

Name: \_\_\_\_\_



## Unit 3 Project: Plan a Community-Friendly Park

Due date: November 22<sup>nd</sup>, 2018

In this project, your team has been commissioned to make an environment friendly park that is accessible to everyone. However, the area of your park is limited. The city council has also requested to have a playground installed for the younger crowd. The playground must include recreational equipment that has a slope. Whether this is a slide, a jungle gym, or possibly a new recreational equipment never seen before.

Safety and function are the utmost concern when designing the playground. Some questions to think about when designing the recreational equipment include: "What effects does a steep slope have on the user on the way down?" and "how will they get up?" These considerations make it necessary to have safety standards to which all park builders must be constructed.

### **START TO PLAN**

To start your unit project, you will need to figure out the area of the park and playground given by using trigonometric ratios and the Pythagorean theorem. Then you can begin to design your playground.

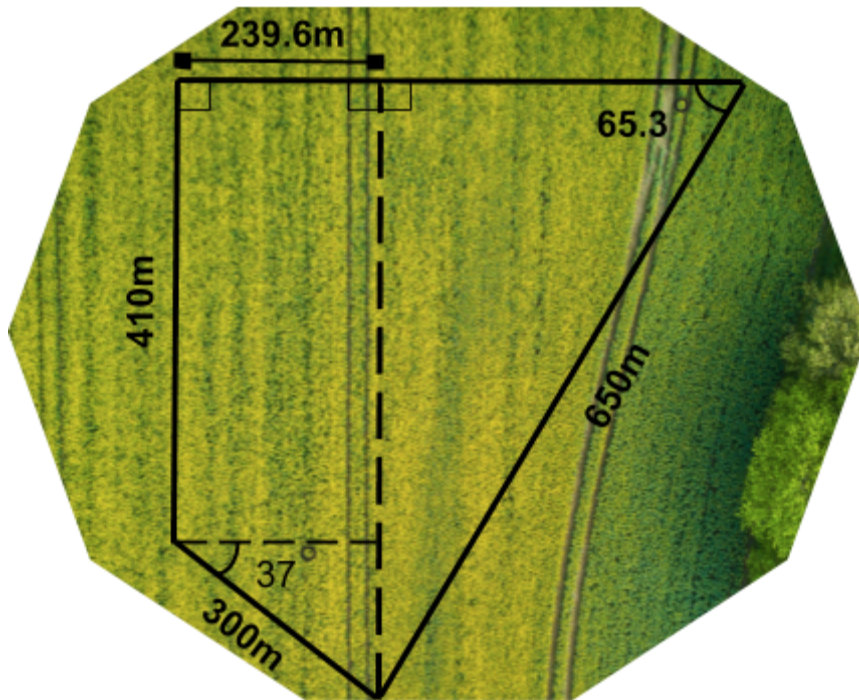
When it comes to designing your playground, you will only need to create two recreational equipment pieces (slide, jungle gym, monkey bars, etc.). You may also be creative, and try to create recreational equipment never seen before. Note that both equipment pieces **must** have a slant or slope on it. Once you have the basic layout of your recreational equipment, determine what an appropriate measurement of the equipment would be. Ask yourself: would I use centimeters? Inches? Meters? Yards? Explain your reasoning for the units you chose. Next find the slope of each. Make sure to label your diagrams with its measurements and slope. Lastly put it all together to demonstrate your final product.

### **PROJECT CHECKLIST:**

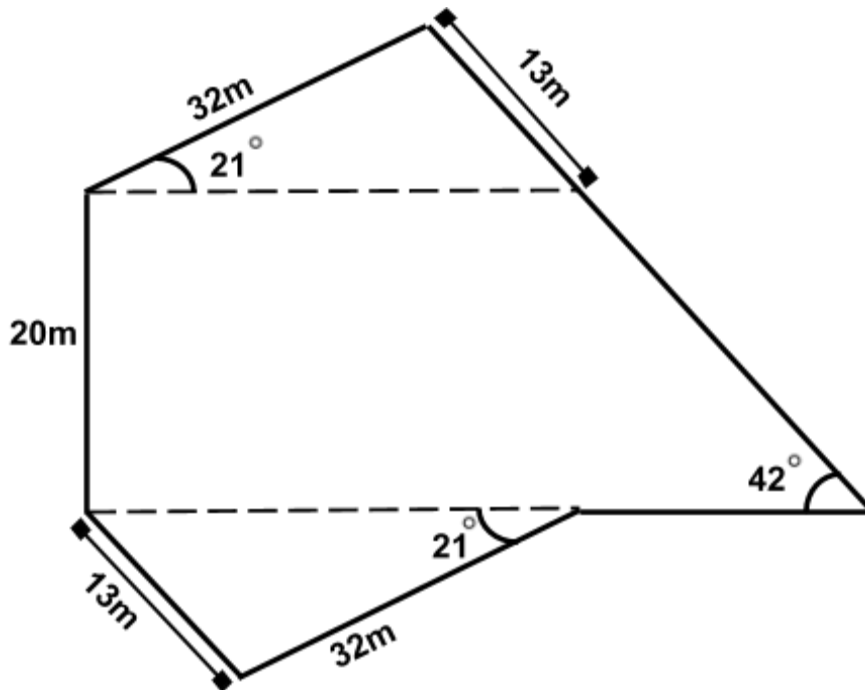
Your final project will include:

- 2-dimensional drawing of the park
  - Label the area
  - Label where the playground is located
- 2-dimensional drawing of your playground
  - Label the area
- 2-dimensional drawing of two recreational equipment pieces that will be added to your park
  - Label their measurements
  - Label the slope of each
- All your calculations for finding the area and slope

## PARK LAYOUT



## PLAYGROUND LAYOUT



**PROJECT ASSESSMENT RUBRIC: PLAN A COMMUNITY-FRIENDLY PARK**

	<i>Gold</i>	<i>Silver</i>	<i>Bronze</i>	<i>Not Yet</i>
<b>Conceptual Understandings</b>				
Explanation shows an understanding of trigonometry and calculating slope.	Shows thorough understanding; explanation and calculations are complete and thorough	Shows understanding; explanations and calculations have one or two errors	Shows a partial understanding; explanations and calculations have a few errors	Shows a limited understanding; explanation and calculations are omitted or inappropriate
<b>Procedural Understandings</b>				
<p>Accurately:</p> <ul style="list-style-type: none"> <li>• Sketches designs and plans that can be constructed</li> <li>• Calculates area using the trigonometric ratios and/or Pythagorean theorem</li> <li>• Calculate the slope values</li> <li>• Draws diagrams to scale</li> </ul>	<p>Accurate and precise; very few or no errors;</p> <p>For example:</p> <ul style="list-style-type: none"> <li>• Sketches complete, with dimensions</li> <li>• Calculations are complete and accurate</li> <li>• Equipment measurements are realistic</li> <li>• Diagrams are to scale and information is complete</li> <li>• Extra creativity added to the project</li> </ul>	<p>Generally accurate; few errors</p> <p>For example:</p> <ul style="list-style-type: none"> <li>• Sketches are adequate</li> <li>• Very few calculation errors</li> <li>• Equipment measurements are somewhat realistic</li> <li>• Diagrams are to scale, but missing a few information</li> <li>• Project is complete and meets requirements</li> </ul>	<p>Partially accurate; some errors</p> <p>For example:</p> <ul style="list-style-type: none"> <li>• Sketches are missing a few dimensions</li> <li>• Many calculation errors</li> <li>• One or two equipment measurements are realistic</li> <li>• Diagrams are not to scale and missing information</li> <li>• Project could use more work to ensure information is complete and accurate</li> </ul>	<p>Limited accuracy; major errors</p> <p>For example:</p> <ul style="list-style-type: none"> <li>• Sketches have no dimensions or incomplete</li> <li>• Calculations are missing</li> <li>• Equipment measurements are not realistic</li> <li>• Diagrams are not to scale</li> <li>• Project is incomplete</li> </ul>
<b>Problem Solving Skills</b>				
Uses appropriate strategies to solve problems successfully and explain the solutions	Uses effective and often innovative strategies to successfully solve problems and explain solutions	Uses appropriate strategies to solve most problems and explain solutions	Uses some appropriate strategies to successfully solve problems; may have difficulty explaining the solutions	Uses few effective strategies; does not solve problems

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Date: \_\_\_\_\_

To evaluate how well you did on your project, you will want to consider the following:

- Thoroughness of your research on measurements and materials
- Accuracy of your calculations and different types of drawings
- The clarity and visual appeal of your product drawing
- Creativity you brought to planning and completing your project; and
- Your completion of all the assigned tasks on time.

How do you feel you have done, given the criteria above?

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Were you able to complete all aspects of the project? If not, why not? Did you allot your time effectively?

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In what areas did you excel?

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What areas could you improve?

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If you had to do the project over again, what would you do differently?

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