

Tower Project 2016

Goal: To construct the tallest tower with the best Height/cost ratio using only marshmallows and balsa sticks.

Teams:

Each team will consist of 3 to 4 individuals

Description:

Each team will purchase marshmallows and balsa sticks from the Physics store. Using only these items your group must construct a tower that is at least 40 cm tall. Your tower must remain standing for at least 1 minute to qualify and have a marshmallow at the top. You may do anything to the marshmallows or balsa sticks once you have purchased them. The team who has the tower with the best Height/Cost ratio will be declared the winner and receive 5 points. The losing teams will receive points in accordance with their placing. Each team that has a qualifying entry will receive a minimum of 2.5 points.

Competition:

- Formulate a design plan. Turn the plan into cashier when you purchase marsh mellovs and balsa sticks.
- You may purchase more marshmallows and balsa sticks during the construction process.
 - \$1 for each marshmallow and each stick
 - \$0.75 each if you buy a pack of 10
 - \$0.50 each if you buy a pack of 20
- Complete the tower by the end of the class period.

Design Plan:

Data:

# of marsh mallows-cost	# of sticks-cost	Total Cost	Height (cm)	Height/Cost
-	-			

Analysis: (Include the following information in your discussion of the project) 3 pts

1. The Challenge?
2. The Solution?
3. The Results?
4. The Errors?
5. The Evaluation?
6. The Reflection?

Tower Project 2015

Goal: To construct the tallest tower with the best Height/cost ratio using only marshmallows and balsa sticks.

Teams:

Each team will consist of 3 to 4 individuals

Description:

Each team will purchase marshmallows and balsa sticks from the Physics store. Using only these items your group must construct a tower that is at least 40 cm tall. Your tower must remain standing for at least 1 minute to qualify and have a marshmallow at the top. You may do anything to the marshmallows or balsa sticks once you have purchased them. The team who has the tower with the best Height/Cost ratio will be declared the winner and receive 10 points. The losing teams will receive points in accordance with their placing. Each team that has a qualifying entry will receive a minimum of 5 points.

Competition:

- Formulate a design plan. Turn the plan into cashier when you purchase marsh melloes and balsa sticks.
- You may purchase more marshmallows and balsa sticks during the construction process.
- Take 30 minutes to complete the design.

Design Plan:

Data:

# of marsh melloes (\$0.50)	# of sticks (\$1)	Total Cost	Height (cm)	Height/Cost
-----------------------------	-------------------	------------	-------------	-------------

Website Report: (Include the following information in your discussion of the project) 10 pts

1. Describe the process your team used to decide on an initial design and why you choose that design.
2. What were the important factors in constructing the tower?
3. What problems did you encounter?
4. If you had the opportunity to begin building over completely from scratch, how would you have changed what you did?
5. Include the data table information. How is this information useful?
6. Why is the ratio used for a winner and not just the highest tower?

Tower Project 2014

Goal: To construct the tallest tower with the best Height/cost ratio using only marshmallows and balsa sticks.

Teams:

Each team will consist of 3 to 4 individuals

Description:

Each team will purchase marsh mellows (\$0.50 ea) and balsa sticks (\$1 ea) for the Physics store. Using only these items your group must construct a tower. You may do anything to the marsh mellows or balsa sticks once you have purchased them. Your tower must remain standing for at least 1 minute to qualify and have a marsh mellow at the top. The team who has the tower with the best Height/Cost ratio will be declared the winner and receive 10 points. The losing teams will receive points in accordance with their placing. Each team that has a qualifying entry will receive a minimum of 5 points.

Competition:

- Spend 5 minutes coming up with a design plan. Please make a sketch. Turn plan into cashier when you purchase marsh mellows and balsa sticks.
- You may purchase more marsh mellows and balsa sticks during the construction process.
- Take 30 minutes to complete the design.

Plan of attack: (include a sketch)

Data:

f marsh mellows (\$0.50)	# of sticks (\$1)	Total Cost	Height (cm)	Height/Cost

Website Report: (Include the following information in your discussion of the project) 10 pts

7. Describe the process your team used to decide on an initial design and why you chose that design.
8. What were the important factors in constructing the tower?
9. What problems did you encounter?
10. If you had the opportunity to begin building over completely from scratch, how would you have changed what you did?
11. Include the data table information. How is this information useful?
12. Why is the ratio used for a winner and not just the highest tower?

Tower Project 2013

Goal: To construct the tallest tower possible using only marshmallows and balsa sticks.

Teams:

Each team will consist of 3 to 4 individuals

Description:

Each team will purchase marsh mellows and balsa sticks for the Physics store. Using only these items your group must construct a tower. You may do anything to the marsh mellows or balsa sticks once you have purchased them. Your tower must remain standing for at least 1 minute to qualify and have a marsh mellow at the top. The team who has the tower with the best Height/cost ratio will be declared the winner and receive 10 points. The losing teams will receive points in accordance with their placing. Each team that has a qualifying entry will receive a minimum of 5 points.

Competition:

- Spend 5 minutes coming up with a design plan. Please make a sketch. Turn plan into cashier when you purchase marsh mellows and balsa sticks.
- You may purchase more marsh mellows and balsa sticks during the construction process.
- Take 30 minutes to complete the design.

Plan of attack: (include a sketch)

Data:

of marsh mellows (1)	# of sticks (1)	Height (cm)	Height/cost

Website Report: (Include the following information in your discussion of the project) 10 pts

13. Describe the process your team used to decide on an initial design and why you chose that design.
14. What were the important factors in constructing the tower?
15. What problems did you encounter?
16. If you had the opportunity to begin building over completely from scratch, how would you have changed what you did?
17. Include the data table information. How is this information useful?
18. Why is the ratio used for a winner and not just the highest tower?

Tower Project 2012

Goal: To construct the tallest tower possible using only marshmallows and pasta.

Teams:

Each team will consist of 3 to 4 individuals

Description:

Each team will be choose a bag of marshmallows and a box of pasta. Using only these items your group must construct a tower. The group who has the tallest tower that remains standing at the end of the hour is declared the winner. Each item must remain in its original state. No breaking of the pasta or tearing apart the marshmallows is allowed.

Your tower must remain standing for at least 1 minute to qualify. The team who has the tallest tower will be declared the winner and receive 10 points. The losing teams will receive points in accordance with their placing. Each team that has a qualifying entry will receive a minimum of 5 points. Bonus points may be added to your score for the lowest number of marsh mellows or sticks per height.

Competition:

- Each team will be choose a bag of marshmallows and a box of pasta. Note why you made the choices.
- Spend 5 minutes coming up with a design plan. Please make a sketch.
- Take 30 minutes to complete the design.

Data:

# of marsh mallows	# of sticks	Height (cm)	Height/marsh mallow	Height/stick

Website Report: (Include the following information in your discussion of the project) 10 pts

19. Describe the process your team used to decide on an initial design and why you chose that design.
20. What were the important factors in constructing the tower?
21. What problems did you encounter?
22. If you had the opportunity to begin building over completely from scratch, how would you have changed what you did?
23. Include the data table information. How is this information useful?

Tower Project 2011

Goal: To construct the tallest tower possible using only marshmallows and fettuccine.

Teams:

Each team will consist of 3 to 4 individuals

Description:

Each team will be given a bag of marshmallows and a box of fettuccine. Using only these items your group must construct a tower. The group who has the tallest tower that remains standing at the end of the hour is declared the winner. Each item must remain in its original state. No breaking of the fettuccine or tearing apart the marshmallows is allowed.

Your tower must remain standing for at least 1 minute to qualify. The team who has the tallest tower will be declared the winner and receive 10 points. The losing teams will receive points in accordance with their placing. Each team that has a qualifying entry will receive a minimum of 5 points. Bonus points may be added to your score for the lowest number of marsh mellows or sticks per height.

Data:

# of marshmallows	# of fettuccine	Height (cm)	Height/marshmallow	Height/fettuccine

Website Report: (Include the following information in your discussion of the project) 10 pts

24. Describe the process your team used to decide on an initial design and why you chose that design.
25. What were the important factors in constructing the tower?
26. What problems did you encounter?
27. If you had the opportunity to begin building over completely from scratch, how would you have changed what you did?
28. Include the data table information. How is this information useful?
29. You've heard about the scientific method in every science class you've ever taken. How does this project mirror the scientific process? What are some similarities, and where is it different?

Tower Project 2010

Goal:

To design and build the tallest free standing tower using only paper and scotch tape.

Teams:

Each team will consist of 2 to 3 individuals

Description/Construction:

The challenge of this project is to design the tower to make optimum use of 2 sheets of paper to achieve the greatest tower height. The design of the base will also be challenging, as the tower must be free standing. Each team should be given two 8.5" by 11" sheets of paper, a pair of scissors, and 2 feet of scotch tape. The tape is to be used only to fasten the pieces of paper together, and may not be used to provide extra height.

Competition:

- The tower must be built within 1 class period.
- Each tower will be required to free stand long enough to be measured. (cannot be taped to the floor)
- The team with the tallest tower will be the winner and receive 10 points. The losing teams will receive points in accordance with their placing. You are competing with the other physics class.

Reflections: (5 pts - To be completed and handed in next class period)

30. Describe the process your team used to decide on an initial design. How did the discussion proceed?
How did you decide on a design?
31. As you first began building did you encounter any additional problems you hadn't anticipated?
32. What did you learn in this process that caused you to make changes to your design as building progressed?
33. If you had the opportunity to begin building over completely from scratch, how would you have changed what you did?
34. You've heard about the scientific method in every science class you've ever taken. How does this project mirror the scientific process? What are some similarities, and where is it different?

Tower Project 2009

Goal: To construct the tallest tower possible using only marshmallows and fettuccine.

Teams:

Each team will consist of 3 to 4 individuals

Description:

Each team will be given a bag of marshmallows and a box of fettuccine. Using only these items your group must construct a tower. The group who has the tallest tower that remains standing at the end of the hour is declared the winner. Each item must remain in its original state. No breaking of the fettuccine or tearing apart the marshmallows is allowed.

Your tower must remain standing for at least 1 minute to qualify. Please fill in the chart below for your completed tower. The team who has the tallest tower will be declared the winner and receive 10 points. The losing teams will receive points in accordance with their placing. Each team that has a qualifying entry will receive a minimum of 5 points. Bonus points may be added to your score for the lowest number of marshmallows or sticks per height.

Data:

# of marshmallows	# of fettuccine	Height (cm)	Height/marshmallow	Height/fettuccine

Analysis:

- 1) What are the important factors in constructing the tower?

- 2) Why did you choose the design?

- 3) What problems did you encounter?

- 4) What would you do differently next time?

- 5) What suggestions do you have for improving this project?

Tower Project 2008

Goal: To construct the tallest tower possible using only marshmallows and balsa sticks.

Teams:

Each team will consist of 3 to 4 individuals

Description:

Each team will be given a bag of marshmallows and balsa sticks. Using only these items your group must construct a tower. The group who has the tallest tower that remains standing at the end of the hour is declared the winner. Each item must remain in its original state. No breaking of the balsa sticks or tearing apart the marshmallows is allowed.

Your tower must remain standing for at least 1 minute to qualify. Please fill in the chart below for your completed tower. The team who has the tallest tower will be declared the winner and receive 10 points. The losing teams will receive points in accordance with their placing. Each team that has a qualifying entry will receive a minimum of 5 points. Bonus points may be added to your score for the lowest number of marshmallows or sticks per height.

Data:

# of marshmallows	# of sticks	Height (cm)	Height/marshmallow	Height/stick

Analysis:

1) What are the important factors in constructing the tower?

2) Why did you choose the design?

3) What problems did you encounter?

4) What would you do differently next time?

5) What suggestions do you have for improving this project?

Tower Project 2007

Goal: To construct the tallest tower possible using only marshmallows and balsa sticks.

Teams:

Each team will consist of 3 to 4 individuals

Description:

Each team will be given a bag of marshmallows and balsa sticks. Using only these items your group must construct a tower. The group who has the tallest tower that remains standing at the end of the hour is declared the winner. Each item must remain in its original state. No breaking of the balsa sticks or tearing apart the marshmallows is allowed.

Your tower must remain standing for at least 1 minute to qualify. Please fill in the chart below for your completed tower. The team who has the tallest tower will be declared the winner and receive 10 points. The losing teams will receive points in accordance with their placing. Each team that has a qualifying entry will receive a minimum of 5 points. Bonus points may be added to your score for the lowest number of marshmallows or sticks per height.

Data:

# of marshmallows	# of sticks	Height (cm)	Height/marshmallow	Height/stick

Analysis:

1) What are the important factors in constructing the tower?

2) Why did you choose the design?

3) What problems did you encounter?

4) What would you do differently next time?

5) What suggestions do you have for improving this project?

Tower Project 2006

Goal: To construct the tallest tower possible using only marshmallows and spaghetti.

Teams:

Each team will consist of 3 to 4 individuals

Description:

Each team will be given a bag of marshmallows and a box of spaghetti. Using only these items your group must construct a tower. The group who has the tallest tower that remains standing at the end of the hour is declared the winner. Each item must remain in its original state. No breaking of the spaghetti or tearing apart the marshmallows is allowed.

Your tower must remain standing for at least 2 minutes to qualify. Please fill in the chart below for your completed tower. The team who has the tallest tower will be declared the winner and receive 10 points. The losing teams will receive points in accordance with their placing. Each team that has a qualifying entry will receive a minimum of 5 points. Bonus points may be added to your score for the lowest number of marshmallows or sticks per height.

Data:

# of marshmallows	# of sticks	Height (cm)	Height/marshmallow	Height/stick

Analysis:

1) What are the important factors in constructing the tower?

2) Why did you choose the design?

3) What problems did you encounter?

4) What would you do differently next time?

5) What suggestions do you have for improving this project?