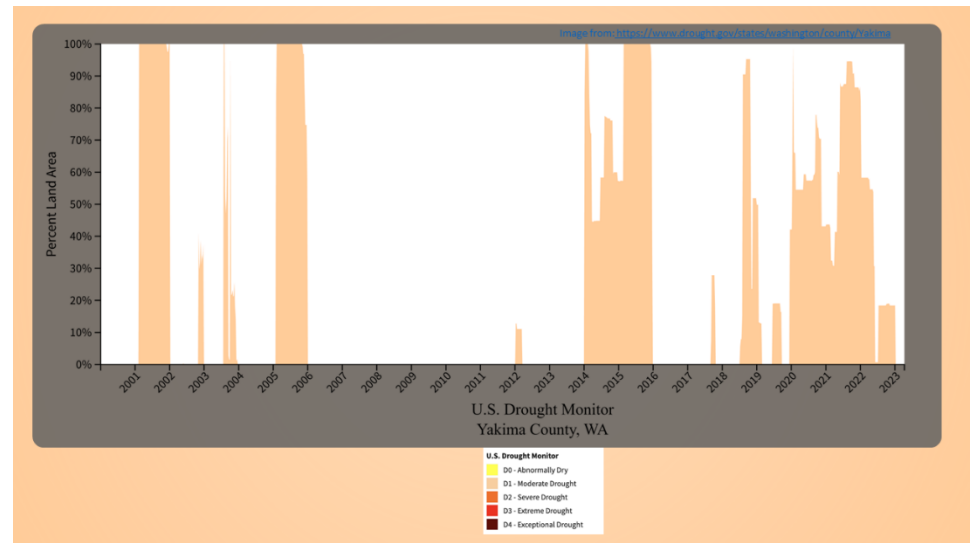
Use this link to find your counties graphs.  
The slides that follow are for Yakima County.



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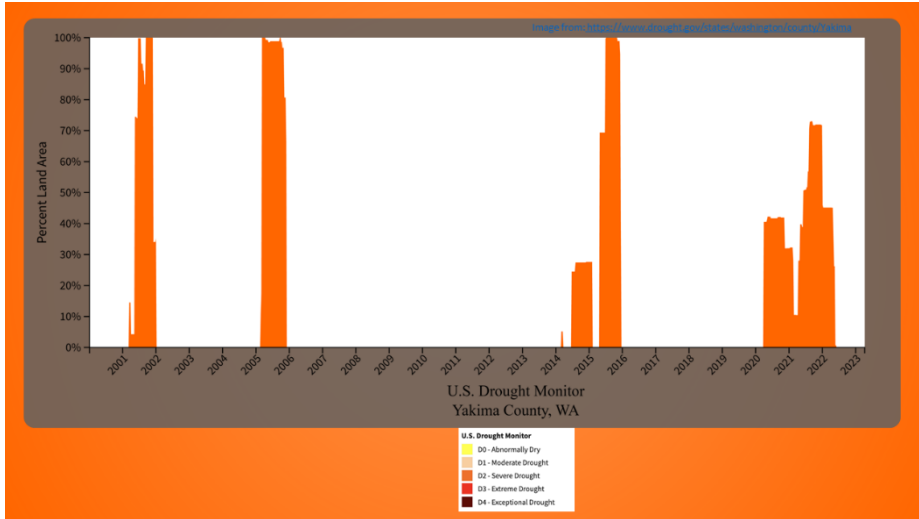
7



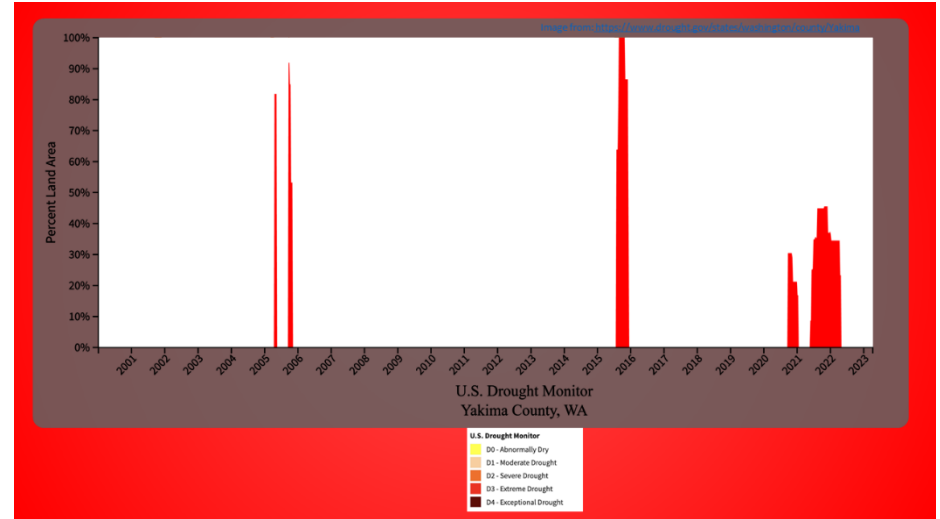
8



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What do you notice and wonder?

Notice (I noticed _____.)	Wonder (I am wondering _____.)

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How often are we in drought?

Drought is something that city planners, homeowners, and other community members consider when making decisions about our community.

- One job that considers how to conserve water is Roadside Landscape Architect.

**Environmental Science** PEI

Working on control of a large herb population along I-5 in Everett.

**TYPE OF WORK**  
I help figure out the best ways to take care of the roadside along state highways in Washington.

**Ray Wilford**  
Roadside Landscape Architect  
Washington State Department of Transportation

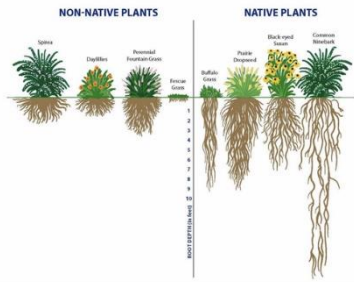
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## The Solution: Native Plants

What Do Native Plants Have to Do with Our Water?



Native plants are plants that are specific to an area and have adapted over time to thrive in the local climate.

How do long roots help the plant survive?

Image from: <https://toledolakeerie.clearchoicescleanwater.org/pledges/native-plants-and-pollinators/plant-1/>

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## Another Reason

After watching this video, what other benefits do native plants provide our community?



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## A Schoolyard Challenge

Native Plants are a tool in helping us conserve water. Your local Roadside Landscape Architect has invited you to help design a garden for (Insert School Name) that demonstrates the beauty and brilliance of native plants. Designs must meet given requirements in order to be considered for the project.



Image from <https://www.taptealnativeplants.com/>

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## A Community Challenge

Native Plants are a tool in helping us conserve water. Your local Roadside Landscape Architect has invited you to help design a garden for your community that demonstrates the beauty and brilliance of native plants. Designs must meet given requirements in order to be considered for the project.



Image from <https://www.taptealnativeplants.com/>

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The winning design must meet the following guidelines:

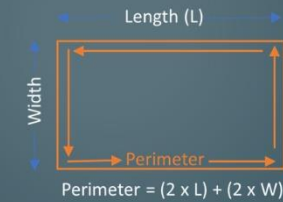
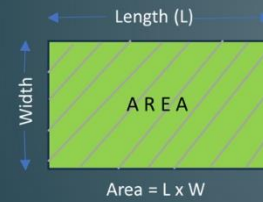
- ❑ Total Area of 450 square feet – garden beds and walking path combined  
*(Bonus Points: greatest area with smallest perimeter)*
- ❑ At least 2 garden beds that have straight sides



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The winning design must meet the following guidelines:

- ❑ Designers must calculate the area and perimeter for each garden bed and their walking path
- ❑ All measurements for garden beds and walking path should be displayed on the design



Calculations:

Area:  $L \times W$

Perimeter:  
 $(2 \times L) + (2 \times W)$

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The winning design must meet the following guidelines:

- ❑ Design must have a walking path with a 36-inch width that connects one end of the area to the other



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Do You Have Everything You Need?

- ✓ Graph Paper
- ✓ Rulers
- ✓ Formulas
- ✓ Other?

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### Helpful Information and Tools

**Area Model**

$32 \times 16$

30	2
300	20
180	12

$300 + 180 + 20 + 12 = 512$

**Place Value**

$32 \times 16$

$300 + 200 + 12 = 512$

**Partial Products**

$32 \times 16$

$32 \times 10 = 320$   
 $32 \times 6 = 192$   
 $320 + 192 = 512$

**Lattice Multiplication**

$32 \times 16$

$32 \times 16 = 512$

**Regrouping**

$32 \times 16$

```

  32
x 16
----
 192
+320
----
 512
  
```

**Breaking Apart**

$42 \times 35 = 1,470$

$40 \times 30 = 1,200$   
 $40 \times 5 = 200$   
 $2 \times 30 = 60$   
 $2 \times 5 = 10$   
 $1,200 + 200 + 60 + 10 = 1,470$

**Multiplication Strategies**

**Array**  
 $3 \times 4 = 12$

**Equal Groups**  
 $3 \times 4 = 12$

**Repeated Addition**  
 $4 + 4 + 4 = 12$

**Number Line**

Shapes	Figure	Formula
Rectangle		Area = $l \times b$
Square		Area = $s^2$
Triangle		Area = $\frac{1}{2} \times \text{Base} \times \text{height}$ Can also be found by Heron's formula & Coordinate geometry formula

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### Discussion Frames

- I think \_\_\_\_\_ because \_\_\_\_\_.
- I learned that \_\_\_\_\_.
- I agree because \_\_\_\_\_.
- I respectfully disagree because \_\_\_\_\_.
- Can you explain \_\_\_\_\_?
- I can see connections between \_\_\_\_\_ and \_\_\_\_\_ because \_\_\_\_\_.
- So what I think \_\_\_\_\_ is saying is that \_\_\_\_\_. Is that correct \_\_\_\_\_?

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### Design Guidelines Summary:

- ❑ Total Area of 450 sq feet (Bonus Points: most area with the smallest perimeter)
- ❑ At least 2 garden beds that have straight sides
- ❑ Design must have a walking path with a 36-inch width that connects one end of the area to the other
- ❑ Designers must calculate the area and perimeter for each garden bed and their walking path
- ❑ All measurements for garden beds and walking path should be displayed on the design

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### Resolutions

Students present their designs and the class shares connections and observations of strategies, successful or not, that were used in the solution.

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Self Reflection

What did you learn today?

Score yourself from 1–10 on each **success criteria**. Ten is you know it so well you could teach someone else.

Write what you learned in 1 – 3 sentences.

- I can apply different operations to help me solve a real-world problem.
- I can solve problems involving whole numbers with multiple digits.



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# 3-5 Math Performance Task: The Winner Is...Native Plants!

## Recording Sheet

Name: \_\_\_\_\_ Group: \_\_\_\_\_ Date: \_\_\_\_\_

Notice	Wonder

1. Materials List:

2. Final Design:



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Attach Self-Reflection Notes Below



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## Information Card

### Area Model

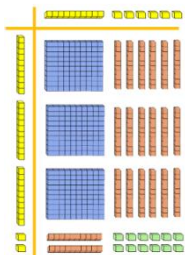
$32 \times 16 = ?$

	30	2
10	300	20
6	180	12

$300 + 180 + 20 + 12 =$   
**512**

### Place Value

$32 \times 16 = ?$



$300 + 200 + 12 =$  **512**

### Partial Products

$32 \times 16 = ?$

$$\begin{array}{r} 32 \\ \times 16 \\ \hline 192 \\ 320 \\ \hline 512 \end{array}$$

### Breaking Apart

$32 \times 16 = ?$

$$\begin{array}{r} 32 \times 16 = \\ / \quad \backslash \quad / \quad \backslash \\ 30 \quad 2 \quad 10 \quad 6 \\ 30 \times 10 = 300 \\ 30 \times 6 = 180 \\ 2 \times 6 = 12 \\ 2 \times 10 = +20 \\ \hline 512 \end{array}$$

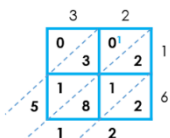
### Regrouping

$32 \times 16 = ?$

$$\begin{array}{r} 1 \\ 32 \\ \times 16 \\ \hline 192 \\ 320 \\ \hline 512 \end{array}$$

### Lattice Multiplication

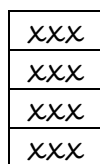
$32 \times 16 = ?$



$32 \times 16 =$  **512**

### Array

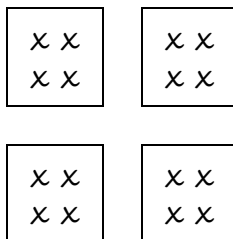
$4 \times 3 = ?$



$4 \times 3 =$  **12**

### Repeated Groups

$4 \times 3 = ?$



$4 \times 3 =$  **12**

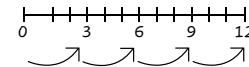
### Repeated Addition

$4 \times 3 = ?$

$3 + 3 + 3 + 3 =$  **12**

### Number Line

$4 \times 3 = ?$



- 1 hop of 3 = 3
- 2 hops of 3 = 6
- 3 hops of 3 = 9
- 4 hops of 3 = **12**

Sentence stems for discussion:

I saw \_\_\_\_\_, so I connected that to \_\_\_\_\_.

We know \_\_\_\_\_ because \_\_\_\_\_.

Since \_\_\_\_\_, then we can calculate \_\_\_\_\_.

I think \_\_\_\_\_ because \_\_\_\_\_.

I learned that \_\_\_\_\_.

I agree because \_\_\_\_\_.

I respectfully disagree because \_\_\_\_\_.

Can you explain \_\_\_\_\_?

I can see connections between \_\_\_\_\_ and \_\_\_\_\_ because \_\_\_\_\_.

So, what I think \_\_\_\_\_ is saying is that \_\_\_\_\_. Is that correct?



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## Additional Resources

### Career Connections

[Ray Willard's career profile card](#) can also be found on the PEI website at

<<<https://pacifieducationinstitute.org/wp-content/uploads/2020/04/Roadside-Landscape-Architect-Willard-Ray-Career-Profile.pdf>>>

Environmental Sector PEI PACIFIC EDUCATION INSTITUTE



Working on control of a spurge laurel population along I-5 in Everett


**TYPE OF WORK**  
I help figure out the best ways to take care of the roadsides along state highways in Washington.

Willard Ray  
**Roadside Landscape Architect**  
Washington State Department of Transportation

Roadside Landscape Architect

**TYPICAL DAY:** I spend about ¼ of my time around the office in Olympia either in meetings, working on the computer at my desk, or on the phone. The rest of the time I get to spend traveling around the state to meet with other stakeholders, conduct training, and work with the local crews to help them figure out the best ways to take care of their roadsides.

**CAREER PATHWAY:**  
I've always loved trees and natural systems, and spent most of my time outside as a child. For me, a career in Landscape Architecture has provided a way to combine a love of nature with creativity in design, and a deep desire to help reduce the impact of humans on our planet. There are about 100,000 acres of state highway roadside in Washington which serve as a front yard to anyone travelling down the road - Figuring out the best, most natural ways to manage and preserve native species in this area is one way to help our planet.



Local area management are evaluated and updated annually to guide roadside maintenance actions along the 7,000 miles of Washington State highway

**IMPORTANT SKILLS**  
Restoration ecology, horticulture/plant biology, soil science, herbicide chemistry, slope stabilization and erosion control, stormwater management

**EDUCATION**  
Bachelor's Degree

**SALARY RANGE**  
\$75,000-\$100,000

**TOOLS OF THE TRADE**  
Computer applications for writing, data analysis, developing presentations, research, and communication through social media and the Internet. iPads with GPS tracking and custom designed

"My job is never boring, there is so much variety in what I get to work on. I have spent the last 25 years in pretty much the same job, and it is very satisfying to look back and realize how much I've been able to improve the way we manage our roadsides." - Willard Ray

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