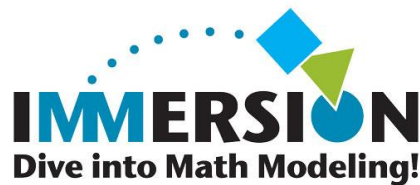


Names:

Building the Best Playground

Worksheet



Introduction: You and your team are going to redesign your playground! In a group of 3 – 5, do research about your playground to determine the popularity of pieces of playground equipment. Using this information, create a model to determine ways to improve your current playground. Once you have a model, you will share it with your class. Your model must consider the cost of renovations or building a new playground as well as the layout of your current playground. Your solution should include a blueprint of more efficient proposed playground, and a budget for your new playground, including ranking that helped you determine which pieces of playground equipment to invest in.

Define the Problem: Before you can start planning your playground, you need to be specific about what you're measuring so that you can justify your design.

1. What kind of information do you need to know to make a model? _____

2. What are some important quantities? Are they quantities which are required by the model, or quantities which are provided by the model? _____

3. How can you get this information? What kinds of data can you gather? _____

4. Does each quantity have only one value, or can it have a range of values? _____

5. What mathematical tools could you use in your model? _____



6. What makes a playground more efficient? _____

7. How can you determine and rank popularity of playground equipment? _____

Gather Information: Now that you know what information you're looking for and how you'll use it to help create your playground, you need to collect that information. Do research to gather the information you'll need in your model. Write it down.

Do the Math: Take the information you've gathered and use your mathematical tools to create a mathematical model of your playground. Justify your numerical values, estimations, and decisions. Show all your work.

Reflection: It's almost time to show everybody your playground model! During your presentation, you should focus on the process you used to create your model. Your finished works (blueprint and budget for the playground) are important, but reflect on these questions before your presentation to help you justify your model. Remember to explain why the decisions you made were reasonable!

1. Is your solution reasonable? Why or why not? _____

2. Is your solution useful for answering your question? _____

3. Why would you recommend your model to someone? _____

4. What mathematical tools did you use, and how did they help solve the problem? _____

5. What did you change in your model throughout the modeling process? _____

6. Are there situations where your solution wouldn't work or your model wouldn't apply? _____

7. How would you need to change your model to apply to more situations? _____

8. If you had more time, what else would you do? _____

9. Are there any mathematical tools or pieces of information that would have been helpful to have? _____

Presentation: When it's your turn, show your class your playground blueprint. If your teacher has a rubric, check to see how to make your presentation better. Don't forget to explain why you did what you did!