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My Roller Coaster Project Packet

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

**Roller Coaster Project**

In science we have been learning about force, motion and energy. Here is your next project. You will design and build a model of a roller coaster. You may use craft sticks, marbles, wood, rulers, clay, plastic or foam tubing, cardboard, foam tubes and other materials to build your ride. Lego and Lego-like products are not permitted. You may not use pre-made roller coasters. The model can be built in a shoe box or on a flat piece of cardboard or wood. It should be able to move, or allow a ‘rider’ (marble or small ball for example) to move. Students will plan out their project, describe the materials they will use, and draw a model. They will also need to explain how their project would work and what forces cause their roller coaster to work.

Please complete the booklet and follow all instructions carefully. Write an expository text to describe how it works and what forces impact the roller coaster. Use the rubric attached to be sure you are completing all parts of the project correctly. To see examples of projects from other students in our district please visit this website: <http://www.emsisd.com/Page/2038>.

Projects and packets are due Wednesday, January 16th. We will be presenting these projects to the class on Thursday and Friday of that week. Presentations will be a part of the grade.

For any questions please let me know.

Mrs. Rials

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**My Plan**

Materials I will use: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Procedure to create my project:

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How my project will work:

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**Breadboard**

An important part of planning is to develop your project and decide what it will look like by creating a breadboard. You need to show that your project will work.

To do this, you must create a rough draft of what your roller coaster will look like. Since this is a rough draft, the materials, colors, and look of the roller coaster may be different from the final project. You just need to show how the idea you have will work.

Gather your materials and in the box below, draw a picture of what your roller coaster will look like. Label the parts and color it.

**Rubric**

|  |  |  |  |
| --- | --- | --- | --- |
| **Task** | **Exceptional** | **Acceptable** | **Unacceptable** |
| Project Outline Packet | Specific record of materials, procedures, ideas, and clearly exhibits *thinking* and *doing*  *(3 points)* | Description of some procedures and thinking  (2 points) | Insufficient description of what was done and /or thought  (1 point) |
| Presentation | Project was explained and presented to the class *on time* and student was *knowledgeable* of the forces involved  (3 points) | Project was explained and presented with moderate confidence and understanding  (2 points) | Insufficient description of what was done and /or thought to explain  (1 point) |
| Gravity | Gravity was *clearly* demonstrated and explained  (3 points) | Gravity was somewhat demonstrated and explained  (2 points) | Insufficient description and demonstration of gravity  (1 point) |
| Friction | Friction was *clearly* demonstrated and explained  (3 points) | Friction was somewhat demonstrated and explained  (2 points) | Insufficient description and demonstration of friction  (1 point) |
| Expository | Writing stayed on topic, flowed easily and included description of how roller coaster works and what forces are involved  (3 points) | Writing mostly on topic and somewhat addressed how the project works and forces involved  (2 points) | Insufficient descriptions and did not flow or stay on topic  (1 point) |

**Grading scale:**

15 points=100 11 points=74 7 points=48

14 points=94 10 points=68 6 points=41

13 points=88 9 points=61 5 points=34

12 points=81 8 points=54 4 points=28