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Creating Blended Surfaces: Two Case Studies

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SOLID EDGE UNIVERSITY 2014
Re-imagine What's Possible

#SEU14

Agenda



- Bottle
 - Approach
 - What makes it hard
 - How it was done
- Bobsled
 - Approach
 - What makes it hard
 - How it was done

Bottle: Approach

- Have some idea where you are going.
- Generally a volume target and an aesthetic target.



Bottle: Approach

- Break into “modeling zones”
- Helps identify requirements of geometry



Bottle: Approach

The Label area can only have curvature in one direction if you are using a paper label.



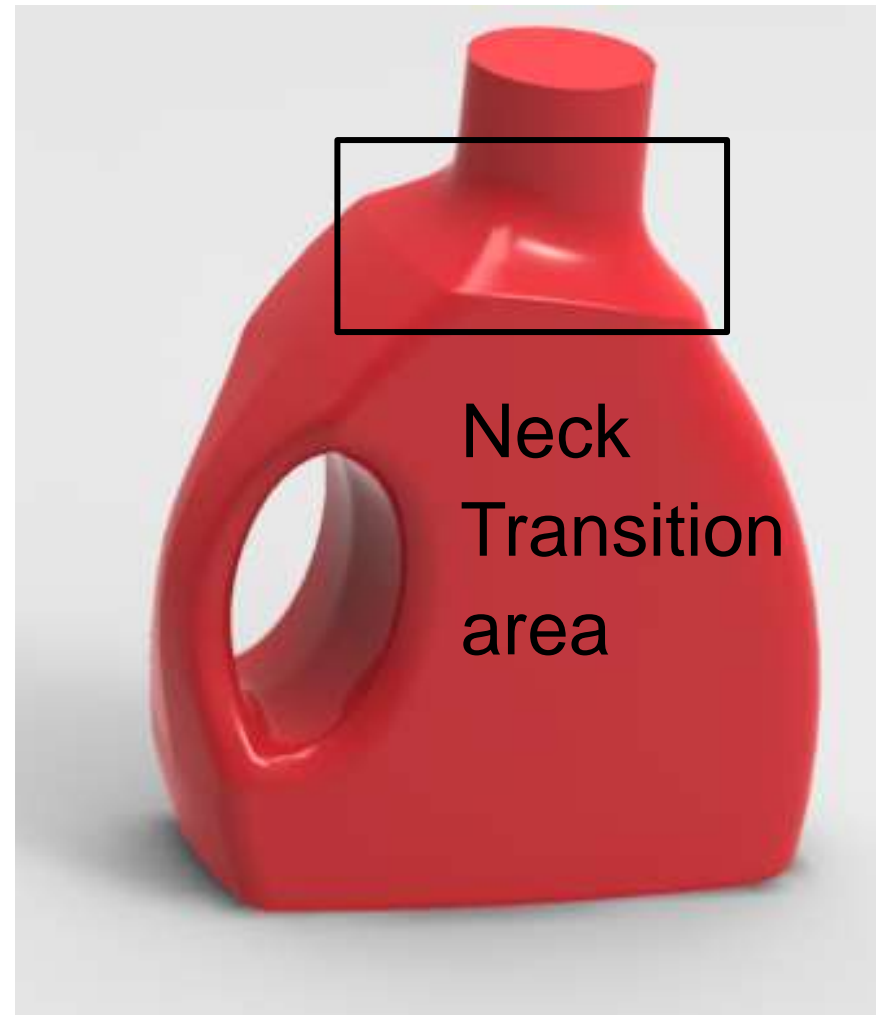
Bottle: Approach

- Draft can be difficult
- Especially around complex shapes



Bottle: Approach

- Transition from body to neck
- Works like a funnel
- Neck size and shape determined by engineering requirements for cap
- Body determined by industrial design factors
- Transition from rounded corner to cylinder can be harder than you think



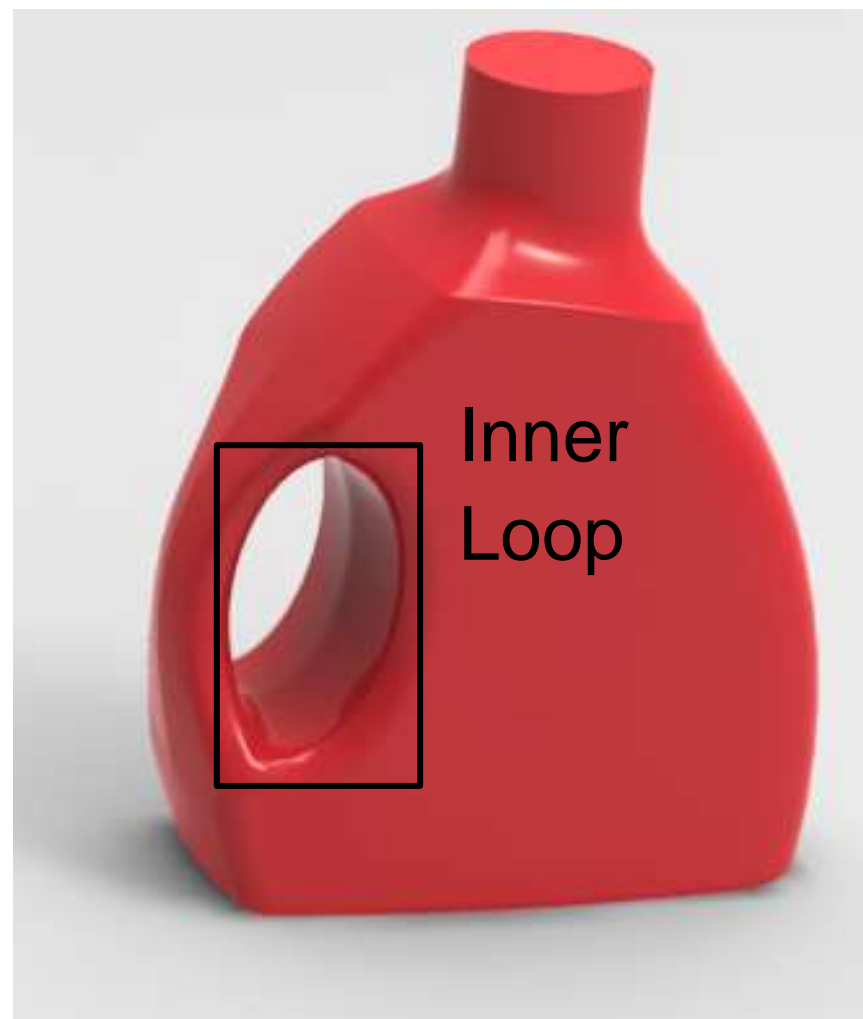
Bottle: Approach

- Handle consists of:
 - Outer face
 - Inner loop
 - Transition between
- Do it “all at once”
- Do it in pieces



Bottle: Approach

- Inner loop interacts with handle
- Can be made as separate feature

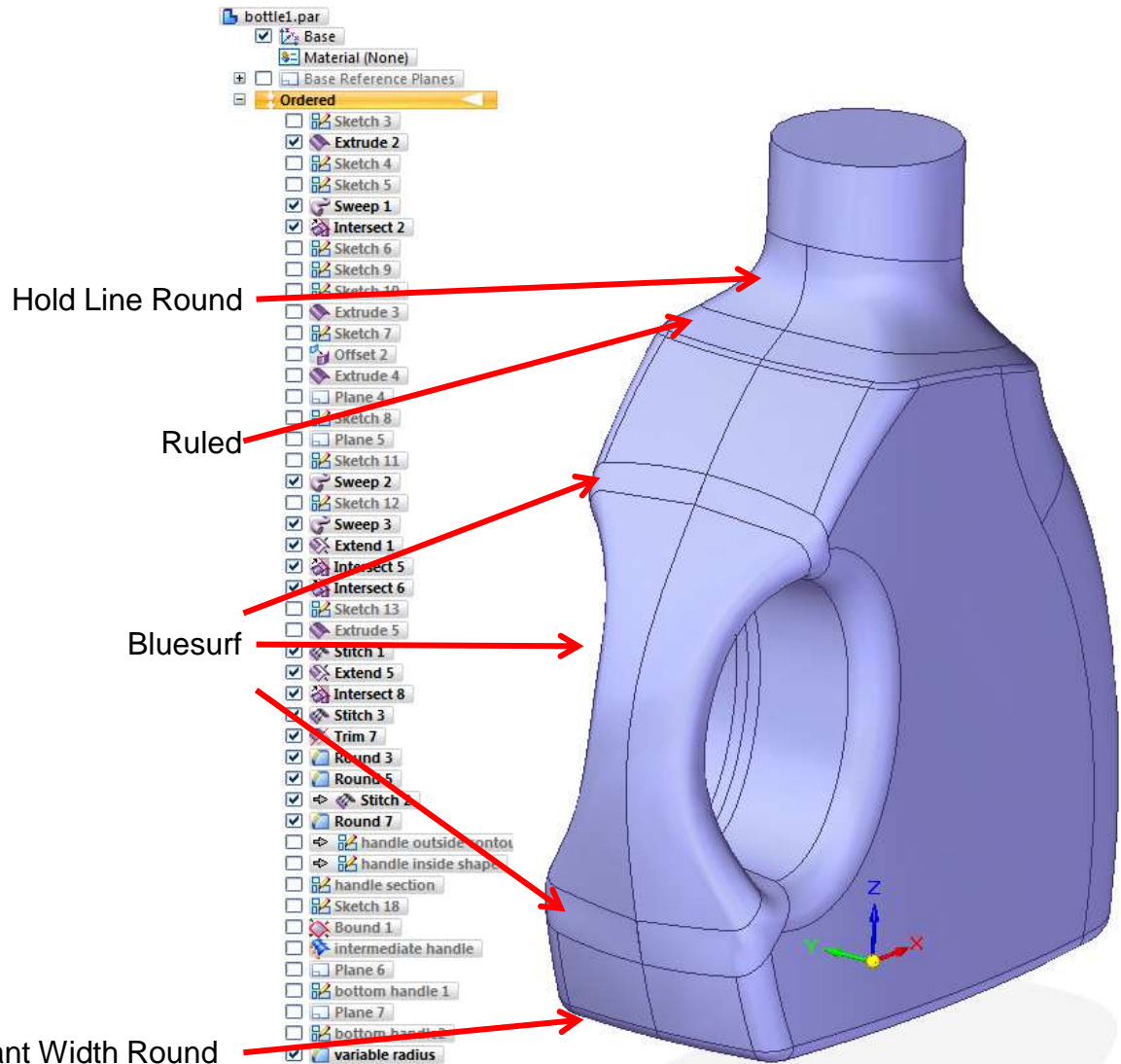


Bottle: Walkthrough

- Step through the features of the model to see how it was made.

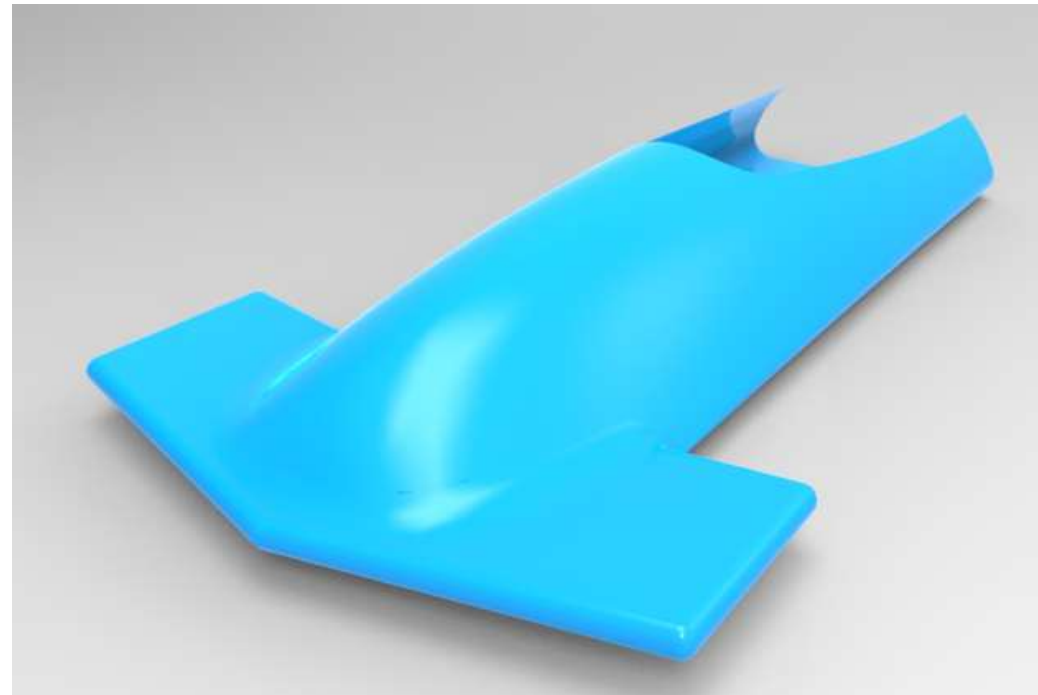
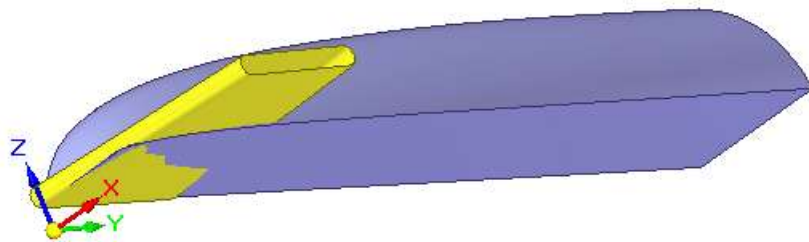
Highlights:

- No One Right Way
- Advanced Rounds
 - Hold line
 - Constant width
 - C2
- Ruled Surfaces Valuable
- Bluesurf for most things



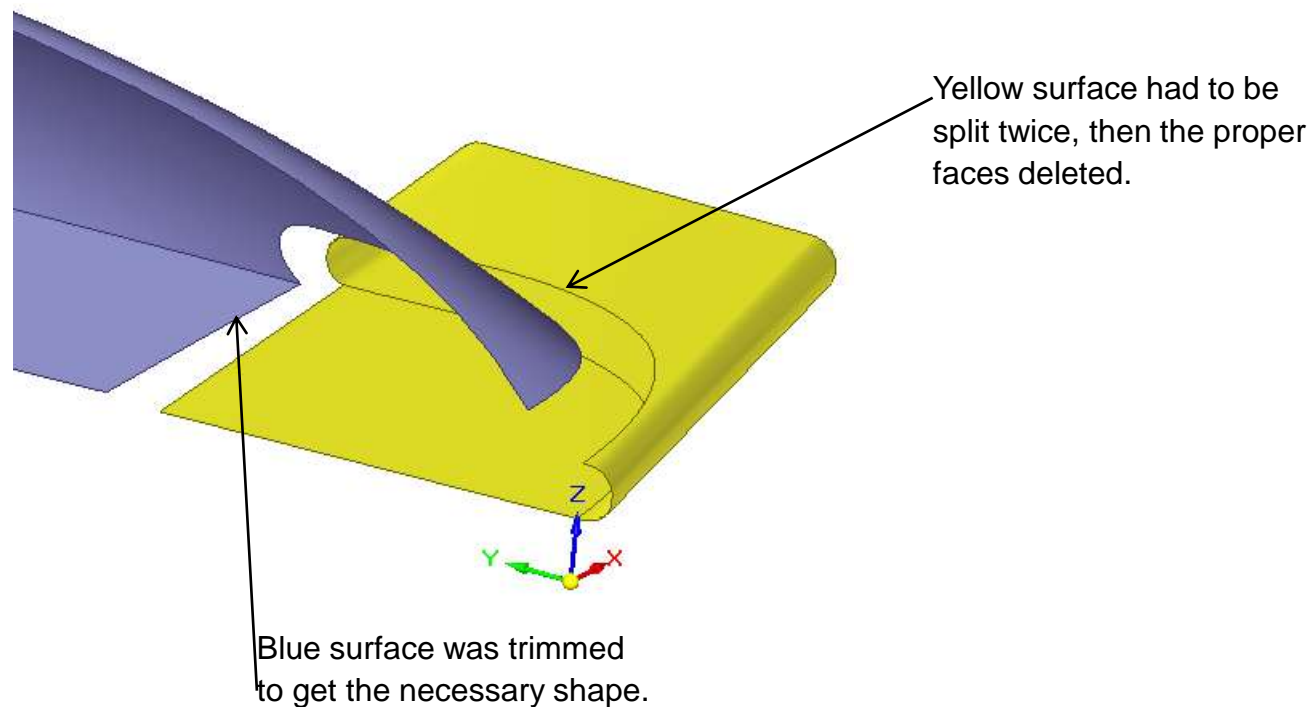
Bobsled

- Two basic features
 - Main Body
 - Wing



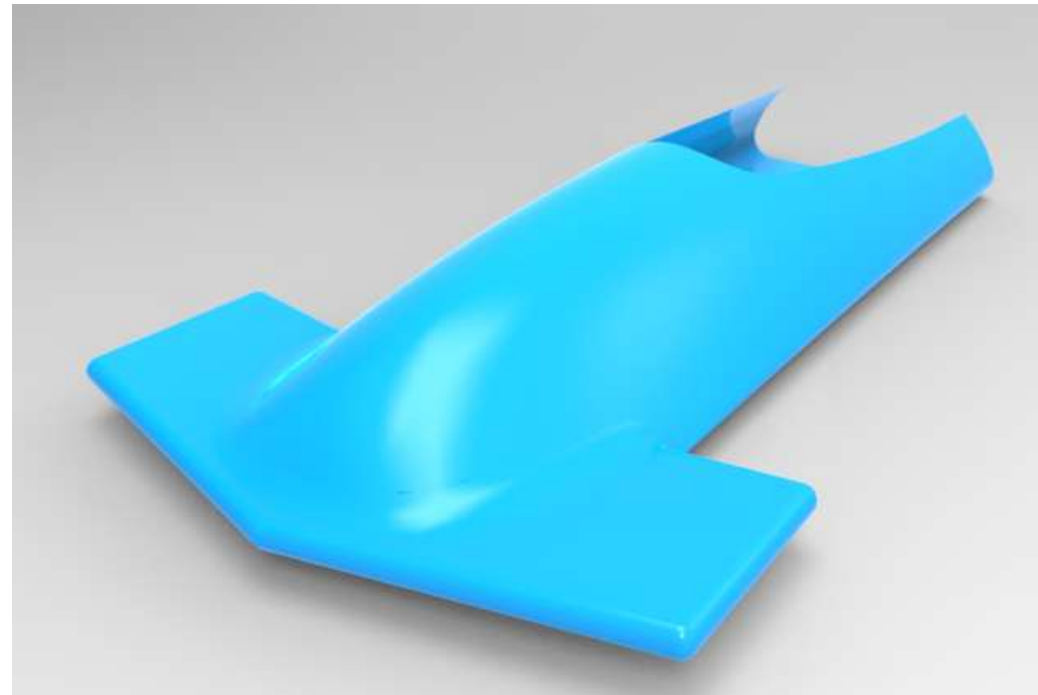
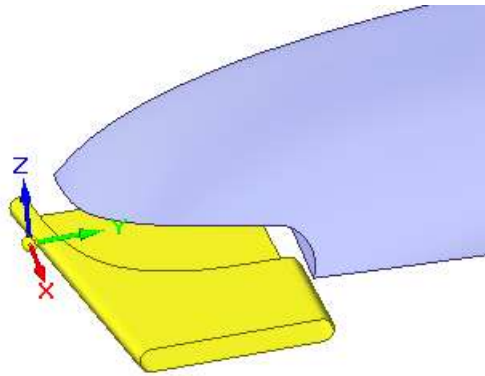
Bobsled

- Trim, Intersect and Split/Delete are tools to manually cut back the surface



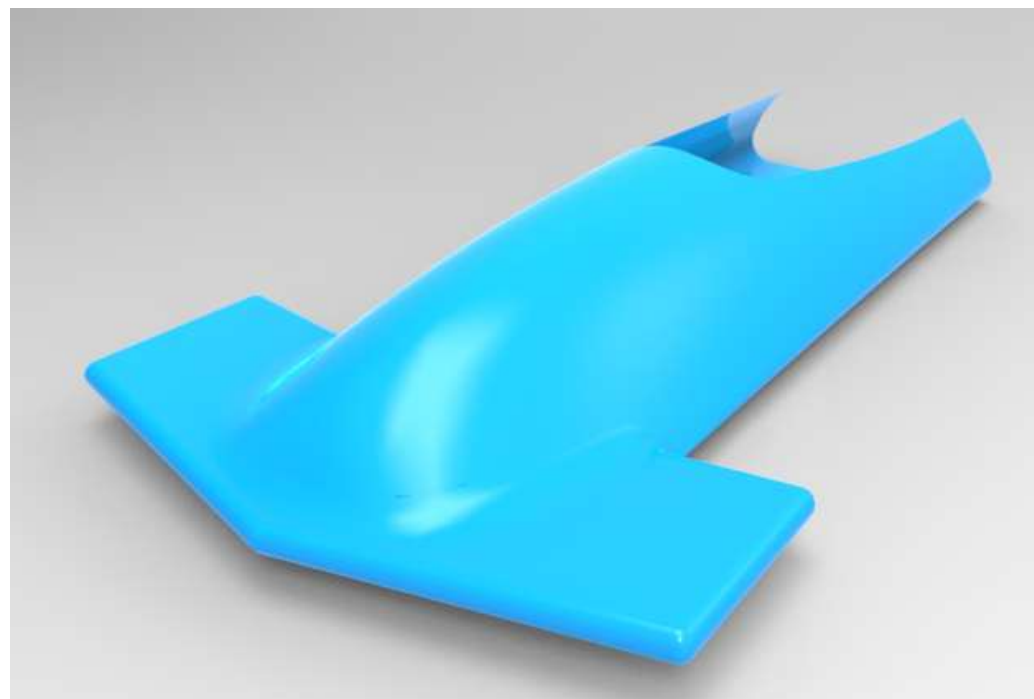
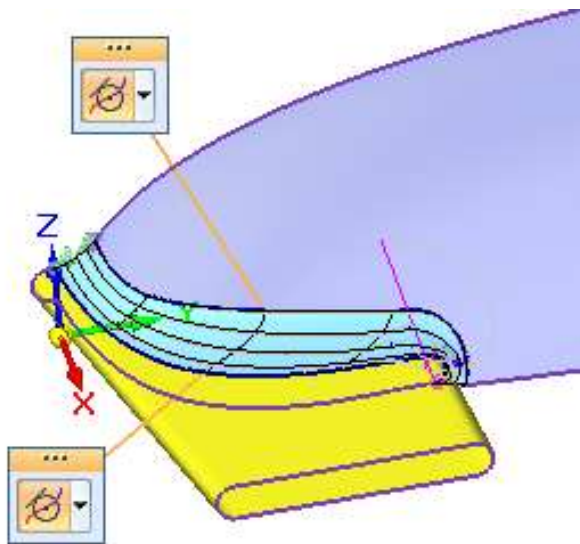
Bobsled

- Solid Edge calls surface bodies “constructions”
- Manual rounds between bodies done with Bluesurf



Bobsled

- Surface visualization helps you see the 2-directional “fabric” of the NURBS faces.

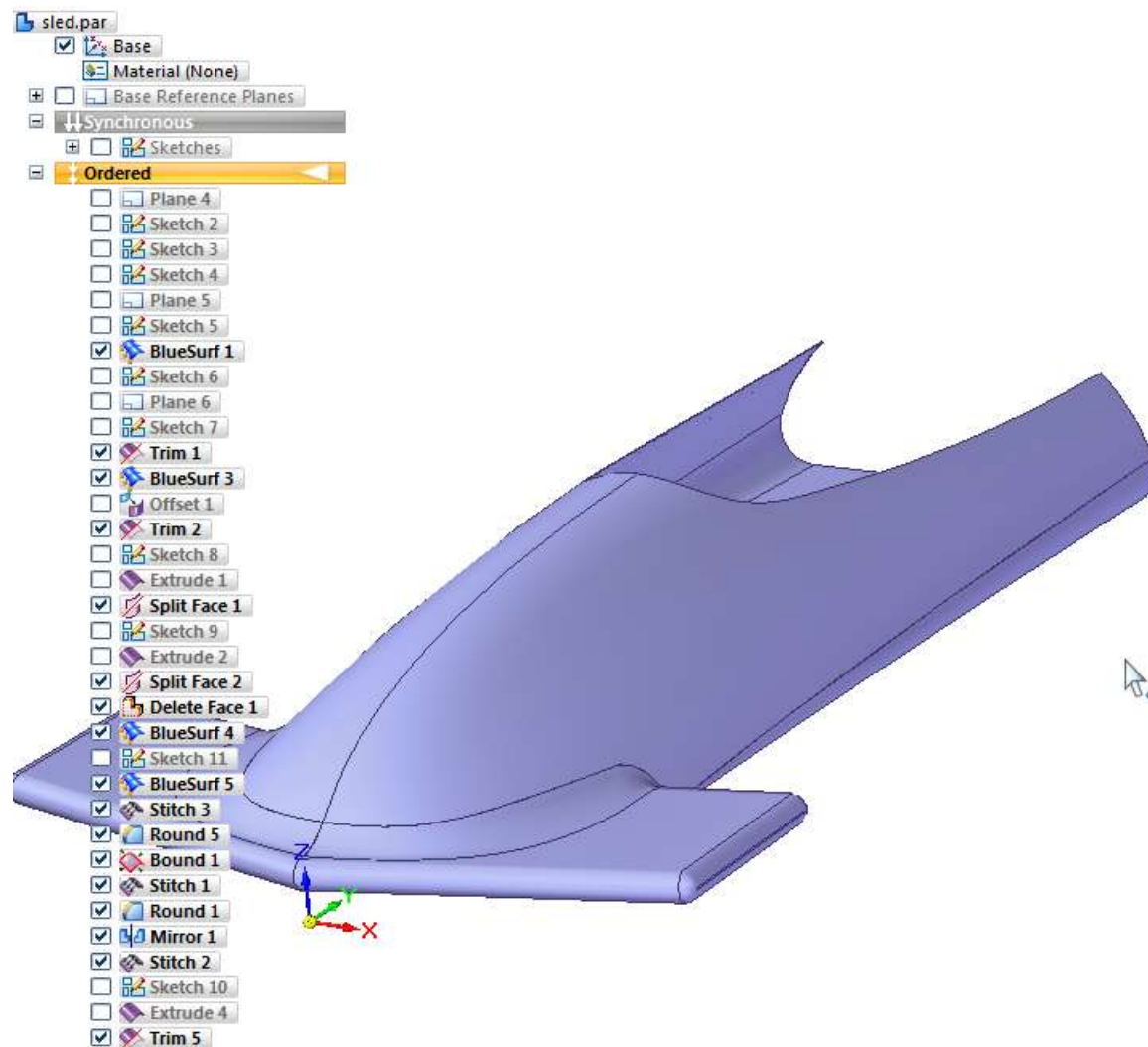


Bobsled: Walkthrough

- Walk through the Pathfinder to see how the sled was made.

Highlights:

- Loft to a Line
- Vertex Mapping
- Mirroring surface bodies
- Selecting surface bodies



Summary

- Work from some sort of reference
- Don't be too literal (overbuild surfaces)
- Use the fabric concept
 - Two-directional
 - Puckers
 - Wants to be 4-sided
 - Failure doesn't mean it won't work – just means you have to adjust something
- Realize that there are advanced options for Rounds
- You may have to try several methods to get the result you want

Contact info



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