

Geometry
Tin Man Project

Name: _____
Partner: _____



You are creating a tin man. Your tin man will be made out of various objects put together.

Your tin man **MUST** have the following:

- Two arms, two legs, a body, a sphere head and a cone shaped hat.
- Must stand or sit on its own.
- Must be less than 200 cm tall.
- Must only obtain and apply tin foil in class with double sided tape provided.

Overarching Goals:

- Critique the work of others in a meaningful way and work with a partner to request the correct amount of tin foil.
- Apply the most accurate amount of Tin Foil to the surface area of your Tin Man without overlap, folding, crinkling etc.
- Reflect on project and explain the errors that occurred, why they may have occurred, and how you might fix them if you could do it again.

Prior to getting the foil do the following:

_____ You must calculate the surface area and volume of your Tin Man

_____ You must create a blueprint on graph paper of how you plan to use the foil you request (in this part of the process you can prepare for any waste that is sure to occur and plan ahead).

We _____ agree that we need the exact
(name of each person)

amount of _____ of aluminum foil to completely cover our tin man
(total area)

_____, without running out and without having any left over.
(name of your tin man)

Geometry

Tin Man Project Rubric

Name: _____

Tin Man's Name: _____

Category:	5/6	4	3	2	Score Yourself	Final Score
Working With Others & Work Ethic	Student was an active worker and partner, listening to suggestions of others and working cooperatively. Student took on an equal part in the math and the making of the tin man.	Student was an active partner but had trouble listening to others and/or working cooperatively. Student was not an equal partner.	Student cooperated with others, but needed prompting to stay on-task and did not contribute as much to the Tin Man.	Student did not work effectively with others and/or had issues with cooperation. Student didn't participate much in making of Tin Man.		
Daily Work Get this checked off each day of project!	Day 1	Day 2	Day 3	Comments		
Reflection Answers	Reflection shows an understanding of surface area and its application in a real world situation. Errors are discussed and analyzed. Possible ways to correct these errors are suggested. Reflection is detailed, written in complete sentences with correct grammar.	Reflection shows an understanding of surface area and its application in a real world situation. Errors are discussed and analyzed. No corrections discussed or made. Clear detailed answers. Some answers have grammatical errors or incomplete sentences.	Answers are written in complete sentences and are grammatically correct but are not detailed or do not contain enough information.	Answers are general or vague. Answers not in complete sentences or uses a lot of slang. Not personal or organized. No evidence of reflection or very off topic.		
Worksheet: Surface Area & Volume Problems	All problems are completed and accurate for Surface area and Volume. Formulas are present, variable values are stated clearly.	All but one of the problems are completed. Formulas are present, variable values are stated clearly.	All but two of the problems are completed. Formulas are not stated, and/or variable values missing. Answers only.	Several of the problems are not completed. No work shown.		
Completeness	Tin Man has all parts attached, is standing or sitting on its own, and is fully covered.	Tin man has all parts attached, is standing or sitting on its own, and is mostly covered.	Tin man has all parts attached, is less than half covered and/or does not stand or sit on its own.	Tin man is not put together and/or not covered.		

Comments:

Total _____ /20 points

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Find and Record the Surface area & Volume of each body part. Each partner should be doing the math. Verify with each other that you have the same answers. This paper should be turned in with your project reflection.

Include the following in each section:

- The formula used
- Each variable and its value used in the formula
- The answer.

Work must be shown to pass.

Sphere Head	Cone Shaped Hat	Body
Arm	Arm	Leg
Leg		

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Turn in checklist:

- Original packet with all work, signatures etc.
- All Surface area math shown
- All Volume math shown
- Graph paper with blueprint of nets to cut from foil
- Reflection filled out by YOU!
- Rubric filled out by YOU!

Geometry
Tin Man Reflection

Name: _____

Please answer the following questions thoughtfully and give details. These reflections can be typed and shared in google docs and should be if I won't be able to read your handwriting! If done via google docs, the reflections should include the questions (you can ask me to share this with you if needed).

The reflection is the most important part, so please do your best work. Thank you 😊

The Tin Man Reflection Questions

1. What was the hardest shape to measure and why?

2. What units did you use to measure with and how did this impact your project?

3. Did you make any changes to your tin foil request after making a blueprint? Why?

4. Did you have enough foil to cover your entire tin man? Why or why not?

The Process

5. What was the most confusing part of the process?

6. If you could turn back time and do this project again, what would you do differently?

The Partner

7. What are three things you did during this project to help your classmates?

8. Did you and your partner work well together? Explain.

9. How much effort did you put into this project? Explain.

10. If you had to give yourself a grade on this project, what grade would it be and why?

11. If you had to give your partner a grade on this project, what grade would it be and why?

12. What advice would you give students who will participate in this project in the future?

13. What is something that was hard for you at the start of the project, but is easy now?
