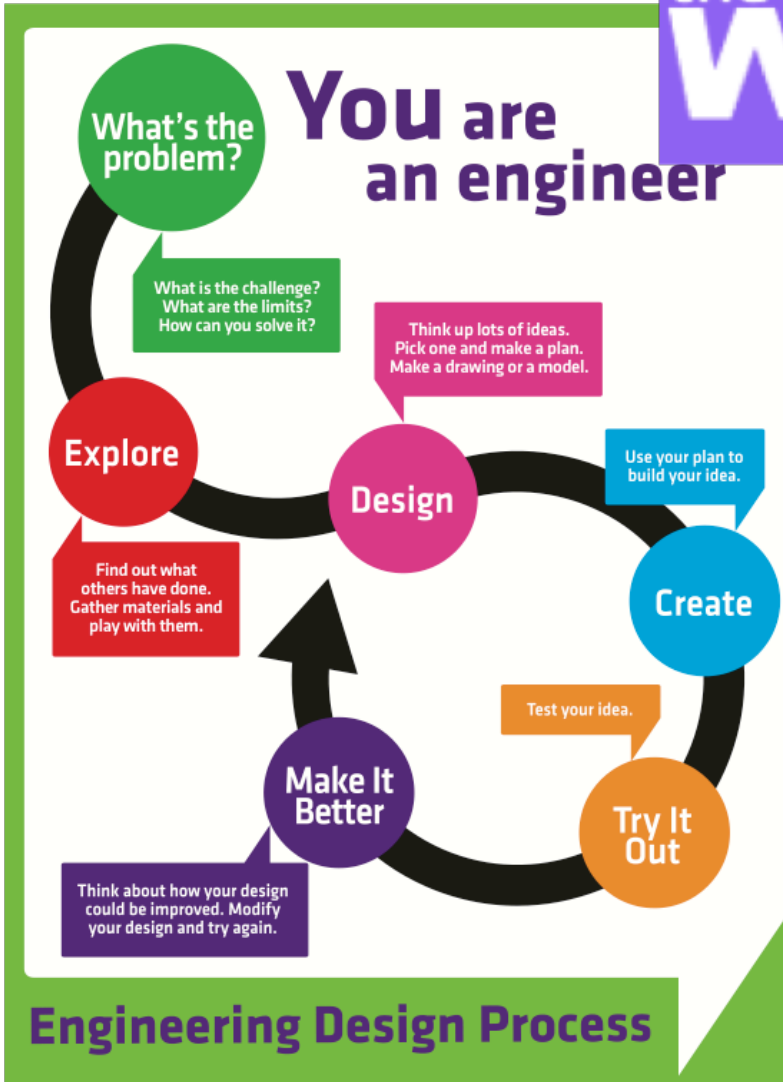


Cereal Box Project



Name: _____

Date: _____ Grade: _____ Section: _____



Cereal Box Project

DESIGN CHALLENGE

> Design and build a cereal box that will appeal to the wants and needs of 6th -8th graders

Criteria	Constraints
<p><i>A self-standing, six sided box with...</i></p> <p>Front Panel</p> <ul style="list-style-type: none"> Company Logo Name of cereal Graphic and/or photo <p>Back Panel</p> <ul style="list-style-type: none"> Additional information Game or puzzle <p>Left Side Panel</p> <ul style="list-style-type: none"> Company Logo Company name, address and website Amount of weight Nutritional Facts Names and class section 	<p><i>Your prototype must stay within these limits...</i></p> <p><i>The information on the box cannot...</i></p> <ul style="list-style-type: none"> Misrepresent the product or contain any inappropriate graphics, words or terms. Use a name that already exists or characters from other cereal brands. You may use a cartoon, movie, sports or television personality. Use black and white graphics. Have images, fonts, labels etc., from the Internet without citing the source.
Approved Materials	Key Points
<ul style="list-style-type: none"> Hot glue Paper Other materials: (teacher approval needed) <p>*NOTE: Materials will NOT be given out until a drawing is submitted with different views and an explanation of the design choice. Points will be lost if replacement parts are needed.</p>	<ul style="list-style-type: none"> Red makes people feel like they have the power to make choices Orange stimulates the appetite and is one of the most popular cereal box colors Blue calms and relaxes people Yellow makes people feel cheerful and energized
	Key Terms
	<ul style="list-style-type: none"> Product- an object or a service provided to customers. Target market- a specific group of people that a company makes its product for. Consumer – A person who buys a good or service. Brand Name – The name under which a company sells its products. Promotion-advertising the product or making the customer aware of the product or service. Pricing- determining how much something will cost

Cereal Box Competition

The target market group will evaluate each box on the following 5 items:

- 1. Logo** (Is the logo eye-catching & memorable? Does it stand out from other logos?)
- 2. Name of cereal** (Does the name create interest? Is it easy to remember?)
- 3. Ingredients** (Will the target market like the ingredients?)
- 4. Colors & graphics** (Do the colors go together and have the effect you want? [See Key Points above])
- 5. Shape and design of box** (Does it attract attention? Is it unique? Does it look “cool”?)

IDENTIFY THE PROBLEM

In your own words... state what you've been asked to do.

I have been asked to _____ that will

Look at the rubric for this project on the last page and then answer the next two questions.

1. What do you think will be the most challenging part? _____

2. What's ONE strategy you can try to overcome it? _____

RESEARCH THE PROBLEM

Conduct interviews with your target market (6th-8th graders) and record their responses in the table below. Put a check mark under the items they prefer and add them up when you're done.

Student	Sugar coating	Color	Unique shapes	Marsh-mallows	Fruit	Nuts	Reduced calories	Extra nutrition
1								
2								
3								
4								
5								
6								
7								
8								
9								
10								
11								
12								
13								
14								
15								
16								
17								
18								
TOTALS								
TOP 3								

DEVELOP POSSIBLE SOLUTIONS

In the boxes below, draw six (6) **different isometric versions** (see example) of what your cereal box might look like. It's very important to include the top choices from the target market and show them on the outside of each box in very dramatic ways, using colors and font shapes to attract attention like the examples below.

The food packaging information should tell the user:

- ▲ the name and a description of the food;
- ▲ the name and address of the company that made it;
- ▲ the amount of weight of the contents;
- ▲ the ingredients that have been used to make it;
- ▲ nutritional information, such as the calories it contains, if it is high in fibre and so on;
- ▲ how the food should be prepared or cooked;
- ▲ how long it can be kept and in what conditions;



Energy



Prototype #1	Prototype #2
Prototype #3	Prototype #4
Prototype #5	Prototype #6

Figure out the cost of manufacturing your cereal and your profit by filling in the price points below

CEREAL	COST	COST TO MAKE
▪ 15 oz	\$0.70	
▪ Sugar coating	\$0.27	
▪ Coloring (raspberry red, lemon yellow, etc)	Each color \$0.16	
▪ Unique or unusual shapes	\$0.14	
▪ Marshmallows	\$0.23	
▪ Fruit (raisins, blueberries, etc.)	Each type of fruit \$0.26	
▪ Nuts	\$0.25	
▪ Reduced fat and calories	\$0.27	
▪ Extra nutrition	\$0.32	
BOX	COST	COST TO MAKE
▪ 15 oz. standard box w/4 colors	\$0.32	
▪ Larger than 15 oz. or irregular shape (octagon)	\$0.48	
▪ Foil inner wrapper	\$0.13	
▪ Wax paper wrapper	\$0.32	
▪ Prize inside	\$0.42	
▪ Celebrity/Sports person on package	\$0.50	
▪ Fictional character on package	\$0.25	
TOTAL PRODUCTION COST (Add all of the above)		
PROFIT FOR YOUR COMPANY (Multiply production cost by 13% (0.13))		
COST TO RETAILERS (Add production cost plus profit)		
COST TO CONSUMERS (Add cost to retailers plus profit to company)		



CHOOSING & MARKETING A SOLUTION

Identify which prototype you've chosen to make and explain why. *If you really can't tell me why this prototype is insanely great, you shouldn't be building it.*

A paragraph has a beginning a middle and an end.

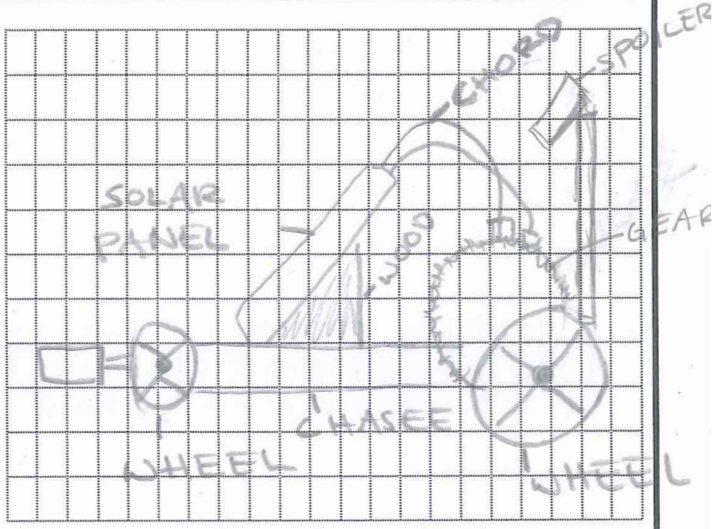
The **beginning**, or the topic sentence, states what the paragraph is about.

The **middle** develops the idea in detail by giving specific support & details for it (usually 3 - 5).

The **end** (conclusion) restates the main idea in the topic sentence.

BUILD A PROTOTYPE ENGINEERING LOGS

EXAMPLE

On the lines below, describe what you did. Mention any difficulties you had or any design changes you made.	Make a labeled sketch that shows what you did.
<p>LOG #5: Date: <u>5/3/12</u></p> <p>Today I finished attaching the motor. I had a hard time w/ the gears because the the gear with the gray motor is so big so I changed it to a little smaller instead. I also used a velcro instead of gluing the motor on the car. Today my car is fi-</p>	
<input type="checkbox"/> YES I described the drawing in a clear and understandable way <input type="checkbox"/> YES I used key terms and information to accurately describe my progress and drawing. I have enough information. <input type="checkbox"/> YES My description is neatly written and legible.	<input type="checkbox"/> YES My drawing is large enough to show all the details. <input type="checkbox"/> YES My line quality is sharp and precise (no smudges) <input type="checkbox"/> YES My labels are outside the drawing and accurate <input type="checkbox"/> YES My drawing uses shading for highlights

Describe what you did today. Mention any problems you had, design changes or questions.	Make a labeled sketch that shows what you did.
<p>LOG #1 Date: _____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p>	<div style="height: 250px; border: 1px solid black;"></div>
<p>YES I used complete sentences to describe my progress</p> <p>YES My description is neatly written and legible</p> <p>YES I used key terms when possible</p>	<p>YES My drawing is large enough and centered in the space</p> <p>YES My line quality is sharp and precise (no smudges)</p> <p>YES Labels and dimensions are OUTSIDE the drawing</p>

Describe what you did today. Mention any problems you had, design changes or questions.	Make a labeled sketch that shows what you did.
LOG #2 Date: _____ 	
YES I used complete sentences to describe my progress YES My description is neatly written and legible YES I used key terms when possible	YES My drawing is large enough and centered in the space YES My line quality is sharp and precise (no smudges) YES Labels and dimensions are OUTSIDE the drawing

Describe what you did today. Mention any problems you had, design changes or questions.	Make a labeled sketch that shows what you did.
LOG #3 Date: _____ 	
YES I used complete sentences to describe my progress YES My description is neatly written and legible YES I used key terms when possible	YES My drawing is large enough and centered in the space YES My line quality is sharp and precise (no smudges) YES Labels and dimensions are OUTSIDE the drawing

Describe what you did today. Mention any problems you had, design changes or questions.	Make a labeled sketch that shows what you did.
LOG #4 Date: _____ 	
YES I used complete sentences to describe my progress YES My description is neatly written and legible YES I used key terms when possible	YES My drawing is large enough and centered in the space YES My line quality is sharp and precise (no smudges) YES Labels and dimensions are OUTSIDE the drawing

Describe what you did today. Mention any problems you had, design changes or questions.	Make a labeled sketch that shows what you did.
LOG #5 Date: _____ 	
YES I used complete sentences to describe my progress YES My description is neatly written and legible YES I used key terms when possible	YES My drawing is large enough and centered in the space YES My line quality is sharp and precise (no smudges) YES Labels and dimensions are OUTSIDE the drawing

COMPLETE DECISION

My prototype's performance was: (Check one)

___ **Exceptional:** it worked every time it was tested and needed no repairs

Some reasons for this are:

1. _____
2. _____
3. _____

___ **Very good:** it worked most of the time it was tested and didn't need any (or many) repairs

Some reasons for this are:

1. _____
2. _____
3. _____

___ **Good:** it worked some of the time it was tested and needed repairs

Some reasons for this are:

1. _____
2. _____
3. _____

___ **Not good:** it didn't really work

Some reasons for this are:

1. _____
2. _____
3. _____

Things that I redesigned (changed)

1. _____
2. _____
3. _____

What the changes did

1. _____
2. _____
3. _____

Things I'd do differently next time

1. _____
2. _____
3. _____

What these might do

1. _____
2. _____
3. _____

OPEN RESPONSE: MAKING THE SNEAKER

A new type of sneaker is being designed for athletes who play on hard surfaces.

- List **three** divisions of the manufacturing organization involved in the design, manufacture, and promotion of this new style of sneaker.
- Describe the general role of **each** division you identified in part (a).

This image shows a single sheet of white paper with horizontal blue or grey ruling lines, typical of notebook paper. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.

Cereal Box Project

Name: _____

Date: _____ Grade: _____ Section: _____

GOAL #1: I CAN apply the Engineering Design process to **imagine, plan** and **build** solutions to situations involving bioengineering.

This is how I'll do it...

a. I will make a collection of isometric concept drawings that shows different ways to solve a problem. [p.4]

0	1	2	3	4
---	---	---	---	---

b. I will have an explanation for my "best idea" with specific reasons and supporting details. [p.4]

0	1	2	3	4
---	---	---	---	---

c. I will make three-view orthographic drawings of my "best idea" with measurements & labels that others can follow. [p.6]

0	1	2	3	4
---	---	---	---	---

d. I will complete open response question(s) about manufacturing technology & engineering [p.12]

0	1	2	3	4
---	---	---	---	---

e. I will keep track of my progress and design changes by completing engineering logs during the project.

Engineering Log #1 [p.8]

0	1	2	3	4
---	---	---	---	---

Engineering Log #2 [p.9]

0	1	2	3	4
---	---	---	---	---

Engineering Log #3 [p.9]

0	1	2	3	4
---	---	---	---	---

Engineering Log #4 [p.10]

0	1	2	3	4
---	---	---	---	---

Engineering Log #5 [p.10]

0	1	2	3	4
---	---	---	---	---

f. I will collect and display data about my prototype and use it to evaluate how well it worked. [p.11]

0	1	2	3	4
---	---	---	---	---

Final Score

GOAL#2: I CAN select and judge which tools, materials and methods are the best and safest to use when making a prototype.

This is how I'll do it...

a. I will wear safety goggles and follow all safety procedures in the workshop **without** reminders.

0	1	2	3	4
---	---	---	---	---

b. I'll keep track of my materials and not need any replacement parts.

0	1	2	3	4
---	---	---	---	---

c. I will clean up my work space and put tools and materials back where they belong.

0	1	2	3	4
---	---	---	---	---

d. I will pass the tool-use license test(s) for this project.

0	1	2	3	4
---	---	---	---	---

Final Score

GOAL#3: I CAN explain and defend my reasons for the tools and materials I use when building prototypes.

This is how I'll do it...

a. I will follow my production drawings and building guide to make cardboard furniture fit for an "average" middle school student.

0	1	2	3	4
---	---	---	---	---

b. I will build a prototype that looks like a finished product without any loose parts, damaged or rough surfaces, dents, gouges or globs of glue.

0	1	2	3	4
---	---	---	---	---

c. I will build, test and demonstrate a prototype that is sturdy, holds together and doesn't need repairs between multiple uses.

0	1	2	3	4
---	---	---	---	---

Final Score