



DRAFTING

Merit Badge Requirements

1) Format four sheets of drawing paper (or two sheets of paper if you are completing requirement 3) with proper borders and title blocks for your projects.

A) Make a rough sketch of your project drawings to determine the correct size of paper to format.

B) Using single-stroke vertical or slant Gothic lettering, fill in all important information in the title block section of the formatted paper.

Complete requirement 2 or 3 for your drawing projects

2) Prepare two of the following pencil drawings for reproduction, using two of the formatted sheets of paper and being sure to fill in the title block information.

A) Architectural: Make a rough sketch of a room. From it, make a finished scale floor plan. Use conventional symbols, show all openings, equipment, lights, and safety devices. Use an architectural scale size.

B) Mechanical: make a scale drawing of some piece of craft work or interesting object. Use the orthographic projection technique to show at least three views. Use dimension lines to show the actual size.

C) Electrical: Draw a simple schematic of a radio or electronic circuit. Properly print a bill of materials of the major electronics parts of the radio or circuit. Use standard drawing symbols for the electronic components.

3) Using a CAD (computer-aided drafting) system, prepare and plot one of the drawings in requirements 2A, 2B, or 2C. Create the format (border and title block) on the computer before starting the drawing.

4) Using a formatted sheet of paper, prepare an isometric drawing of something not drawn in requirement 2 or 3. On the drawing, list which instruments you used.

5) Lettering: Using single-stroke vertical or slant Gothic lettering, describe in forty words or less why CAD is used in a particular industry (aerospace, electronics, architectural, or other). Use the 8 1/2-by-11 inch formatted sheet.

6) Describe the three most common methods of reproducing pencil drawings. Describe one method of reproducing a computer drawing. Make copies of one of your drawings using one of these methods.

**Due to the nature of this merit badge most of your work will not be done in/on this worksheet. For many requirements you will need to complete the work then attach or keep it with this worksheet. Before using this worksheet speak with your merit badge counselor for instructions.*

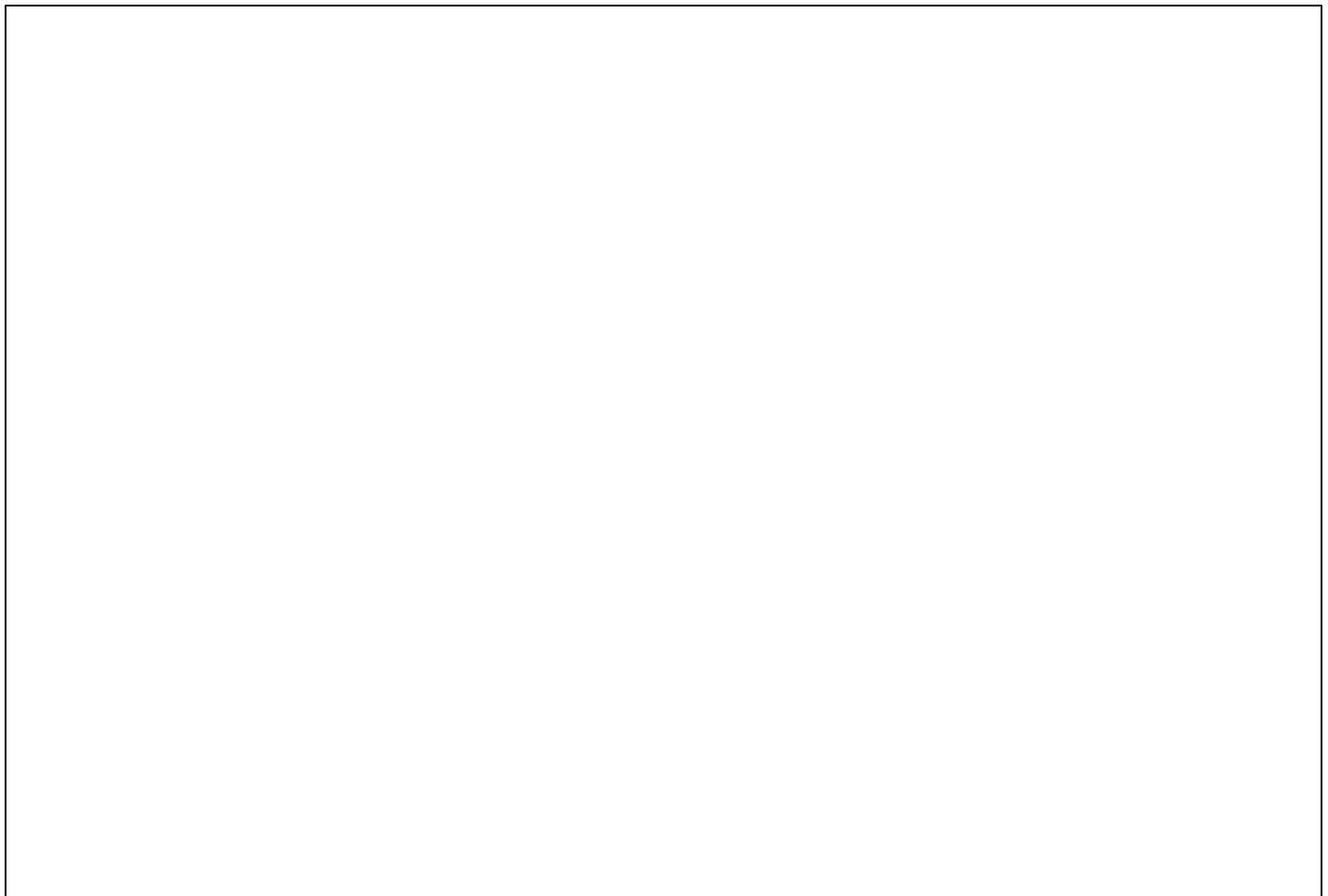
Requirement 1

Following this requirement you will be asked to choose either requirement 2 or requirement 3. Look through both of the requirements right now and make your decision on which requirement you will be working on. After making your decision, complete requirement 1.

Format four sheets of drawing paper if you are completing requirement 2. Format two sheets of drawing paper if you are completing requirement three. Format your sheets with the proper borders and title blocks for your projects.

Give a short description of the formatting process (what you did to format your paper): _____

Use the area below to make a rough sketch of your project drawings to determine the correct size of paper to format:



What size paper will you need to format? _____

Using single-stroke vertical or slant Gothic lettering, fill in all important information in the title block sections of the formatted paper. Use the area below to give an example of the information you put in the title block:



Requirement 2 - (*Select either requirement 2 OR requirement 3)

If you selected **Requirement 2**:

You have been given three choices for this requirement. Select and complete two of them. Prepare your two pencil drawings for reproduction, using two of the formatted sheets of paper and being sure to fill in the title block information.

If you selected **Option A: Architectural**

Make a rough sketch of a room. From this sketch, make a finished scale floor plan. Using conventional symbols, show all openings, equipment, lights, and safety devices. Use an architectural scale size.

__ Once you have completed your sketch and scale floor plan show it to your counselor.

If you selected **Option B: Mechanical**

Make a scale drawing of some piece of craft work or interesting object. Use the orthographic projection technique to show at least three views. Use dimension lines to show the actual size.

__ Once you have completed your drawing and views show them to your counselor.

If you selected **Option C: Electrical**

Draw a simple schematic of a radio or electronic circuit. Properly print a bill of materials of the major electronic parts of the radio or circuit. Use standard drawing symbols for the electronic components.

__ Once you have completed your schematic and bill of materials show them to your counselor.

Requirement 3 - (*Select either requirement 2 OR requirement 3)

If you selected **requirement 3**:

Using a CAD (computer-aided drafting) system, prepare and plot one of the drawings in requirements 2A, 2B, or 2C. Create the format (border and title block) on the computer before starting the requirement.

__ Once you have completed your plot show it to your counselor.

Requirement 4

Using one of your formatted sheets of paper, prepare an isometric drawing of something not drawn in requirement 2 or three.

Describe your drawing: _____

list the instruments you used for your drawing and include this list on your drawing: _____

__ Show your drawing to your counselor.

Requirement 5

The focus of this requirement is lettering.

Using one of your 8 1/2-by 11 formatted sheets, use single-stroke vertical or slant Gothic lettering to describe in forty words or less why CAD is used in a particular industry (aerospace, electronics, architectural, or other).

__ When you have finished your lettering requirement show it to your counselor.

Requirement 6

Describe the three most common methods of reproducing pencil drawings:

Method 1: _____ Description of Method: _____

Method 2: _____ Description of Method: _____

Method 3: _____ Description of Method: _____

Describe one method of reproducing a computer drawing:

Method: _____ Description of Method: _____

Make copies of one of your drawings using one of the methods mentioned above.

Which method did you use? _____

__ Once you have made the copies show them to your counselor.