

Model Features & Assembly Demonstration

CUP.ipt - Loft Command

1. Use the XZ plane, start a new sketch and create a **2" x 2"** rectangle centered over the Origin. Finish the sketch.
2. Use the XZ plane and offset a "Work-Plane" **2.5"** (height of cup).
3. Create a sketch and draw a circle **1.75"** dia, centered over the Origin. Finish the sketch.
4. Use the XZ plane and offset a "Work-Plane" **5"** (total height of cup).
5. Create a sketch and draw a circle **3.5"** dia, centered over the Origin. Finish the sketch.
6. Now LOFT the bottom square to the middle circle and then to the top circle.

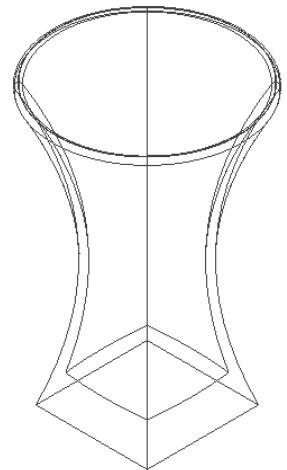


SHELL

7. Select the Shell command and then select the top of the cup. Set the thickness to **.125"**.
8. Now, edit the Shell base of the cup to be **.50"** thick. Change your view to wireframe to see the change.

FILLET

9. Fillet the top edges of the cup to **.06"**, use the loop option.



HANDLE for CUP – Sweep Command

10. Set the Origin to the **YZ** plane and offset a Work-plane **1.125"**.
11. Place a new sketch on the plane and then press function key **F7** to "**Slice Graphics**". This will remove material in front of the sketch.
12. Add a circle to the sketch, where the sketch cuts through the cup. Make the circle **.375"** dia and then finish the sketch.
13. Now create another Work-plane using the **XY** plane. Create a new sketch and use a drawing tool to create a path for the handle. Make sure the line path goes through the circle. (*Hint: use F7*) When done, finish the sketch.
14. Use the **Sweep** command and select the circle as the profile and the line as the path. It should preview the sweep object, if not it will not work. You will need to check one of the following: path intersection, size of the circle or the turn for the path is too sharp.

2nd HANDLE

15. Create a work plane on the **YZ** plane and set to zero.
16. Use the mirror command and select the handle using the work plane you just created as the axis.

IPROPERTIES

17. Change the material of the cup using iproperties, use the physical tab.
18. Don't forget to save!



CUP EXTRAS

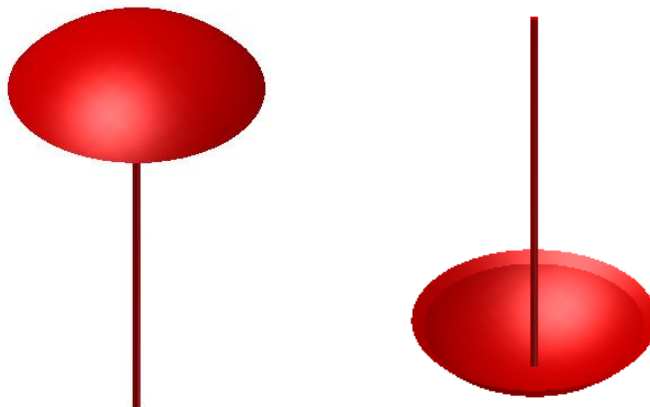
STRAW – COIL command

19. Start a new ipt and set the origin to **XY** plane. Place a sketch and draw a circle **.25"** dia and then offset the circle in **.02**. Now dimension **.25"** away from the origin.
20. Now "COIL" the circle around the **Y** axis.
21. Set the coil size to Revolution & Height. Height **6"**, Revolution **6**, Taper **4**.
22. Shell the straw if you want.



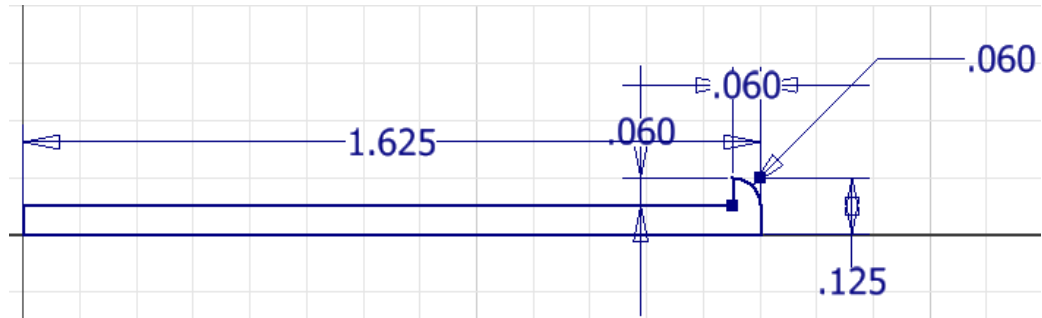
UMBRELLA – Revolve command

23. Start a new ipt and set the origin to **XY** plane. Place a sketch and draw a line for the stem of the umbrella: **7"** long, for the arc of the umbrella **2"** from the stem. Try using the line command to create the arc.
24. Offset the outline of the umbrella to **.06"**, don't forget to cap off the ends.
25. Revolve the profile, use the line for the stem as the axis.



COASTER

26. Start a new ipt, set the origin to **XY** plane and place a new sketch.
27. Draw a line from the origin **1.625** and **.06** for the thickness and the lip.
28. Now Revolve it. Don't forget to **SAVE!**



Work Drawing for the CUP

PARTS LIST		
ITEM	QTY	PART NUMBER
1	1	COASTER
2	1	CUP
3	1	STRAW
4	1	UMBRELLA

U:\HS\PLTW\11\HONOR\PROJECTS\TAFFI\proj_2\straw\3D\Drawings\Work\Drawings\11_121\cup_3 Proj\cup\CUP PLT.DWG (1) mm

	LINGANORE HIGH SCHOOL		SCALE :	11/30/2011	ASSIGNMENT GRADE
	DRAWN BY:				