

“String Runner”

Introduction to Technology

(A team building experience in hands-on problem solving)

Name(s): _____

Date: _____

Technology Challenge: *Identify the Problem*

Design a vehicle that will travel across a 10-foot span using only the materials provided.



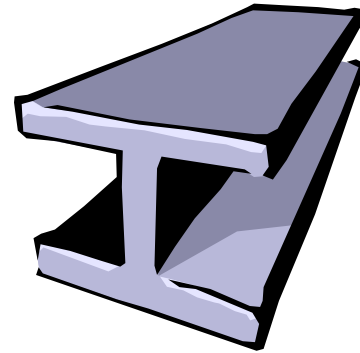
Some details to consider:

The vehicle must:

- Travel 10 feet across the string span.
- Be made only of materials provided in the resource bag, no replacements will be issued!
- Have the ability to be easily attached and detached from the string track.
- Carry a payload challenge.

Other:

- Human contact can only touch the system before the vehicle departure and after arrival, or if the system fails between the two points.
- The power source should be part of the system. No other external power sources such as muscle power, pushing, throwing, or blowing may be used to move the system.



Set Goals for the String Runner!

(Please write in complete sentences.)

Goal 1 –
Goal 2 –
Goal 3 –
Goal 4 –

Create Ideas: *Brainstorming*

Use this page to brainstorm at least 3 ideas to solve the problem.

These are called Thumbnail Sketches.

* Make sure drawings are large enough to show detail.

Select the Best Solution: *Design Matrix*

Complete the Design Matrix to determine the best solution / idea to solve the problem.

4 – meets perfectly 3 – meets well 2 – meets somewhat 1 – meets minimally 0 – does not meet	Solution 1	Solution 2	Solution 3
<i>Friction</i>			
<i>Light Weight</i>			
<i>Ease of Assembly</i>			
<i>Durability</i>			
<i>Power</i>			
Totals:			

Original Design:

Initials:

What does it look like now – draw before testing!

* All materials must be labeled.

Test: *The fun begins!*

Once the design is complete and the vehicle is built, begin **testing**.

- Document your test results. Record any observations and changes used to solve the design problem. (You must conduct of **at least 4** tests! More if required.)

Test 1 results –
We changed -
Test 2 results –
We changed -
Test 3 results –
We changed -
Test 4 results –
We changed -

***Please use complete sentences to describe changes.**

***If necessary, additional tests can be documented on another page and stapled together.**

Final Design - What does it look like now?

Please draw a detailed picture of the final product (design) you are turning in for a grade.

- **Make the drawing as detailed as possible with labels of the materials used in construction.**
- **Make the drawing NEAT.**
- **Make the drawing large enough for the instructor to see!**

A large, empty rectangular box with a thin black border, intended for the student to draw a detailed picture of their final product. The box is currently blank.

	Possible Points	Student Grading	Teacher Grading
Name, Date, Self Grading	3		
Set goals	5		
Thumbnail Sketches	15		
Design Matrix	15		
Sketch	5		
Testing	20		
Final Design Sketch	7		
Test Results 10ft (1pt per ft)	10		
TOTAL	80		

String Runner Feedback

1 – Capitalization and ending punctuation

2 – 3 to 4 sentences per question

3 – Answer questions, content specific

****Please remember to skip lines when writing on lined paper and double space the document when typing.**

Remember your NAME and DATE.

Answer the following questions

- What was the process?
- What did you learn from this experience?
- Did the design meet your goals? If not, why?
- How you could further improve your design?
- Did you like the challenge?

12pt font

Double spaced

Follow the conventions of writing

This activity is worth 20 points

String Runner Grading Rubric