**Partner #1\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Partner #2\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**8th Grade Math:**

**Oreo Cookie Packaging Project**



Nabisco has decided to sell a smaller package of Oreo cookies containing only 8 cookies. You are a team of packaging engineers and your job is to design the new package. Nabisco will be reviewing your proposals and will choose one group’s design to use.

**You will be…**

* Conducting some research on your package.
* Developing a model of your package.
* Creating a proposal about why your package should be the new “Oreo Cookie” package. You will be creating a presentation in googledocs to make your proposal.

Research Notes:

1. What is the volume of a single Oreo cookie?
2. Sketch your package and label the dimensions. Your sketch does not have to be drawn to scale.
3. How much space is inside of your package?
4. Does the volume of 8 Oreo cookies equal the volume of your package? If not, why?
5. What is the surface area of your package?
6. Sketch a “net” for your package. (Be sure to include some overlap for places where the package will need to be glued together.)
7. How much cardboard will you need for your package? You must consider that the cardboard will be glued and not taped. Therefore, you need to make sure that you are accounting for overlap at the joints.
8. If cardboard costs $0.002 per square centimeter, how much will your packaging cost?
9. Retail Price = cost + profit.

If each Oreo cookie costs $0.03 to make and the company wants to make a 60% profit on the cookies, how much should the cookies and package sell for?

(Hint: To figure out the cost use the formula… “cost to produce = 40% of retail price”)

1. Why should Nabisco choose your package?

Instructions for *creating* your googledoc presentation:

1. Open “googledocs” using either “firefox” or “google chrome” for your browser.
2. Choose “Create”, then “presentation”.
3. Create a professional looking presenation. Your presentation should include the following…
	1. A title page.
	2. A slide that addresses each of the “research” questions.
		1. When sketching your package and the net for your package, you may want to insert a shape. To do this, choose “insert”, “shape”, “shapes”. Then choose the shape or 3D figure that you are looking for.
		2. To label your sketches with the dimensions, choose the “T” on the tool bar. This will allow you to insert a tool bar.
		3. Choose the red plus sign each time you want to add a new slide to your presentation.

Instructions for *sharing* your googledoc presentation:

1. In your document, click “File” in the top left corner and select “Share”
2. Type your teacher’s name at the bottom of the screen
3. Click “Save and Share”

**For teacher use only!**

Grading Rubric:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| CATEGORY  | 4  | 3  | 2  | 1  |
| Package  | Great care taken in construction process so that the structure is neat, attractive and follows plans accurately.  | Construction was careful and accurate for the most part, but 1-2 details could have been refined for a more attractive product.  | Construction accurately followed the plans, but 3-4 details could have been refined for a more attractive product.  | Construction appears careless or haphazard. Many details need refinement for a strong or attractive product.  |
| Calculations | ALL calculations and units for volumes, surface areas, and cost/pricing are accurate.  | Calculations for volumes, surface areas, and cost/pricing may include 1 minor error. (Example: An answer may be missing units.) | Calculations for volumes, surface areas, and cost/pricing include 2 or more errors.  | Calculations for volumes, surface areas, and cost/pricing include many errors. |
| Presentation (googledoc)  | Presentation is very well organized and professional. Drawings are labeled and neatly done. All research questions are thoroughly addressed.  | Presentation is not real organized or professional, but drawings are labeled and neatly done. All research questions are thoroughly addressed.  | Presentation is sloppy or unorganized. Drawings are NOT labeled and/or poorly done OR some research questions are not addressed.  | Presentation is sloppy or unorganized. Drawings are NOT labeled and/or poorly done AND some research questions are not addressed.  |

**Checklist and feedback.**

\_\_\_\_1. What is the volume of a single Oreo cookie?

\_\_\_\_2. Sketch your package and label the dimensions.

\_\_\_\_3. How much space is inside of your package?

\_\_\_\_4. Does the volume of 8 Oreo cookies equal the volume of your package? If not, why?

\_\_\_\_5. What is the surface area of your package?

\_\_\_\_6. Sketch a “net” for your package. (Be sure to include some overlap for places where the package will n need to be glued together.)

\_\_\_\_7. How much cardboard will you need for your package? You must consider that the cardboard will be glued and not taped. Therefore, you need to make sure that you are accounting for overlap at the joints.

\_\_\_\_8. If cardboard costs $0.002 per square centimeter, how much will your packaging cost?

\_\_\_\_9. Retail Price = cost + profit.

If each Oreo cookie costs $0.03 to make and the company wants to make a 60% profit on the cookies, how much should the cookies and package sell for?

\_\_\_\_10. Why should Nabisco choose your package?

**Your Score…**

 \_\_\_\_\_\_\_ + \_\_\_\_\_\_\_ + \_\_\_\_\_\_\_\_\_ = \_\_\_\_\_\_\_\_\_/12 x 2 = \_\_\_\_\_\_\_\_\_\_/24