Laser Cutting Workshop

1. Install Inkscape
2. Examples of Laser cutting
   1. Images
   2. Physical
3. Options of things to make in the Workshop
   1. Fridge Magnet
   2. Pin/Booch
4. Step 1: Make a Design
   1. Or search for an image
      1. Google Image search
      2. Black and White
      3. Silhouette
   2. Copy in the image
      1. Open image in new tab -> Copy -> Paste
5. Step 2: Vectorise
   1. Select image
   2. Path -> Trace Bitmap
   3. Turn on Live Preview
   4. Adjust Brightness cutoff
   5. Ok -> Close window
   6. Drag apart, select original and delete
6. Step 3: Modify
   1. Colours
      1. Black = engrave
      2. Red = Cut
      3. Can use other colours, but need to set colour based on Trotec software
      4. Click colour for fill
      5. Shift click for stroke colour
   2. Ctrl+Shift+D = Document properties
   3. Ctrl+Shift+M = Transform
      1. Scale -> mm -> Scale Proportionally
   4. Draw outline if complex engrave
      1. Beziers/freehand
   5. Manual larger using align
      1. Clear fill, red stroke
      2. Ctrl+Shift+A = Align
      3. Select the 2 objects and centre
      4. Doesn’t always work
   6. Show Inset/outset (Ctrl+J)
      1. Edit->Preferences->Behaviour->Steps->Inset/Outset by (0.01mm)
7. Step 3: Tidy
   1. Look for orphan bits
   2. Edit path nodes, select and delete
   3. May need to do Path->object to path -> Ctrl+Shift+K to break apart
8. Step 4: Lasers
   1. For most materials, there are presets that work well.
   2. For other materials, trial and error is the best option.
      1. Make little black fill, red stroke squares to test engraving and cutting
   3. Don’t cut
      1. Metal
      2. Anything with Chlorine
      3. Anything Shiny
   4. Sean gives induction for equipment
9. Solidworks examples
10. Laser Cutter
    1. Inkscape -> Print -> Trotec Settings
    2. Turn on Laser cutter using key
    3. Connect USB button in Trotec software
    4. Put the material in
    5. Focus
    6. Add design to plate in Trotec software
    7. Double check positioning
    8. Press Play on software
    9. Press play on the laser cutter for repeat jobs
    10. Clean the lens using the special wipes and liquid.
    11. Clean the rest using vacuum cleaner for big bits, and wiping over with baby wipe for dust etc.