**Youth Explore Trades Skills Design and Drafting – 2D Drawing**

# Fill In Your Title Block, Including Scale

**(Mechanical and Architectural CAD)**

## Description

In this activity students will fill in a title block, including Name, Date, Title, Drawing No., and the correct scale. This basic activity will include Snap and Text commands.

## Lesson Objectives

The student will be able to:

* Enter text into a title block to identify who drew it, when it was drawn, the scale of the drawing, and if there is more than one drawing of the object.
* Change the snap setting to enable text to align.
* Scale a border. When you scale a border to fit around an object that you have drawn, you must enter the correct scale in the title block so if people measure directly off your drawing after it has been printed, they know the scale they are working with.

## Assumptions

The student will:

* Understand how to use the Scale command
* Be comfortable using CAD software
* Have previously completed the Dimension an Orthographic Drawing activity

## Terminology

**Basepoint**: the selected point on an entity or object used when moving, copying, scaling, etc., the object.

**Grip**: the small blue square that appears when you select or highlight an object or entity. Once you have selected a grip, you can move or modify that object.

**Move**: a command to move an object a specified distance and direction from where it currently is on a drawing.

**Object Snap (Osnap)**: a mode that allows you to “snap” to an object (line) at its endpoint, midpoint, etc.

**Scale**: a command used to proportionally resize objects; the multiplying factor by which you make an object larger or smaller.

**Snap**: used to limit your movement of the crosshairs of the cursor to a predetermined interval to aid in drawing to specific measurements.



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**Text**: a command used to add text to a drawing.

**Zoom**: a command used to magnify or change the view of a drawing.

## Estimated Time

15–30 minutes

## Recommended Number of Students

20, based on *BC Technology Educators’ Best Practice Guide*

## Facilities

Computer lab installed with CAD software (Google SketchUp, AutoCAD, CADopia, etc.)

## Tools

Projector with computer and speakers, Internet access

## Materials

Handout for students with instructions

## Resources

Instructional video for teacher and students to follow:

* + 9.1 Filling in Your Title Block

## Teacher-led Activity

Use a computer with a projector to demonstrate how to:

* + Change Snap
  + Turn Osnap On/Off
  + Use Zoom command
  + Enter text
  + Move text
  + Modify text size, width factor in properties

## Student Activity

Students will follow the Student Activity “Filling in a Title Block” and/or the video tutorial to fill in their own title block. This will include scale.

## Assessment

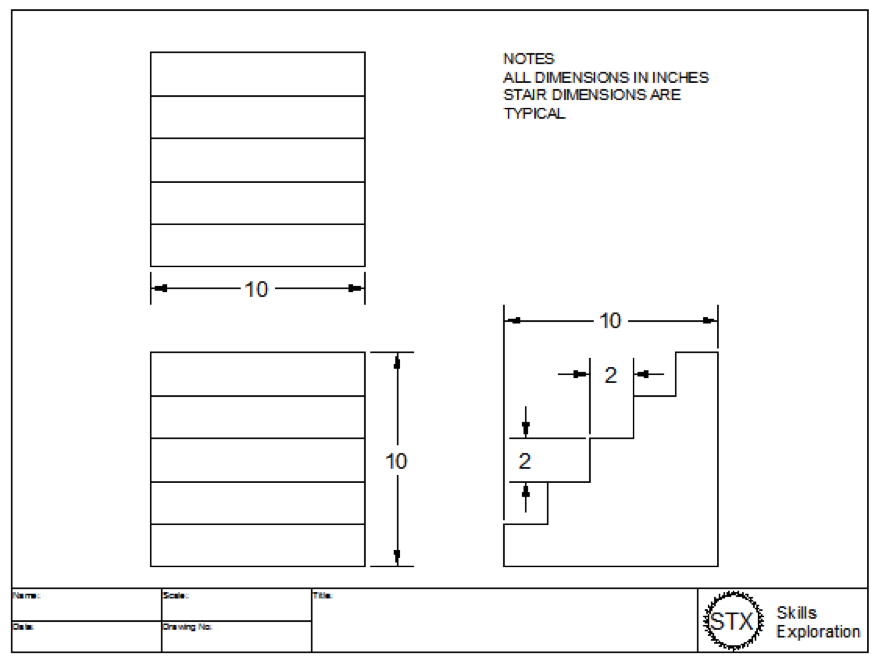
Students will show the teacher their completed assignments. The teacher can have the assignment printed out or look at it on the computer screen. If the student does not produce exactly what was shown, then an associated mark based on mistakes can be derived.

# Student Activity: Filling in a Title Block

To complete this activity you must have already completed the Dimension an Orthographic Drawing activity. In this activity you will learn how to add text to a title block and move it into position. A video is provided to accompany the lesson.

## Procedure

1. Open the drawing you completed for Activity 8, “Dimension an Orthographic Drawing.” It should look like Figure 1 below. (**Note**: layer colours have been removed for clarity.)

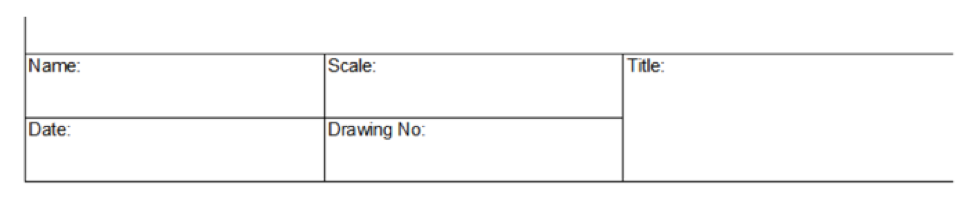


**Figure 1**

1. Zoom in to the title block so you can see what you are doing better (in the previous activity you scaled up the border four times to allow it to fit around the drawing.)

Command: **ZOOM**, then **WINDOW** to get a view similar to Figure 2.

1. Change your Snap to **.125** so you are able to centre the text within each section of the title block.

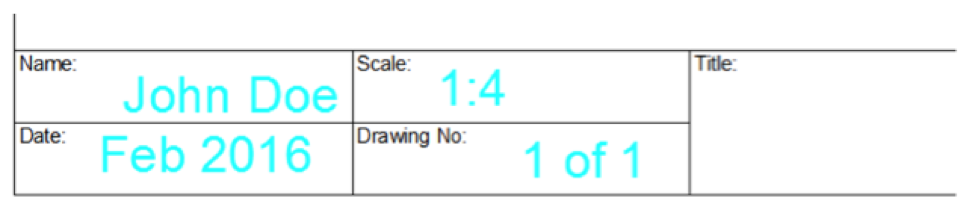


**Figure 2**

1. Make sure your current layer is set to Text.
2. Do you want Osnap on or off? Having Osnap on and getting too close to a line will make the text start where you might not want it, so it’s probably best to turn it off.
3. Enter the text for Name, Date, Drawing No., and Scale (Figure 3). DO NOT worry about the text being centred in each box for the moment! Type **TEXT**.
   1. Specify a start point. It really does not matter where you start, as you can always move it afterward.
   2. Specify height. The height of the text for Name, Date, Scale, and Drawing No. will be **.75**. This will allow you to centre the text in the boxes.
   3. For the rotation angle of the text, enter **0**, as we want the text horizontal.
   4. Enter the text where the cursor is for Name, Date, and Drawing No. When complete, press

**enter** twice to finish off the command.

* 1. When you get to scale, you have to remember how many times you scaled up the border to fit the drawing. In this case, you scaled it up four times. Therefore the scale will be **1:4**. Press **enter** twice when complete to finish off the command.



**Figure 3**

1. Enter the text for the Title. Type **TEXT**.
   1. Specify a start point. It really does not matter where you start, as you can move the start point afterward.
   2. Specify height. The height of the text for the Title will be **1.50**. This will allow you to centre the text in the box.
   3. For the rotation angle of the text, enter **0**, as we want the text horizontal.
   4. Enter text at cursor: Now enter the text where the cursor is for the Title. In this case the Title will be **STAIRS** (Figure 4).



**Figure 4**

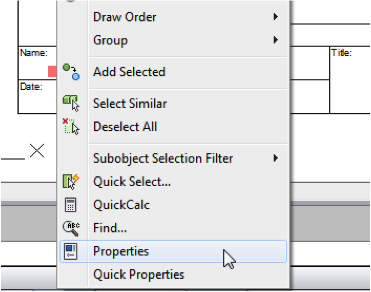
1. Move the text into position in each box in the title block and centre it. To do this, you can

left mouse click on the text and either select the grip (small blue square in the bottom of the text), or type **MOVE** and then pick a base point to move it from. Either way you must centre all your text.

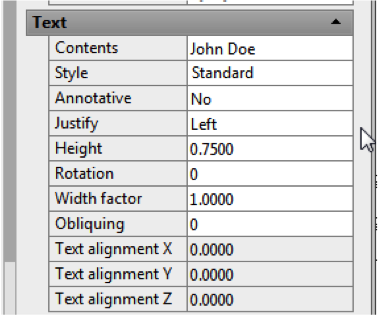
|  |  |
| --- | --- |
|  |  |
| **Figure 5**—Uncentred text with grip | **Figure 6**—Centred text with grip |

1. If you have to modify your text (spelling, size, width factor) so it can fit in the box, you

can right mouse click on the text and select Properties. The Properties dialog box opens up (Figure 7), and you can scroll down the list until you come across the Text properties (Figure 8). Here you can adjust the text as required.

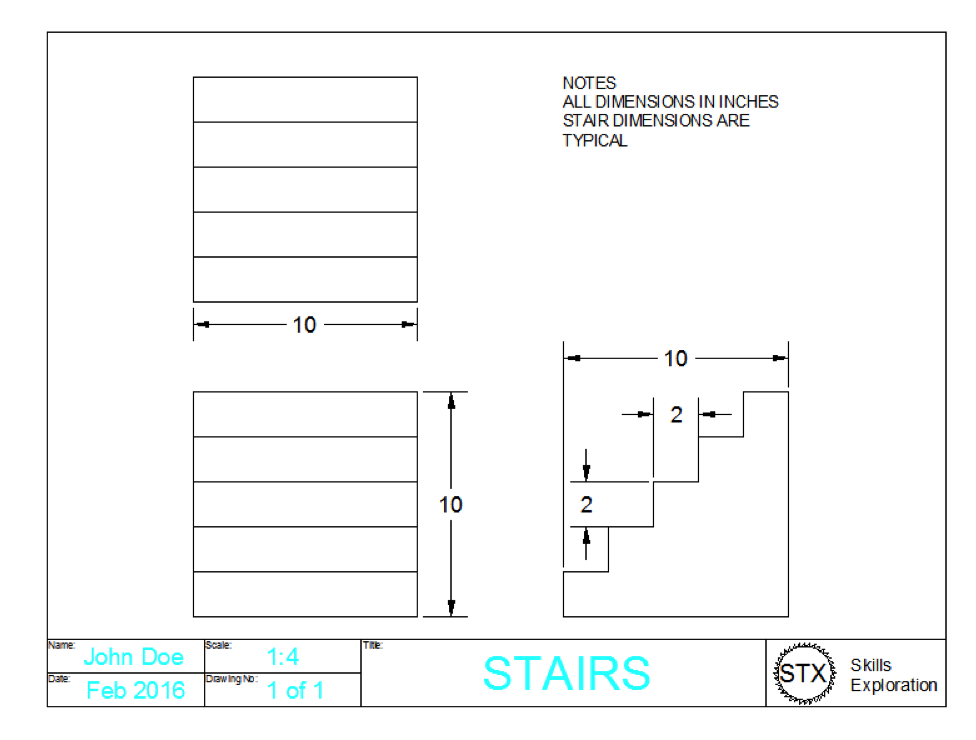


**Figure 7**—Properties dialog box



**Figure 8**—Text properties

1. Save your drawing as *orthographic stairs-name.dwg*.
2. Your finished drawing should resemble Figure 9.



**Figure 9**—Completed drawing