1. Move sq around a la lev
   1. ~~Ctl wheel – bigger~~
   2. ~~Ctl shift - thicker~~
   3. ~~Alt wheel – spin~~
   4. ~~Shift mouse – move in plane~~
   5. ~~Shift wheel – deeper~~
   6. ~~Arrow + wheel: one sided bigger~~
      1. ~~2 arrows simultaneously – both sides bigger~~
   7. Double click on mesh inside cutter – if actor already selected, turn off pick for it then pick again then turn on pick: need to sort pick points and props since order not guaranteed
   8. Reset all selected meshes
   9. Plant then Carve then hinge as usual (check if 2 pieces)
   10. Delete planted
   11. ~~Smooth the normal change~~
   12. Ribbons (back and front) – n planes along right vector % of radius width
   13. Wedge controls
   14. Taper (in depth) to see caps better?
2. Incision mode (btnslice): scalpel
   1. Cuts meshes in 2 pieces (3 including sq intersection mesh)
      1. Visually indicate when has cut all way through
   2. ~~Ctl Wheel - bigger~~
   3. ~~Ctl shift wheel - thicker~~
   4. ~~Shift mouse – move in plane~~
   5. ~~Shift wheel – deeper~~
   6. Alt mouse - spin
   7. Can then hinge 2 pieces or make invisible (via select)
      1. Cut-through incision mode (hinge one of two pieces) i.e. are there 3 pieces or 2
      2. If 3 pieces, hinge the mesh not the sq piece – or hinge what is selected
      3. Connectivity filter see example on desktop
   8. Custom mesh contains parent mesh link
      1. If no parent, then not a piece
      2. Visibility/pickability of parent turned off
      3. To delete custom mesh piece:
         1. Remove its actor etc.,
         2. turn parent back on
         3. remove its incision element
         4. remove it from custom mesh

* 1. Contains links to elems
  2. Contains link to original

1. Select mode
   1. See sketchup, powerpoint, blender etc
   2. ~~Double click – select whole mesh~~
   3. Stretch sq (see incision, same interface) selects piece
   4. Lens paint: select multiple
   5. Make translucent inside cutter
   6. Highlighter tool?
   7. How to highlight
2. Hinge: omit? Just use ring
3. Rod
   1. ~~Rod tooltip: Make opaque, no cutaway~~
   2. When create, make proper dimensions for slected mesh bounding box
   3. When sliding mesh, show rod. When done sliding mesh turn off rod?
   4. Alt mouse and alt wheel should alter rotation about right and forward
   5. Order of rod w.r.t. other rods and rings
   6. Bend?
4. Ring:
   1. ~~Flipped – apply a rotation around right axis (variables and code in shaders)~~
   2. ~~Alt wheel - spins it~~
   3. ~~Ctl wheel – bigger/smaller~~
   4. ~~Shift mouse – move in plane~~
   5. ~~Shift wheel – deeper~~
   6. ~~Arrow wheel – one sided~~
   7. ~~select multiple meshes (see select mode)~~
   8. When create, make proper dimensions, theta/phi for selected mesh bounding box
   9. Plant torus once positioned
   10. Delete planted torus
   11. Order of ring w.r.t. other rods/rings
   12. bend ?
5. Miscellaneous
   1. ~~Add meshes (artery, bone etc)~~
   2. Artery, veins, ligaments, muscles, etc subsystems coloring, transparency sliders
      1. Alter mtl file diffuse color (see anatomy textbook)
   3. ~~Multiple meshes selected and proper capping (half of heart)~~
   4. Check lighting of caps, color of caps
   5. Display icons steel cutter, hinge, rod, ring, knife
      1. Need picture of ring, rod, cutter, select
      2. When press, indicator
   6. Render caps better (edges? Edge shading? Texture?)
   7. Add label tooltip (3d text)?
6. Subsystems for experiments for thesis and for user study:
   1. For each subsystem, gather obj and mtl into one file
   2. Thorax organ systems
   3. Heart?
   4. forearm complete
   5. brain
      1. skull problem
   6. jaw?
   7. Hand?
   8. see siggraph