

LAKE COUNTRY CHOPPERS

Custom Bike Manufacturer

Purpose:

In this activity you will design and build a miniature Chopper Motorcycle.

The design and construction of custom choppers is a very big industry. Kreator Kustom Cycle in Kelowna prices start at \$80,000 and go up from there.



Designing a bike is a balance between form and function. Every piece is sculpted and shaped to be part of a “theme” – the bike’s appearance should have unity between all the different elements of its construction. Parts that don’t look right *together* will ruin the appearance of the bike.

The design should be unique, very well built, and totally wicked awesome.

Preparation:

To complete this project you will need to have the following:

- 3/16” steel rod
- 1/16” sheet steel
- Assorted size cap screws and nuts
- Assorted size pipe sections
- Demonstrated safe use of Oxy-Acetylene torch
- Brazing rod

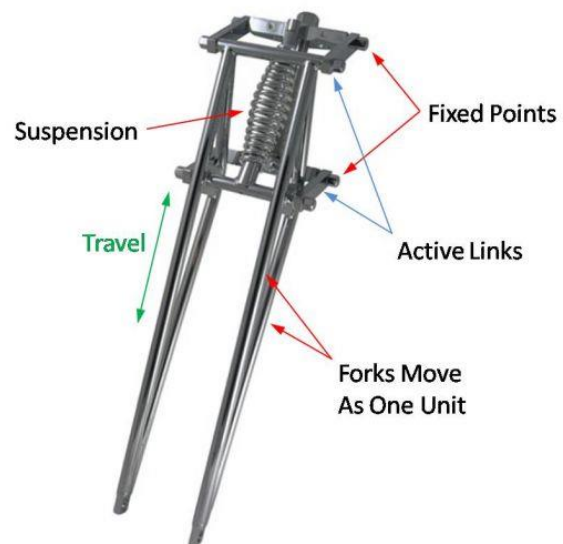
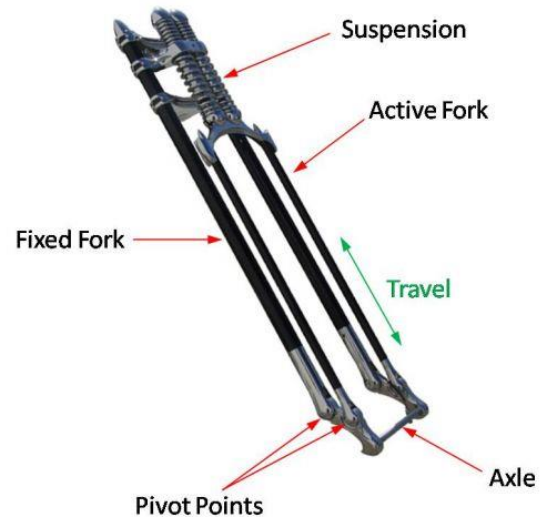
Research

Answer the following questions:

1. What is a “Chopper” motorcycle?
2. What is a “Bobber” motorcycle?
3. What type of front fork is shown to the right, and how does it work?

(I'll know pretty quick whether or not you actually have mad tyte Google skills....)

4. What type of front fork is shown to the right, and how does it work?
5. What is a “Hardtail”?
6. What is a “Softtail”?

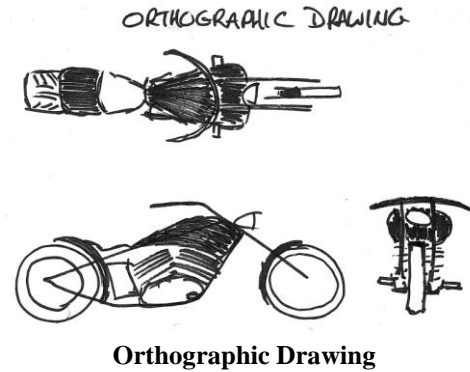


Brainstorm

- Sketch at least **6 DIFFERENT** chopper designs that you like.
^^^ Notice the bold, italics, caps, and underline.
- Try to keep the chopper very simple in design – too much detail makes it harder to complete and looks “cluttered”
- Try to have some “flow” through the frame: mechanical, yet “organic” in nature.
- A good bike is as much a sculpture as it is a vehicle. Submit for marking.

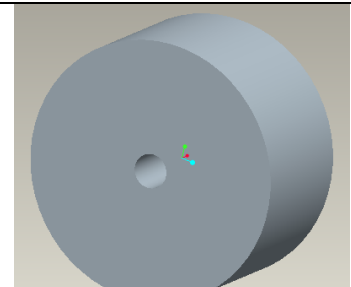
Working Drawings

- Take your best design that you sketched, and draw it FULL SIZE on a piece of 8.5 x 11" paper.
- SIDE view, TOP view, and FRONT view - all the views must line up as a proper Orthographic Drawing.

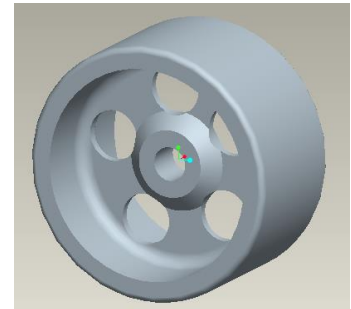


Fabrication

- Use your Working Drawing as a template to cut and shape 3/16" rod into frame tubes, and solid round or pipe for wheels
 - Finish the sides of the wheels on the lathe
 - Give the wheels some character – not just a boring slab.
- Try to make the frame with as few welds as possible – this will be both EASIER and FASTER
- BRAZING ONLY to join the parts.
 - Braze each connection to be joined separately, then melt the braze together
- GAS TANK gives the bike character – model yours in paper first; it's much easier (and cheaper) to make a paper template first, then trace a good template onto metal
- Engines are best made from old fasteners and scrap. Be creative!



BORING!



AWESOME!



Gas tank pattern

Don't Forget the Details!

- | | | |
|-----------|------------------|--------------|
| • Engine? | • Foot pegs? | • Headlight? |
| • Seat? | • Exhaust pipes? | • Fenders? |

Conclusion:

You are done when you have completed a uniquely designed and excellently fabricated model of a custom chopper.

Reflection:

What did you learn in this project that you did not already know? What do you love about your project? What would you do differently? Submit the project and your reflection in for marking.

