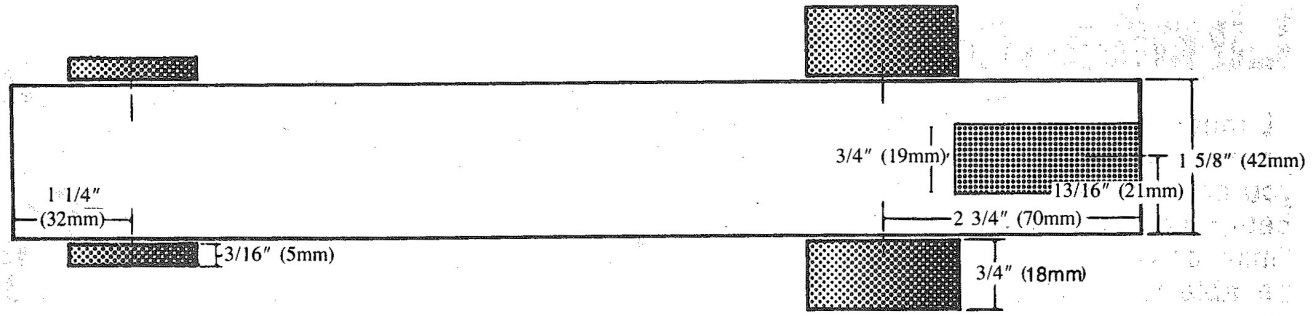
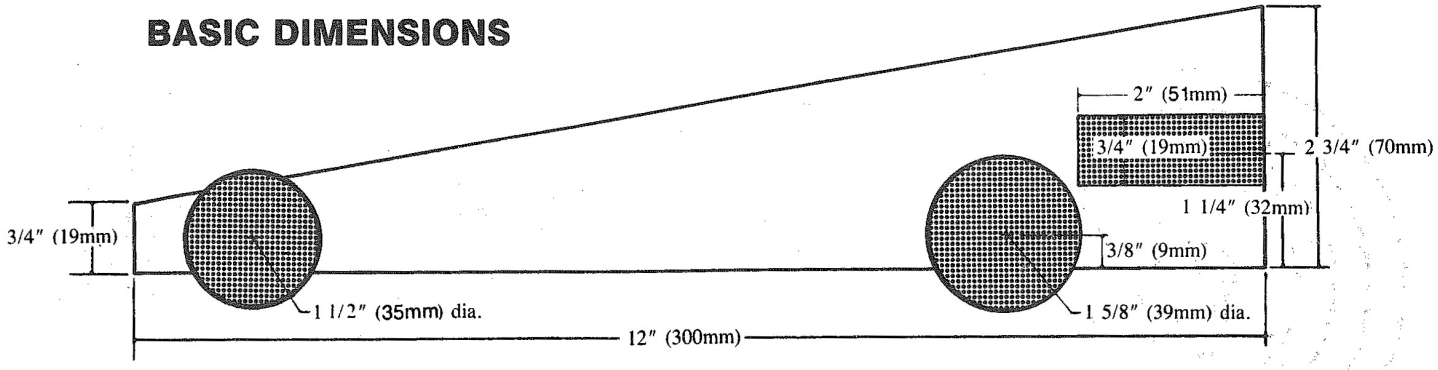
NAME: _____ BLOCK: _____



BASIC DIMENSIONS



FACTORS	LIMITATIONS	
	MAXIMUM	MINIMUM
AXLES (diameter)	3mm	3mm
AXLES (length)	70mm	42mm
AXLES BEARING (diameter)	4.5mm	3.5mm
AXLE HOLE (diameter)	4.5mm	3.5mm
AXLE HOLE (position above body bottom)	9mm	3.5mm
AXLE HOLE (position from either end of body)	100mm	9mm
BRASS SPACER BEARING (diameter)	9mm	7mm
DRAGSTER BODY (length)	305mm	200mm
DRAGSTER BODY (height at rear **with** wheels)	75mm	56mm
DRAGSTER BODY (mass with wheels)*	170.10g	30g
DRAGSTER BODY (width at axles-front and back)	42mm	35mm
POWER PLANT DEPTH OF HOLE	51mm	51mm
POWER PLANT HOUSING THICKNESS (around entire housing)		3mm
POWER PLANT HOUSING (diameter)	20mm	19mm
POWER PLANT C/L (from body bottom)	35mm	31mm
SCREW EYE (eyelet inside diameter)	5mm	3mm
SCREW EYES (2) on C/L of bottom, distance apart	270mm	155mm
WHEELS, FRONT (diameter)	37mm	32mm
WHEELS, FRONT (width of greatest diameter)	5mm	2mm
WHEELS, REAR (diameter)	40mm	30mm
WHEELS, REAR (width of greatest diameter)	18mm	15mm
WHEELBASE	270mm	105mm

Assembled without CO_2 cartridge REVISED 08/1/86

Design Carefully

This page lists what your production specifications are. You will start with a block of wood cut to the dimensions shown above. It can not be any longer or wider than the measurements shown. The engine for the dragster is a pressure-filled $C0_2$ cartridge which fits into the back of the dragster. Make sure the cartridge can be fully inserted when the dragster is finished. Follow all given specifications closely.

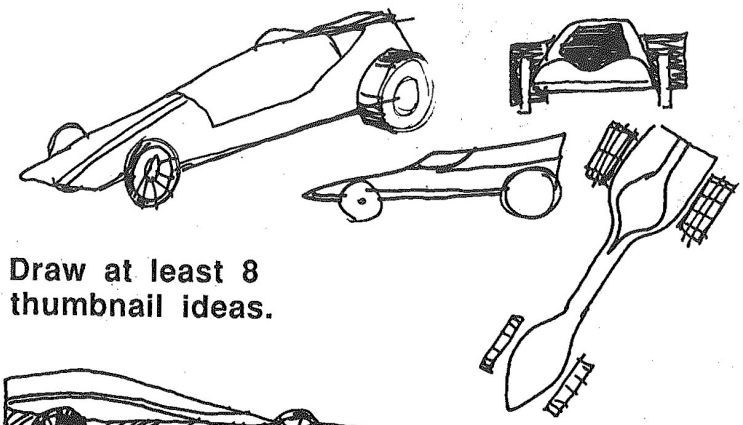
TECHNOLOGY STUDENTS ASSOCIATION (TSA).
TSA METRIC 500 DRAGSTER SPECIFICATIONS

For dates and information on your state or the national Metric 500 contest, contact:

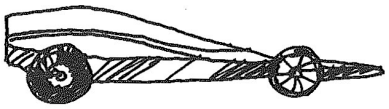
TSA
1908 Association DR.
Reston, VA 22091
703-860-9000

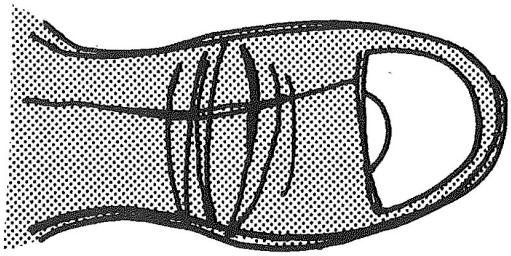
Thumbnails

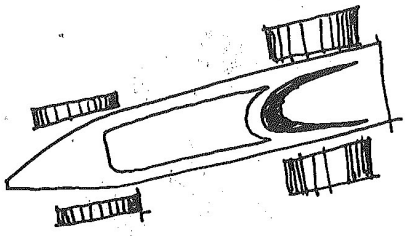
Your thumbnail drawings do not have to be a masterpiece. They shouldn't be anyway. Keep them simple and small. The small drawings shown are examples. Use the space provided on these pages to draw your ideas. You must draw at least eight different ideas. Do not be afraid to experiment with some far out designs.



Draw at least 8 thumbnail ideas.





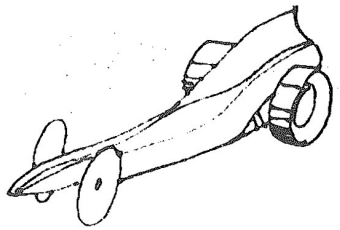


Have you filled these pages with ideas? There must be hundreds of different body styles you could have. Fill the pages with many drawings.

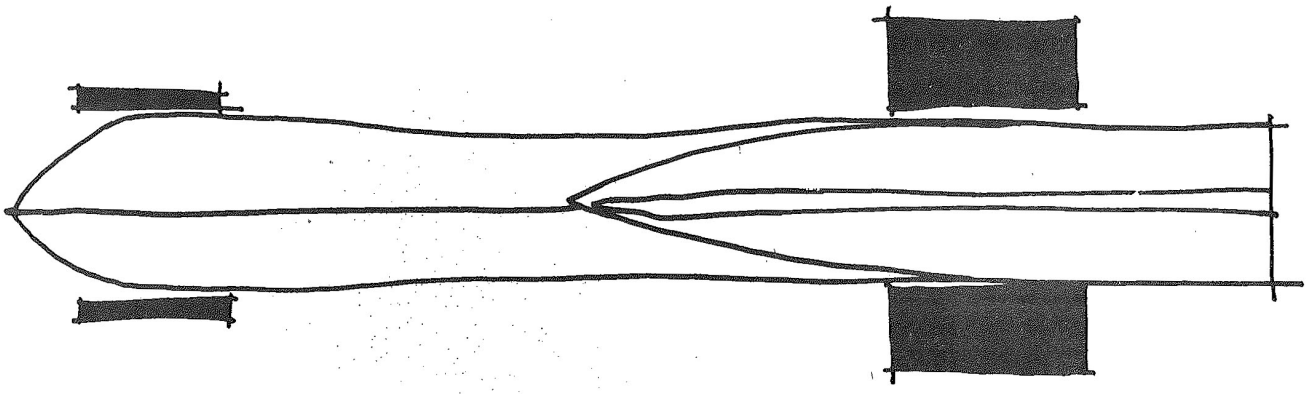
Sketches

Look over your thumbnails and choose the best three ideas. Try to have three totally different designs rather than just one slightly changed. Draw a top and side view of each idea. Your sketches should be similar to the ones shown. Be sure to remember your production limitations. Refer to the drawings and list on pages 5 and 6 if you need to. Use the next three pages for these top and side view drawings of each your three designs.

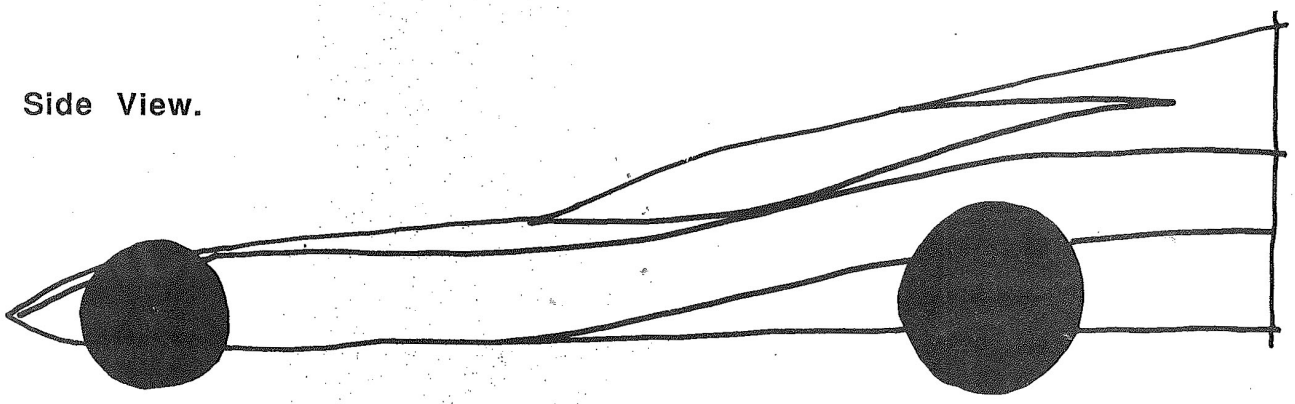
Copy the thumbnail you are working from here.



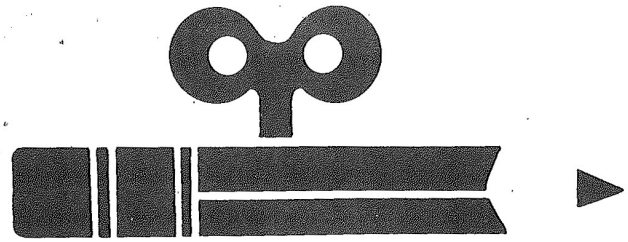
Example drawing of Top View.



Side View.



Now you do the same on the next three pages as shown here.



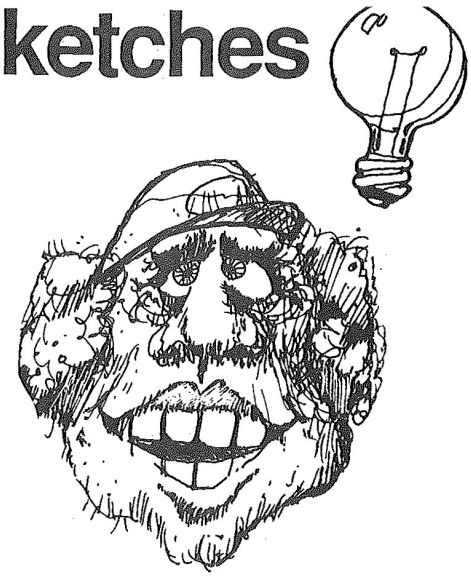
Be creative and try something different.

Copy the thumbnail you are working from here.

Top View

Side View

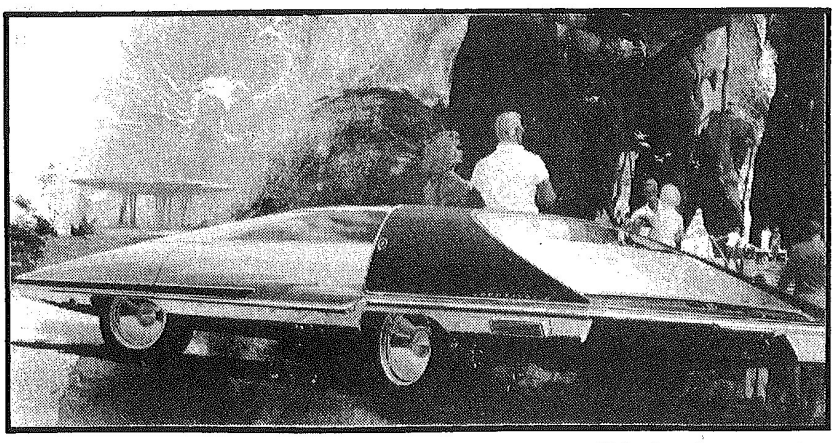
Sketches



Copy the thumbnail you are working from here.

Top View

Side View



U.S. Steel Corporation

Copy the thumbnail you are working from here.

Top View

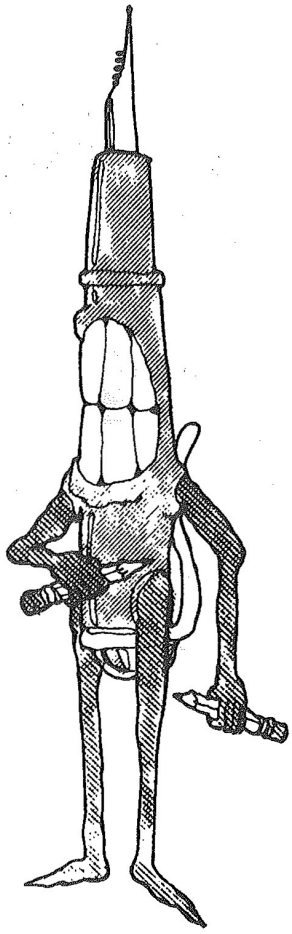
Side View

Finished Drawing

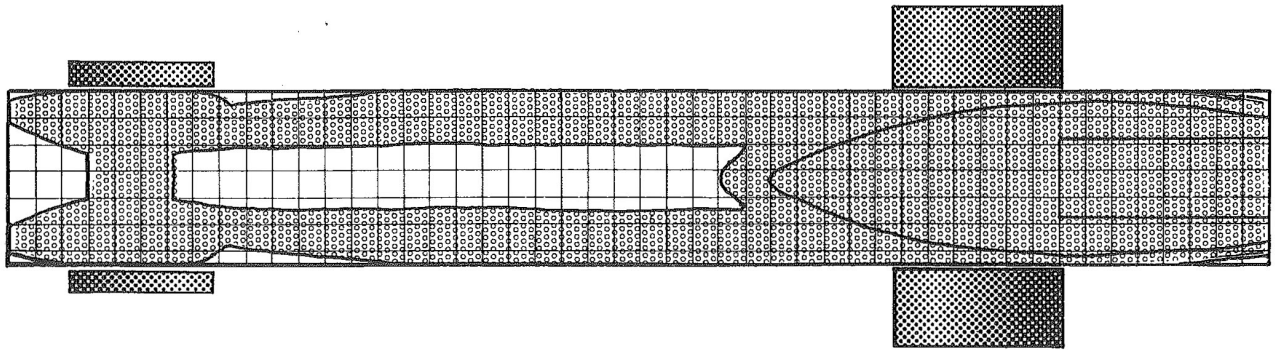
Now you have reached the final drawing stage. This is the last step before making the prototype. Choose the best of your three detailed sketches. Carefully draw your chosen design on the dragster grid patterns provided on the opposite page. The drawings below are examples.

Checklist

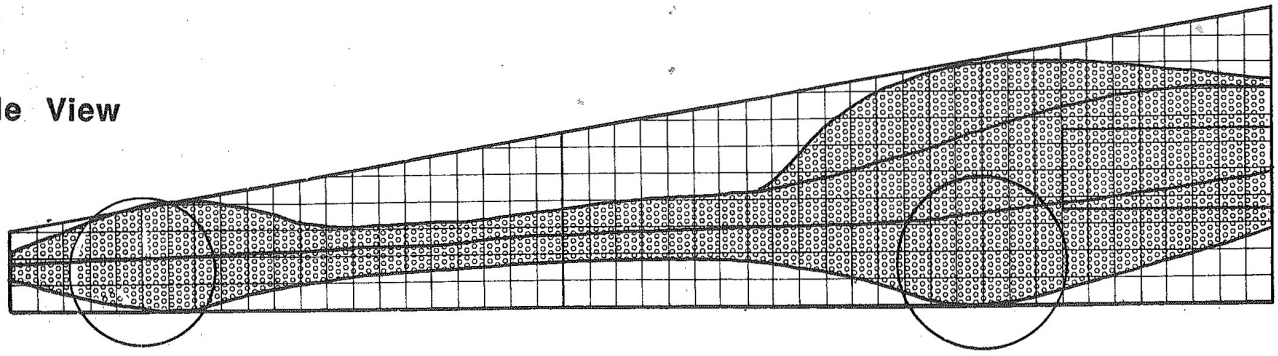
- ☐ 1. Is the front axle in the correct position?
- ☐ 2. Is the rear axle in the correct position?
- ☐ 3. Have you allowed enough room for the CO_2 engine?

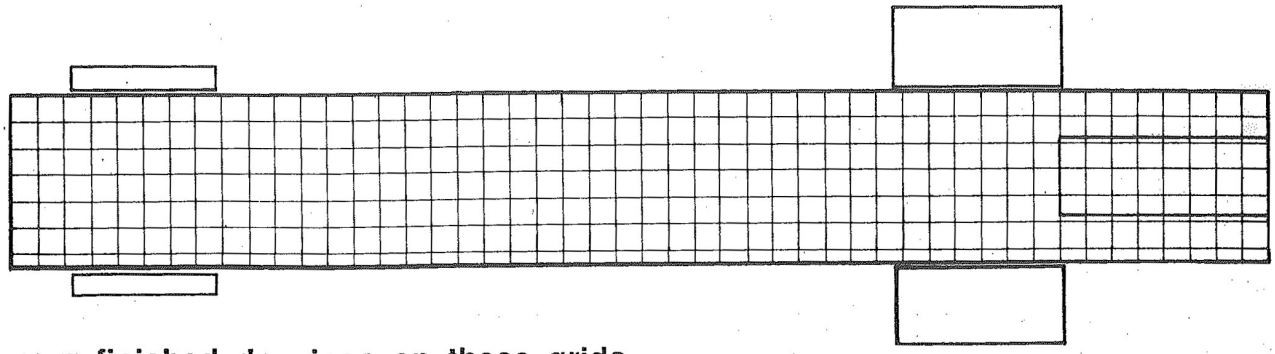


Top View



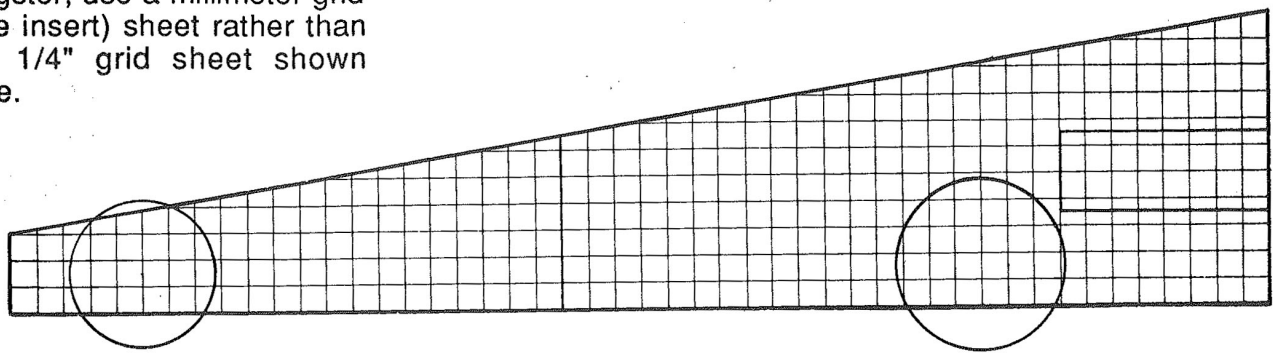
Side View



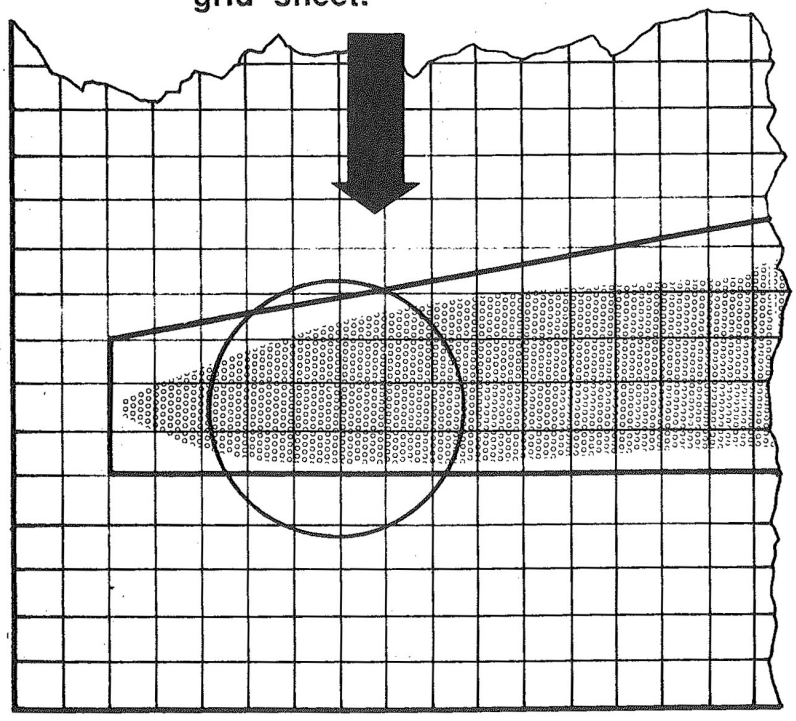


Do your finished drawings on these grids.

If you are using metric measurements to build your dragster, use a millimeter grid (see insert) sheet rather than the 1/4" grid sheet shown here.



Carefully copy your design onto the final grid sheet.



NOTE:

When you have finished drawing your dragster on the patterns above, transfer it to a full size grid sheet (1/4" squares on a 9"x12" sheet). Draw the dragster to actual size within the listed specifications on page 5.

You must do these drawings very accurately because they will be used as patterns for cutting and shaping the dragster body.