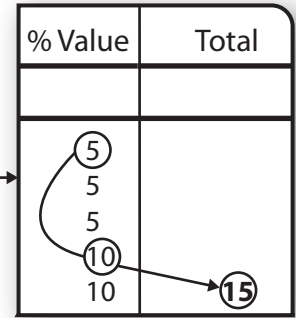


Choose and complete the appropriate number of options in each category in order to add up to the required total.

Example: $5 + 10 = 15$



Option	Project Component	% Value	Total
EXPLORE			
1a	Review a Ride	5	
1b	Report on Types of Rides	5	
1c	History of Roller Coasters	10	
1d	Compare Theme Parks	10	15
DESIGN			
2a	Design a Theme Park Logo	10	
2b	Design a Promotional Poster for a new ride	20	
2c	Design your own Roller Coaster (CAD)	20	
2d	Explore and Develop a New Type of Amusement Ride	30	30
CREATE			
3a	Design and Build a Roller Coaster Car	30	
3b	Paint Roller Coaster Body	5	
3c	Create Graphics for Roller Coaster Car	5	
3d	Build a Vacuum Formed Body for Roller Coaster Car	10	40
SHARE			
4a	Document your project in a portfolio presentation	15	
4b	Prepare a multi-media presentation of your project	15	15
			100

1a Review a Ride

EXPECTATIONS	<input checked="" type="checkbox"/>
1.1 Research two different roller coasters	<input type="checkbox"/>
1.2 Compare specifications example - height, speed, track length, features, ride time	<input type="checkbox"/>
1.3 Write a review of your favourite ride including your research and your personal opinion	<input type="checkbox"/>

1b Types of Rides

EXPECTATIONS	<input checked="" type="checkbox"/>
1.4 Research four different types of amusement rides (coaster, drop, spinner, swing)	<input type="checkbox"/>
1.5 Compare the operation of each ride (height, speed, features, ride time, scare factor)	<input type="checkbox"/>
1.6 Write a review of your favourite ride including your research and your personal opinion	<input type="checkbox"/>

1c History of Roller Coasters

EXPECTATIONS	<input checked="" type="checkbox"/>
1.7 Research the history of Roller Coasters (who, what, when, where, why and how)	<input type="checkbox"/>
1.8 Compare early roller coaster designs to modern roller coasters (features, structure)	<input type="checkbox"/>
1.9 Write a news report outlining the evolution of roller coaster design	<input type="checkbox"/>

1d Compare Theme Parks

EXPECTATIONS	<input checked="" type="checkbox"/>
1.10 Research two different theme parks (consider international parks as well)	<input type="checkbox"/>
1.11 Compare each theme park with respect to (attractions, cost, location, history)	<input type="checkbox"/>
1.12 Write a news report advising consumers about why they should attend each park	<input type="checkbox"/>

2a Theme Park Logo

EXPECTATIONS	<input checked="" type="checkbox"/>
2.1 Research existing theme park logos (print out 3 examples)	<input type="checkbox"/>
2.2 Explore logo concepts by drawing a minimum of 1 page of rough thumbnail sketches	<input type="checkbox"/>
2.3 Prepare a final 1 page copy of your logo design (photoshop/illustrator)	<input type="checkbox"/>

2b Promotional Poster

EXPECTATIONS	<input checked="" type="checkbox"/>
2.4 Research existing promotional posters (print out 3 examples)	<input type="checkbox"/>
2.5 Prepare a 1 page rough sketch of your poster concept (include explanatory notes)	<input type="checkbox"/>
2.6 Prepare a final 1 page copy of your poster design (can be drawn on computer)	<input type="checkbox"/>

2c Design a Roller Coaster

EXPECTATIONS	<input checked="" type="checkbox"/>
2.7 Research roller coaster track designs and components	<input type="checkbox"/>
2.8 Model your own roller coaster design using CAD	<input type="checkbox"/>
2.9 Model your roller coaster environment and export an AVI simulation and 3 JPEGs	<input type="checkbox"/>



2d Design a New Ride Concept

EXPECTATIONS	<input checked="" type="checkbox"/>
2.10 Research different types of rides other than Roller Coasters	<input type="checkbox"/>
2.11 Explore 3 new concepts for rides through thumbnail sketches (minimum 3 pages)	<input type="checkbox"/>
2.12 Model your final design in CAD, or build a scale model of your design	<input type="checkbox"/>

3a Roller Coaster Car

EXPECTATIONS	<input checked="" type="checkbox"/>
3.1 Research roller coaster car designs, and types of restraint systems	<input type="checkbox"/>
3.2 Create design concepts by drawing a minimum of 1 page of rough thumbnail sketches	<input type="checkbox"/>
3.3 Prepare orthographic drawings of your car design	<input type="checkbox"/>
3.4 Build your Roller Coaster Car with materials provided	<input type="checkbox"/>

3b Paint

EXPECTATIONS	<input checked="" type="checkbox"/>
3.5 Apply final paint to your Roller Coaster Car	<input type="checkbox"/>

3c Graphics

EXPECTATIONS	<input checked="" type="checkbox"/>
3.6 Create a logo and/or graphics to apply to your Roller Coaster Car	<input type="checkbox"/>
3.7 Apply logo or graphics using paint or computer cut decals	<input type="checkbox"/>

3d Vacuum Forming

EXPECTATIONS	<input checked="" type="checkbox"/>
3.8 Explore existing roller coaster car designs	<input type="checkbox"/>
3.9 Explore design concepts through rough sketches	<input type="checkbox"/>
3.10 Prepare orthographic drawings of your car body design	<input type="checkbox"/>
3.11 Create mould of roller coaster car design and vacuum form the body	<input type="checkbox"/>

4a PORTFOLIO

EXPECTATIONS	<input checked="" type="checkbox"/>
* prepare a final Portfolio that includes the following:	
4.1 Report Documents	<input type="checkbox"/>
4.2 Graphic Communications (Rough sketches - Final Presentation Drawings)	<input type="checkbox"/>
4.3 Photographic documentation of the Design Process	<input type="checkbox"/>

4b MULTI-MEDIA




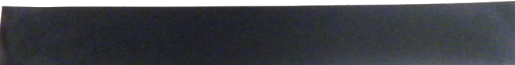
EXPECTATIONS	<input checked="" type="checkbox"/>
* prepare a final Multi-media Presentation that includes the following:	
4.4 Report Documents	<input type="checkbox"/>
4.5 Graphic Communications (Rough sketches - Final Presentation Drawings - 3d models)	<input type="checkbox"/>
4.6 Photographic and/or Video documentation of the Design Process	<input type="checkbox"/>

PROJECT COASTER / COMPETITION RULES

1. Each designer will start with an expense budget of \$250 000.
2. Materials cannot be purchased until concept sketches have been completed.
3. Cash bonuses will be added to your budget with the completion of project requirements.
Each mark out of 85 is worth an additional \$1000.
4. Each passenger weighs 1.2g. The minimum number of passengers is 1.
5. The roller coaster car with block weighs 66.5g. You should not exceed a total of 92g.
6. Use your block carefully. A replacement costs \$25 000. Your first one is free.
7. Each fatality during final testing will result in a \$10 000 lawsuit.
8. Each test run conducted before final testing will cost \$10 000.
9. Passengers must not be in contact with other passengers during ride. A \$1000 fine will be assessed for any passengers that are touching when the ride is over.
10. The block can be drilled into, but must be able to attach to roller coaster car.
11. To avoid injury, passengers should keep all arms inside the car at all times.
12. Passengers must be visible and must be removed easily from the roller coaster car.
13. No glue is to be used in the construction of your restraint system.
14. Each designer receives a rider bonus of \$20 000 for each passenger their car can carry.
15. A \$20, 000 style bonus will be awarded to the designer with the best looking design.
16. Expense sheets must be completed and signed by a park supervisor when purchasing materials and conducting test runs.
17. Prizes will be awarded to the top 5 designers who have submitted all of their paper work, and have the highest remaining budget.
18. Paper and plastic can be used to decorate your roller coaster design, but cannot be used as part of the restraint system.
19. Passengers must not be in direct contact with the sticky side of tape.

Initial Budget		\$250 000
+ Project Bonuses		
- Lawsuits & Fines		
- Total Expenses		
= \$		

PROJECT COASTER / MATERIAL LIST

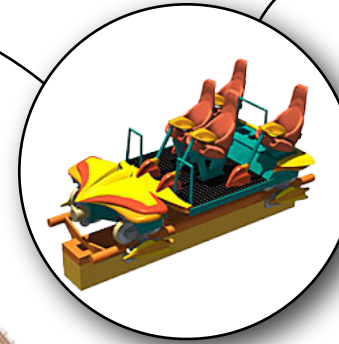
1. 
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	MATERIAL	WEIGHT (g)	COST (\$)
1	PIPE CLEANER	1.0g	\$20,000
2	STRING (12" piece)	0.2g	\$1000
3	SKEWER	2.0g	\$5000
4	STRAW	0.4g	\$8000
5	STIR STICK	0.9g	\$1000
6	WIRE (6" piece)	0.6g	\$10,000
7	TAPE (6" piece)	0.7g	\$50,000
8	POPSICLE STICK	1.3g	\$5000
9	TOOTH PICK	0.2g	\$2000
10	BOBBY PIN	0.6g	\$2000
11	LARGE PAPER CLIP	1.3g	\$10,000
12	SMALL PAPER CLIP	0.4g	\$4000
13	ELASTIC	0.2g	\$10,000

This is the face you'll make at the top, 230 feet in the air, facing a 75 degree drop, and speeds of 125 km/hr.



Half way don't puke yet



Restraint System

The Behemoth features three 32 passenger trains. There might be a long line up when you get there, but the ride can accommodate 1545 passengers in an hour. Each car carries 4 passengers, and holds them in place with a hydraulic lap bar. If you're in the back row of the car, you sit precariously close to the edge. Where will you sit?

OMG!

You simply have to ride this coaster. For those of you that have never ridden a coaster, I suggest you check this one out. Although you might be afraid of the death defying heights you'll climb, this is one of the smoothest coasters you'll ever ride. Don't initiate yourself on the Mine Buster. It will rattle your bones, and leave you wondering why you waited in line for an aging wooden giant. The 5318 feet of jaw-dropping ups and downs will ease you gently into the world of fast paced fun. You will feel a sense of accomplishment once you've tackled this giant. You'll find yourself craving more loops and turns. You'll be begging to go faster and be flipped upside down. But you may never find yourself on another ride again. You might just keep running back to the line to try this one over and over again. Try the front, the middle or the back. You won't be disappointed!!



"Behemoth is the biggest investment in Canada's Wonderland's 27 year history at approximately \$26 million dollars," said Raffi Kaprelyan, Vice President and General Manager, Canada's Wonderland.

