Subject area/course: Mathematics/Algebra 1
Grade level/band: 8-9
Task source: Providence Schools; Authors: Philip Marshal and Sorng Sun

Theme Park

STUDENT INSTRUCTIONS

A. Task context:
Congratulations! You have been hired by billionaire rodeo clown Poseidon Cunningham to submit your design for his theme park. The park will be located on a large rectangular plot of land near Providence, Rhode Island. Each of the attractions/rides needs to have a name related to the theme of your park.

B. Final product:
Follow the steps below. Good luck!

Step 1: Research Different Types of Theme Parks
Using the Internet or other sources (e.g., books, magazines, encyclopedias), write a short report about what is necessary to run a theme park, and how much it costs to build one.

Step 2: Design your Park
On graph paper, create a blueprint of your theme park.
*   Design this in color… Grab my attention…Make your design a winner!!
*   Start with a sketch of what you want. Then translate your design onto graph paper.
*   Write an explanation of how your park design is the best one for making stacks of cash.

Step 3: Name Your Coordinates
In your blueprint, indicate the coordinate of each of your entrances to the site. Also include the coordinates of the entrance to each attraction inside your park.

Step 4: Calculate the Midpoint
As a convenience, Mr. Cunningham would like to have benches placed halfway between adjacent attractions. Show your work below on how this task can be accomplished.

Step 5: Convert to Actual Dimensions
Your park design has been drawn as a blueprint, but to build it, you will need actual dimensions in terms of the unit dimensions. A large rectangular plot of land has been selected for development, and the city has given approval for construction. Knowing that the actual dimensions of the land is 840m x 660m, determine the scale of your coordinate system.

Step 6: Calculating the Distance
A team of surveyors is trying to determine how to use the land to construct your design. You have been asked to determine how far away certain attractions are from one another. This will provide them with the information they need to expand the park from your scaled blueprint to actual dimensions. Create a table showing the distance between the entrances of all of your attractions. Be sure to include units in your answers.

Step 7: Write Linear Equations
How much would you charge for parking and admission tickets? Remember that your goal is to make a profit, so you should have prices that will encourage people to go to your park. Create three different admission passes and write an equation for each pass. Then decide which one would be best for different park visitors (e.g., a family visiting for a week, a student going to a day, etc.). Explain why the option you choose is best.

ADDITIONAL INFORMATION

C. Knowledge and skills you will need to demonstrate on this task:
- You will demonstrate your understanding of coordinate pairs and apply your knowledge in context.
- You will be able calculate midpoint and distance with accuracy.
- You will be able to recognize the correct formula(s) to use at each step of the project.
- You will be able to convert to real dimensions.
- You will be able to write a linear equation based on admission passes.

D. Materials needed:
- Colored pencils
- Graph paper
- Rulers
- Pencils
- Calculators
- Computers

E. Time requirements:
This task will take approximately 2 weeks to complete. Your teacher will provide additional details regarding deadlines and due dates.

F. Scoring:
Your work will be scored using the Theme Park Rubric. You should make sure you are familiar with the language that describes the expectations for proficient performance.