

# INSTRUMENTS OF DRAFTING

Drafting and Engineering  
Dossin

1. What is the purpose of engineering and technical drawings?

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2. Why is it important to use drafting tools and instruments when drafting?

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3. Why should drafting equipment be treated with utmost care?

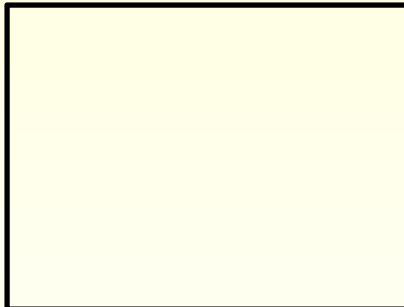
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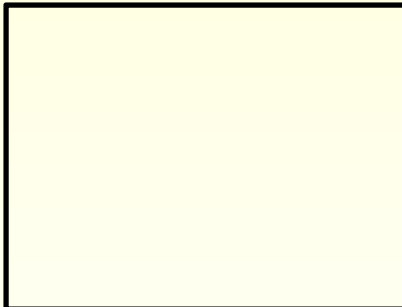
## THE TOOLS

4. Sketch in the boxes below what each drafting tool looks like.

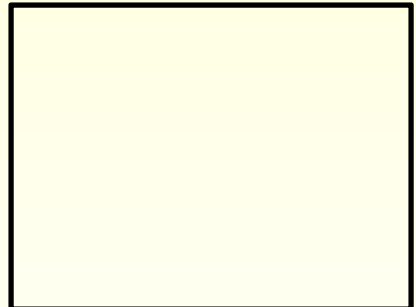
T-Square



Parallel Board



30-60 Triangle



45-45 Triangle



Scale



Eraser Shield



5. List and describe the different types of paper and their uses in drafting.

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6. Each size of paper has a specified name. The paper sizes vary slightly depending on if it is considered an Architectural or Engineers Series Sheet.

Architectural Sheet Sizes

"A" Size Sheet: 9" X 12"

"B" Size Sheet: \_\_\_\_\_

"C" Size Sheet: \_\_\_\_\_

"D" Size Sheet: \_\_\_\_\_

"E" Size Sheet: \_\_\_\_\_

Engineers Sheet Sizes

"A" Size Sheet: 8.5"x11"

"B" Size Sheet: \_\_\_\_\_

"C" Size Sheet: \_\_\_\_\_

"D" Size Sheet: \_\_\_\_\_

"E" Size Sheet: \_\_\_\_\_

7. Drafting pencils have varying degrees of lead, from soft to hard . A soft lead will produce a thick, dark, easily smeared line while a hard lead will produce a thin, light, and non-smearing line. Draw a line showing the softest to hardest lead.

8B, 7B, 6B, 5B, 4B, 3B, 2B, B, HB, F, H, 2H, 3H, 4H, 5H, 6H, 7H, 8H, 9H, 10H

8. Choose one drafting pencil and write the lead type of that pencil on the line of the first box. Using that pencil draw some lines in the first box. Repeat the same steps with your two other pencils in boxes 2 and 3. After using all of your pencils rate write which lead is the hardest, softest and in between.

Pencil Lead Used: \_\_\_\_\_  
Rating: \_\_\_\_\_

Pencil Lead Used: \_\_\_\_\_  
Rating: \_\_\_\_\_

Pencil Lead Used: \_\_\_\_\_  
Rating: \_\_\_\_\_

9. Circle which pencil lead type would be the best to use in the following drafting situations?

•**Border Line:** Needs to be a thick dark line: HB 4H 10H

•**Construction Line:** Needs to be very light because it is only used as a guide: 4B HB 4H

•**Visible Line:** Used to show visible edges of an object: 8B 2H 6H

•**Lettering:** Needs to be somewhat dark and bold: 6B H 4H

10. Draw what the following line types look like and write what they are used for:

a. Continuous or Visible Line:

❖ Used for: \_\_\_\_\_

b. Hidden Line:

❖ Used for: \_\_\_\_\_

c. Center Line:

❖ Used for: \_\_\_\_\_

d. Dimension and Extension Lines:

❖ Used for: \_\_\_\_\_

e. Cross Hatching:



❖ Used for: \_\_\_\_\_

f. Section or Cutting Plane Line:

❖ Used for: \_\_\_\_\_  
\_\_\_\_\_

g. Break Line:

❖ Used for: \_\_\_\_\_

h. Border Line:

❖ Used for: \_\_\_\_\_

i. Construction Line:

❖ Used for: \_\_\_\_\_



THE POWER OF THE ERASER

11. A drafter must know how to erase well to produce good work. Many innocent drawings have been committed to the trash can due to eraser paper ripping and smudging all that could have been prevented if light construction lines were drawn first. Letter the following in the lines below, " I, (insert you name) SOLEMNLY SWEAR TO ALWAYS FIRST DRAW LIGHT CONSTRUCTION LINES WHEN DRAFTING, THEN GO BACK AND DARKEN THE FINISHED LINES"

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

12. Write the proper way to use an eraser, then practice in the box below.

Step 1: \_\_\_\_\_  
Step 2: \_\_\_\_\_  
Step 3: \_\_\_\_\_  
Step 4: \_\_\_\_\_



**SOME MORE TOOLS**

13. Sketch in the boxes below what each drafting tool looks like.

Protractor



Compass



Divider



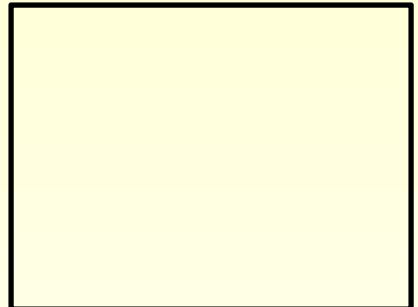
Circle Template



French Curve



Eraser Brush



14. Being neat will help you produce a nice drawing. Write some "Neatness in Drafting" rules below.

1. CLEAN YOUR TOOLS, HANDS, AND DESK. \_\_\_\_\_
2. \_\_\_\_\_
3. KEEP A NEAT DRAWING AREA. \_\_\_\_\_
4. \_\_\_\_\_



**SHEET FORMAT**

15. Border locations vary on drawings based on the sheet size. The bigger the sheet, the larger the margin. Typically an "A" or "B" size sheet will have a ¼" margin. On a "C" or "D", ½" margin and on an "E" a 1" margin.

What size margin would a "C" sheet have? \_\_\_\_\_

16. What side is the title block usually located on? \_\_\_\_\_  
\_\_\_\_\_

17. What information does the title block contain? \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_