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00 Notes and Instructions to Accompany Vectorworks Tutorials

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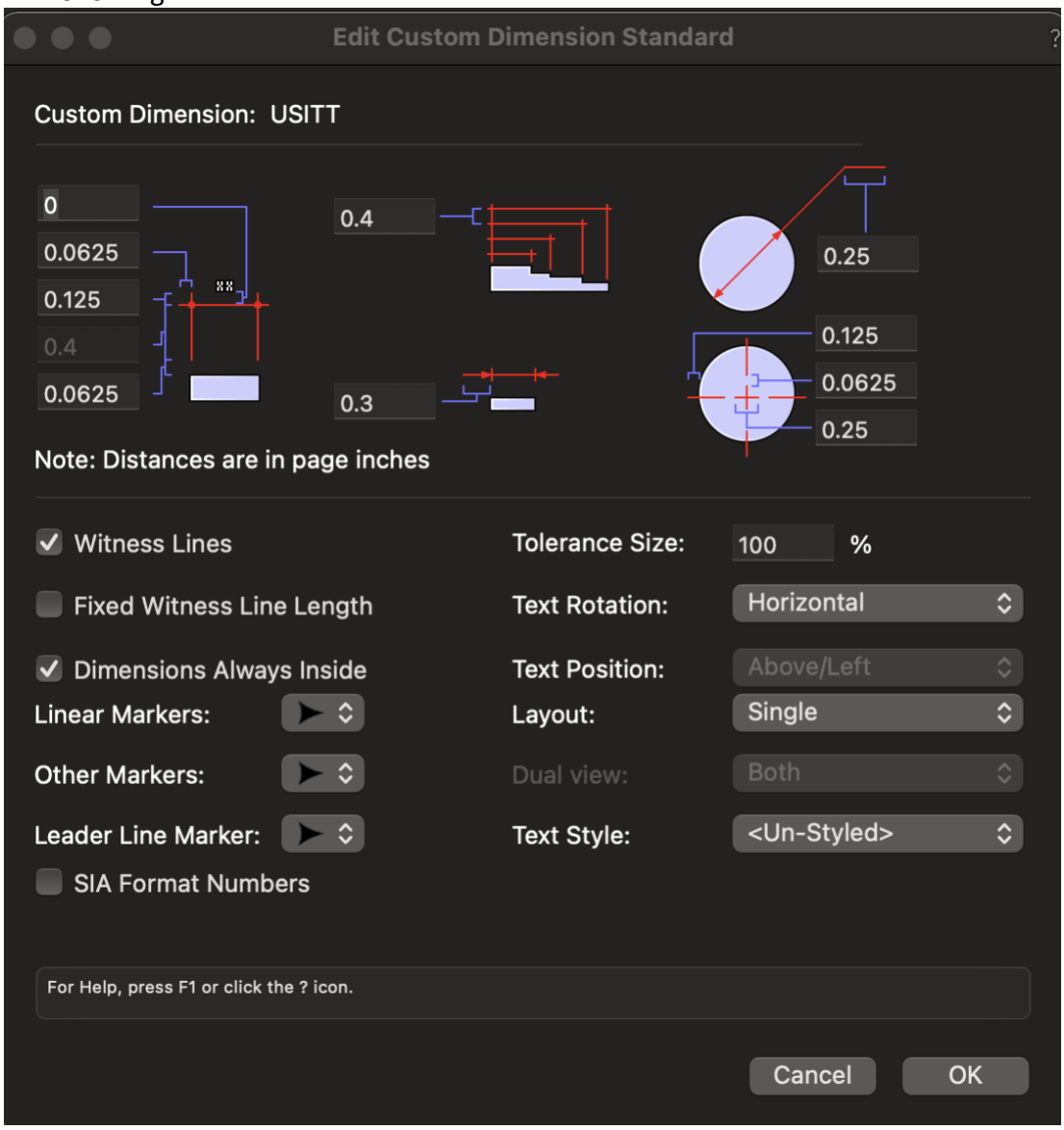
First, download and install the student version of the software:

1. Open a web browser on the laptop or desktop machine on which you'll be installing the software. Vectorworks does not have a fully functional mobile app.
2. Navigate to https://www.vectorworks.net/en-US and click the LOG IN drop-down menu near the top right corner of the screen.
3. In the menu that appears, click STUDENT PORTAL. You will be taken to a sign in page. If you've already created an account, sign in with your credentials. If not, click the CREATE AN ACCOUNT link below the Sign In and Continue buttons.
4. Enter the requested information in the web form that appears.
5. Once your account is created, you should see the following options appear on a new webpage: REQUEST A NEW LICENSE, CLAIM A LICENSE…, and FREQUENTLY ASKED QUESTIONS. Assuming your account is new and you have not previously downloaded Vectorworks onto your machine, click REQUEST A NEW LICENSE and provide the requested information.
6. Typically, you will be allowed to download Vectorworks immediately as a 30-day free trial. Keep an eye on your email account for your serial number for your educational/student version, which will allow you to use the software free for a year.
7. When you receive your license, open Vectorworks and enter your license when requested.

Video 1: Setting and saving preferences

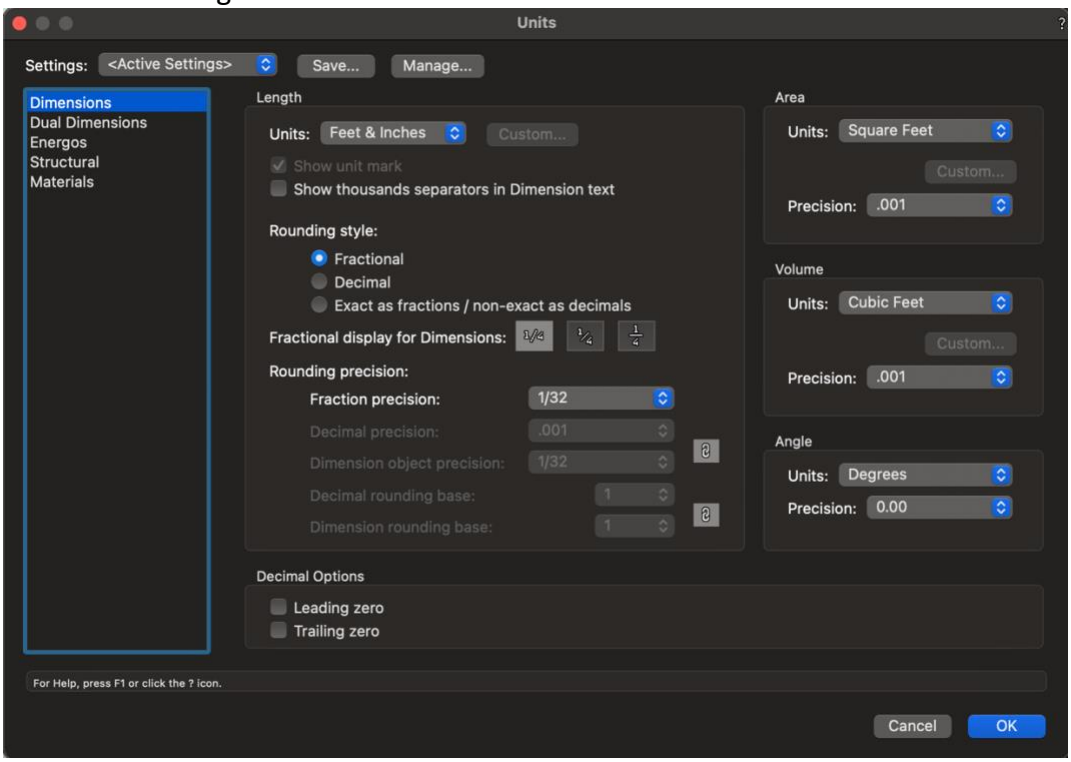
1. Open Vectorworks.
2. Open the VECTORWORKS drop-down menu and click PREFERENCES. (Or, open TOOLS>>OPTIONS>>VECTORWORKS PREFERENCES.
3. In the floating dialogue box that appears, select EDIT from the list on the left.
4. Make sure that the following radio boxes are ***checked***:
    a. *Display eight reshape handles*
    b. *Auto-join walls*
    c. *Separate sheet views*
    d. *Enable mouse wheel zooms*
5. Make sure that the following radio boxes are ***unchecked***:
    a. *Enable click-drag drawing*
    b. *Offset duplications*
6. Select DISPLAY from the list on the left, and make sure that *Show rulers* is ***checked***. Optionally, check *Use dark background* if you prefer to draw on a black background instead of white.
7. Select AUTOSAVE from the list on the left, and make adjustments to autosave timing, number of backups, and backup locations as needed/desired.
8. Select SMART OPTIONS DISPLAY from the list on the left, and uncheck the radio button next to *Use Smart Options Display*.
9. Click OK when done.

10. Back on the Vectorworks main screen, open the FILE drop-down menu and click DOCUMENT SETTINGS>>DOCUMENT PREFERENCES.
11. Select the DIMENSIONS Tab, and ensure that USITT is the selected *Dimension Standard* from the dropdown menu. If USITT is not an option, follow these steps:
    a. Click New…
    b. Name the standard USITT, and click OK.
    c. Making sure that USITT is highlighted, click Edit…, and match ***all settings*** to the following:



    d. Click OK and OK once more to return to the floating DOCUMENT PREFERENCES menu.
    e. Select USITT as the *Dimension Standard* from the dropdown menu.
12. Click OK.
13. Back on the Vectorworks main screen, open the FILE drop-down menu and click DOCUMENT SETTINGS>>UNITS.

14. Select DIMENSIONS from the list on the left of the floating dialogue window.
15. Match the settings to those seen below:



16. Click Save…, and save these settings as THEA Preset for easy retrieval in future documents.
17. Ensure that THEA Preset is selected in the SETTINGS drop-down menu, and click OK to return to the document.
18. Back on the Vectorworks main screen, open the FILE drop-down menu and click SAVE AS TEMPLATE….
19. On the floating dialogue box that appears, ensure that the file name is Default (with a capital D) and the File Type is Vectorworks Templates (*.sta).
20. Click SAVE to save this file as a template to use as a starting point for all future Vectorworks files. (Note that we will continue to build on and modify the *Default.sta* file in subsequent videos.)

Video 2: Understanding and navigating the main screen

- Toolbars
  - Main Toolbar (customizable)
  - Tool Data Bar
- Workspaces
  - Spotlight
  - Ability to customize
- Palettes (customizable)
  - Basic Tools
  - Tool Sets

  - Object Info – shape, size, orientation of selected objects
  - Navigation – more below
  - Attributes (floating)
  - Snapping (floating)
  - Resource Browser (close until you need it)
  - WINDOW>>PALETTES

Video 2b: Tool demos/discussion (know these tools)

- Selection Tool
- Pan Tool
- Zoom Tool
- Single Line Tool
- Double Line Tool
- Rectangle Tool
- Rounded Rectangle Tool
- Circle Tool
- Oval Tool
- Arc/Quarter Arc Tool
- Freehand Tool
- Polyline Tool
- 2D Polygon Tool
- Double-Line Polygon Tool
- Regular Polygon Tool
- Select Similar Tool
- Reshape Tool
- Rotate Tool
- Mirror Tool
- Split Tool
- Connect/Combine Tool
- Fillet Tool (highly specific arc between two objects, with each arc endpoint tangent to one of the objects)
- Chamfer Tool (symmetrical sloping edge)
- Offset Tool
- Move by Points Tool
- Dimensioning Tools
  - Constrained Linear Dimension
  - Unconstrained Linear Dimension
  - Angular Dimension
  - Arc Length Dimension
  - Radial Dimension
- Measuring Tools
  - Tape Measure

    - Protractor

Tool Sets:

- Event Design
    - Soft Goods
- Building Shell
    - Wall
    - Door
    - Window
- 3D Modeling
    - 3D Polygon
    - Sphere
    - Hemisphere
    - Cone
    - Fillet Edge
    - Chamfer Edge

Videos 3-5: The Navigation palette

- Design Layers
    - Akin to a physical model space—the space we build and design objects
    - Ability to separate different groups of information into different design layers, which are independently controllable
        - Architecture
        - Scenery
        - Lighting/light plot
    - Can be assigned any scale without affecting subsequent drawings
    - Use a scale that makes sense to you and that easily coordinates with the scale you'll eventually use in drawings
    - Not everything drawn or built here will necessarily end up on paper
    - You can print directly from this space, but Sheet Layers are recommended for more precise views and annotation
    - Users can choose to see a page, gridlines, both, or neither (FILE>>PAGE SETUP for page view; toggle SHOW/HIDE GRID on Data Bar)
    - Independent control of color, opacity, selection, and visibility
- Classes
    - A means of separating objects on the same Design Layer into subgroups
    - Allows fine control over what objects are printed or included on specific views/sheets/drawings
    - Some classes are automatically created depending on the types of objects inserted into drawings
    - Typically, classes are user-created and reflect the specific objects or types of objects drawn on a show-by-show basis
    - Independent control of color, opacity, selection, and visibility
- Sheet Layers

    - A preview of what will print
    - A space to place Viewports (multiple Viewports or views of a single object or multiple views of multiple objects may be arranged on a Sheet Layer)
    - Sheet layers are not drawing spaces. The only objects that are directly drawn or placed on Sheet Layers are title blocks, sheet borders, and Viewport
- Viewports
    - A window providing a set view, projection, and rendering of drawn objects
    - Classes and Layers may be made visible or invisible on a Viewport by Viewport basis
    - Viewports are how each element of each designed object or area is communicated to members of the production team
    - Understanding Viewports and Sheet Layers is essential for using Vectorworks to communicate design ideas and construction plans

Video 6: Creating & Viewing a 3D Object on the Design Layer:

- Converting a 2D object into a 3D object:
    1. Creating a 2D polygon or similarly enclosed object.
    2. Select the object you wish to convert from 2D to 3D.
    3. Open MODEL>>EXTRUDE or use CMD+M (CTRL+M on PC) on the keyboard.
    4. Enter the desired object height in the floating dialogue box that appears.
    5. Hit OK to confirm.
    6. With the object selected, note overall size in the SHAPE tab in the OBJECT INFO PALETTE. Make any adjustments to confirm the object's overall shape.
    7. Adjust the object's Bottom Z (BOT Z) position if necessary.
- Adding and Subtracting Surface:
    1. Shift+select or use the select tool to marquee select all 2D objects you wish to add together, making sure each object touches or overlaps at least one of the objects you are trying to join.
    2. Open MODIFY>>ADD SURFACE.
    3. Ensure that the objects are connected as you intended. (CMD+Z or CTRL+Z to undo.)
- Adding and Subtracting Solids (3D objects):
    1. Shift+select or use the select tool to marquee select all 3D objects you wish to add together, making sure each object touches or overlaps at least one of the objects you are trying to join.
    2. Open MODEL>>ADD SOLIDS.
    3. Ensure that the objects are connected as you intended. (CMD+Z or CTRL+Z to undo.)
- 3D Flyover Tool
- Setting & Saving Views:
    1. Create the view you'd like to save.
        - Double check that the object(s) can be seen from the desired view.
        - Select the desired projection. (Orthogonal, Perspective, Cavalier/Cabinet)

   - Select the desired rendering mode. (OpenGL, Renderworks, Hidden Line, Dashed Hidden Line, etc.)
   - Ensure that the object(s) are framed as you'd like them to appear in the saved view.
2. On the TOOLBAR, click the SAVED VIEWS icon.
3. Select SAVE VIEW from the drop-down menu.
4. In the floating dialogue box that appears, name the view and select the aspects of the window you'd like to save.
   - By default, all options are selected.
   - If Show Page Boundary is selected in Page Setup, de-select Save Page Location.
   - Adjust Layer and Class visibilities as/if needed.
5. Click OK.
6. Click the SAVED VIEWS icon to check that the view saved correctly.

Video 7: Creating & Laying Out a Drawing on the Sheet Layer

1. With no objects selected on the Design Layer, click the LAYERS icon in the TOOLBAR.
2. In the floating ORGANIZATION dialogue box that appears, click on the SHEET LAYERS tab.
3. At the bottom of the window, click NEW…
4. Assign the sheet a number and a name. (You can edit these later if necessary.)
5. Make sure that the EDIT PROPERTIES AFTER CREATION radio button is ***not checked***.
6. Click OK to return to the SHEET LAYERS tab. Repeat as necessary to create additional sheets or continue to create VIEWPORTS.
7. From the ORGANIZATION dialogue box, click on the VIEWPORTS tab.
8. At the bottom of the window, click NEW…
9. In the floating CREATE VIEWPORT dialogue box that appears adjust the following:
   - In the lefthand GENERAL SETTINGS column, ensure that the NAME VIEWPORT… radio button is ***checked***.
   - Ensure that the CREATE DRAWING LABEL radio button is ***unchecked***.
   - Select the sheet layer you want the viewport to appear on in the CREATE ON LAYER drop-down menu.
   - Name the drawing.
   - Click the LAYERS… button to select the layer(s) you wish to be visible in the viewport. Click OK… when complete. (At least one layer must be selected.)
   - Click the CLASSES… button to select the class(es) you wish to be visible in the viewport. Click OK… when complete. (At least one class must be selected.)
   - In the righthand DISPLAY SETTINGS column, select the VIEW, RENDERING, and PROJECTION settings from the appropriate drop-down menus.
   - Click OK.
10. The floating window should disappear, and the newly created viewport should appear in the floating ORGANIZATION window.
11. If corrections or adjustments to the viewport settings need to made after creation, open the ORGANIZATION window, select the VIEWPORTS tab, highlight the appropriate

viewport in the list, and click EDIT… to open the viewport PROPERTIES window. Adjust as needed and click OK to return to the ORGANIZATION window.

12. Create additional viewports as needed, clicking OK to save and/or return to the main Vectorworks window, noting that the window now displays the last sheet layer created.
13. Viewports may be arranged on the page by dragging and placing as needed.
    - By default, viewports are stacked on top of one another and may be difficult to see.
    - Before finalizing the arrangement of viewports on the Sheet Layer, scatter them to make them easier to see, annotate, and crop.
14. To annotate or crop viewports, double-click the desired viewport (making sure no viewports are selected), and select the appropriate option in the floating dialogue box.
    - ANNOTATIONS may be added by using the CONSTRAINED LINEAR DIMENSION TOOL (N) and/or the UNCONSTRAINED LINEAR DIMENSION TOOL. Click the orange box on the top right corner of the window to exit when complete.
    - To CROP the viewport window, simply select the desired polygon tool from the BASIC palette (often the RECTANGLE tool), and draw a border around the object(s) you wish to see. Cropping should be tight, but must not overlap or snap to the object(s).
15. Once viewports have been arranged on the page as needed and all cropping and annotations complete, select DIMS/NOTES tool set from the TOOL SETS palette.
16. Click on the TITLE BLOCK BORDER tool and select the appropriate title block for your project.
17. Use the GENERAL NOTES tool in the DIMS/NOTES tool set to add any notes to the page.
18. Use the CALLOUT tool in the BASIC palette to add any local notes to the page. (You may also use this tool to annotate individual viewports.)
19. Once the arrangement of the viewports and title block/border have been confirmed once again, use FILE>>EXPORT>>EXPORT PDF to open the EXPORT PDF dialogue box.
20. Adjust the resolution as needed and click the EXPORT button at the bottom of the box. Save as desired.

Creating a Title Block in Vectorworks

Drawing Scenery with Vectorworks

Drawing a Light Plot with Vectorworks