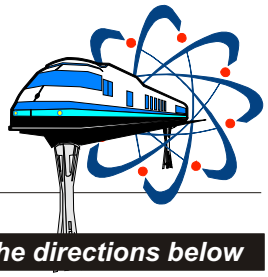
NAME: _____ CLASS: _____.



DESIGN SHEET

Step 1 Identify the need or the problem — **Write down the directions below**

What do we have to do for this challenge?

_____

_____

_____

_____

Standards we must meet

Maximum base length: _____

Maximum base width: _____

Maximum sail area: _____

How many different materials: _____

Step 2 Research the need or the problem — **Fill out the Research Worksheet for homework**

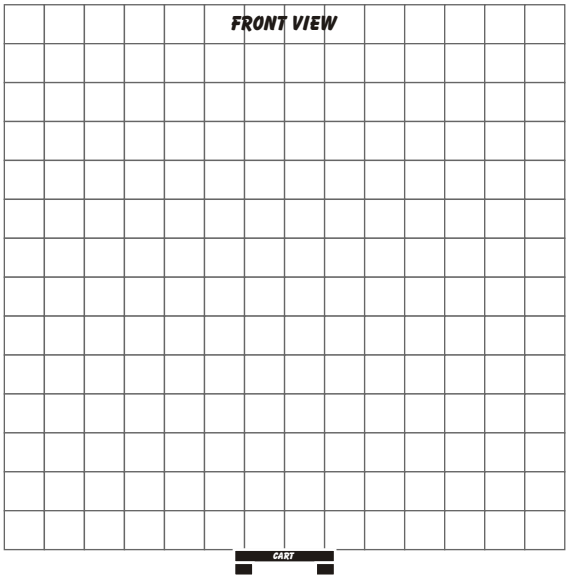
Use the back side of this sheet to do your research

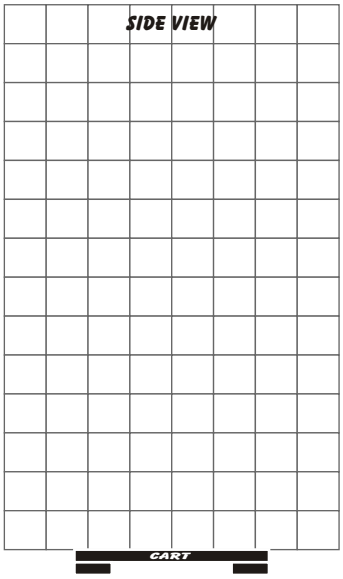
Step3 Develop possible solutions — **Sketch two designs for a Meg-Lev Racer below**

Draw 2 possible solutions for the problem. Make sure you draw a front and a side view for each of your ideas

SKETCH 1

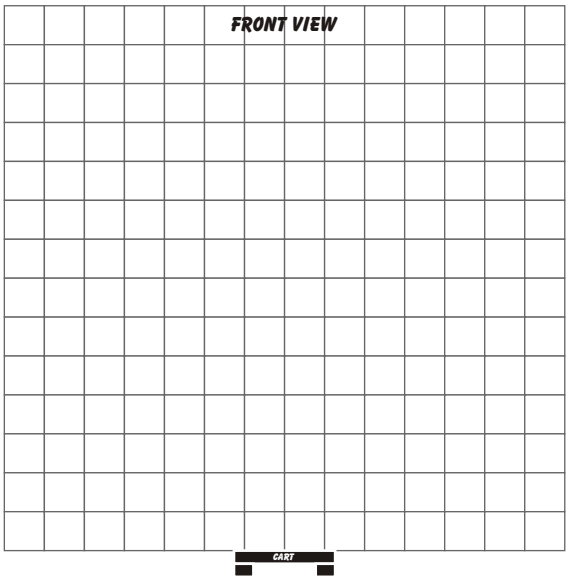
Each square = 1”

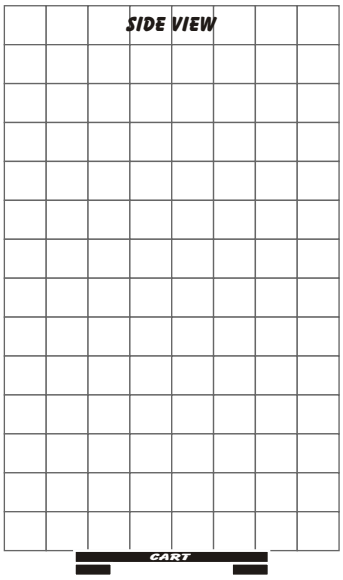




SKETCH 2

Each square = 1”





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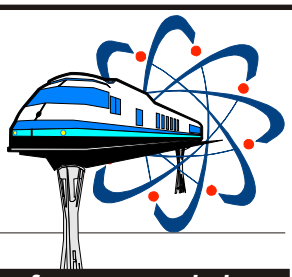


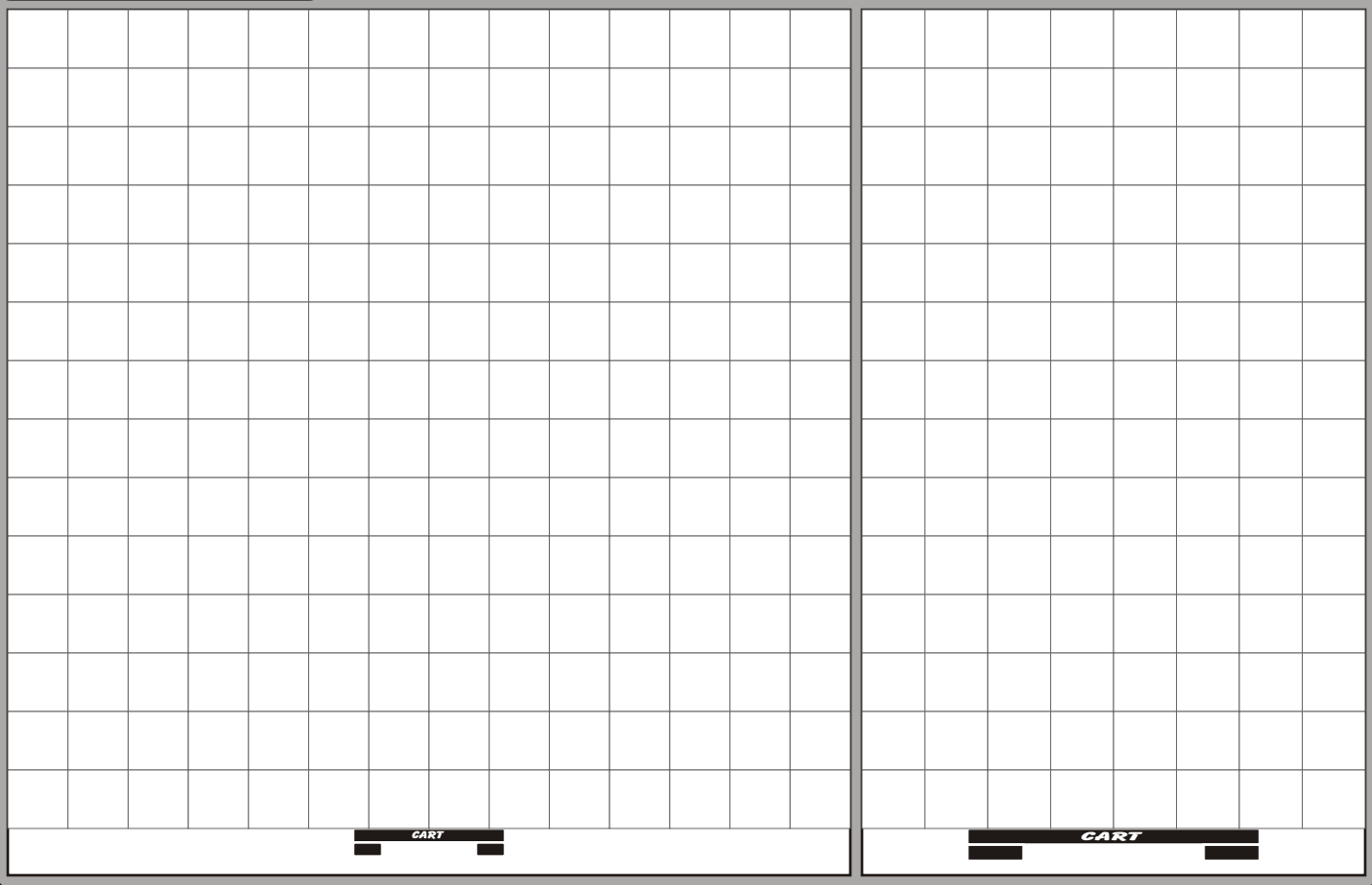
FINAL DESIGN

Step 4 Select the best possible solution | **Draw a final design of your racer below**

Include dimensions and the materials you plan to use.

SCALE: Each square = 1”

final design



MATERIALS:

Sail Frame:_____ **Sail:**_____

Mast:_____ **Base:**_____

Area of the Sail (use formulas on Problem Guidelines page) **:**_____

Step 5 Construct a prototype of your solution | **Make your Mag Lev Racer**

List the steps you took to construct your racer

1 _____
2 _____
3 _____
4 _____
5 _____
6 _____
7 _____
8 _____
9 _____
10 _____

Step 6 Test and evaluate your solution | **DO NOT turn on the fan for this step**

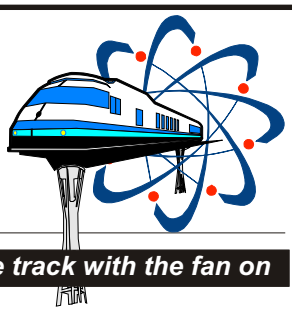
Place the vehicle on the track and list any problems

_____
_____
_____
_____

List how you intend to fix the problems

_____
_____
_____
_____

NAME: _____ CLASS: _____.



RE-DESIGN & EVALUATE

Step 7 Communicate the solution

Test your racer on the track with the fan on

Test your racer on the track several times and record what happens

Observations	List any problems you find

Step 8 Redesign and / or rebuild your solution

Fix your racer until it works perfectly

List the things that you changed on your racer	List the ways the changes effected your racer

Step 9 Evaluation

How did your racer perform?

What was the best improvement that you made to your racer?

_____

What was the area of your final sail design in inches? (refer back to the Problem Guidelines page for formulas)

_____

What sail shape did you and your team finally decide on? Explain why you decided on that shape?

_____

_____

In the spaces provided, draw what your final racer design looked like and list the actual materials you used.

FRONT VIEW

CART

SIDE VIEW

CART

MATERIALS: Sail Frame:_____ Sail:_____
Mast:_____ Base:_____