



Republic of the Philippines
Department of Education
National Capital Region
Schools Division Office – Muntinlupa City

SPECIAL PROGRAM IN TECHNICAL VOCATIONAL EDUCATION (SPTVE)
TECHNICAL DRAFTING – GRADE 8
Q3 – W2

I. Topic: Isometric Drawing

II. Objectives:

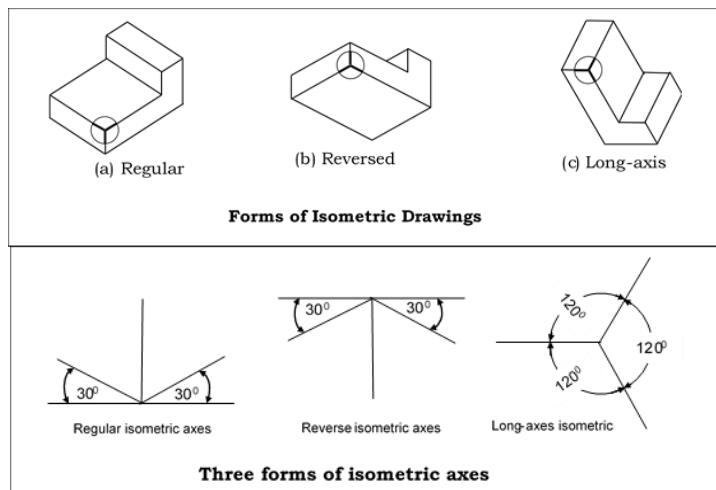
1. define isometric drawing.
2. differentiate the three forms of isometric drawings; and
3. construct isometric drawings.

III. Introduction

Isometric drawing is a simple form of pictorial drawing in which the receding axes are drawn at 30° from the horizontal. The angles between the three axes are all 120° . There are three basic forms of isometric drawing known as *regular*, *reverse*, and *long axis* isometric. To construct an isometric projection, you need T-square, $30^\circ \times 60^\circ \times 90^\circ$ triangles, and a drawing/drafting board.

Three Basic Forms of Isometric Drawing

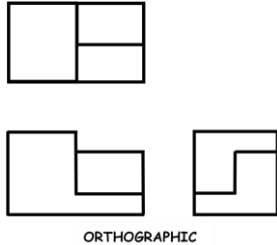
1. **Regular Isometric** - This is the most common form of isometric drawing and when using it, the illustrator can choose to view the object on either side. See *figure (a)*.
 2. **Reverse Isometric** - The only difference between reverse and regular isometric is that you can view the bottom of the part instead of the top. The 30° axes lines are drawn downward from the horizontal line instead of upward. See *figure (b)*.
 3. **Long-axis Isometric** - The long-axis isometric drawing is normally used for objects that are long, such as a shaft. See *figure (c)*. shows an example of long-axis isometric.
- The drafter should choose the view that will give the most realistic presentation of the object. For example, if the object is normally seen from below, then the reverse isometric would be the proper form to use.





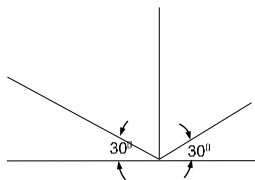
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Steps in Constructing Isometric Drawing

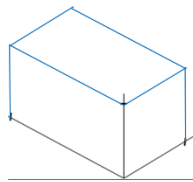


ORTHOGRAPHIC

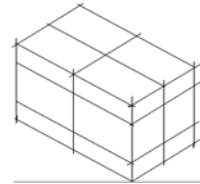
1. Draw the three isometric axes using 30° x 60° x 90° triangles.



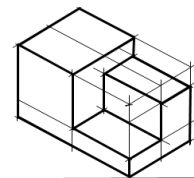
2. The given orthographic views indicate the measurements of the width, height, and length on the isometric axes, then draw an isometric box.



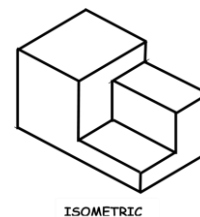
3. From the isometric box, add sub-dimensions and complete the construction lines.



4. Darken the edges/ contour of the object.



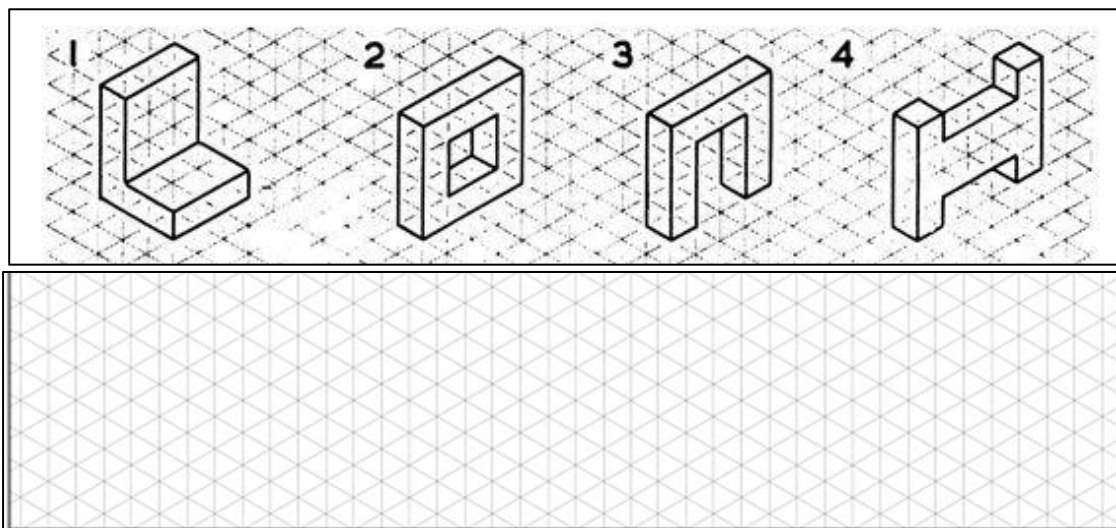
5. Erase the unnecessary lines and label the drawing. Add shading if required.



ISOMETRIC

IV. Activities:

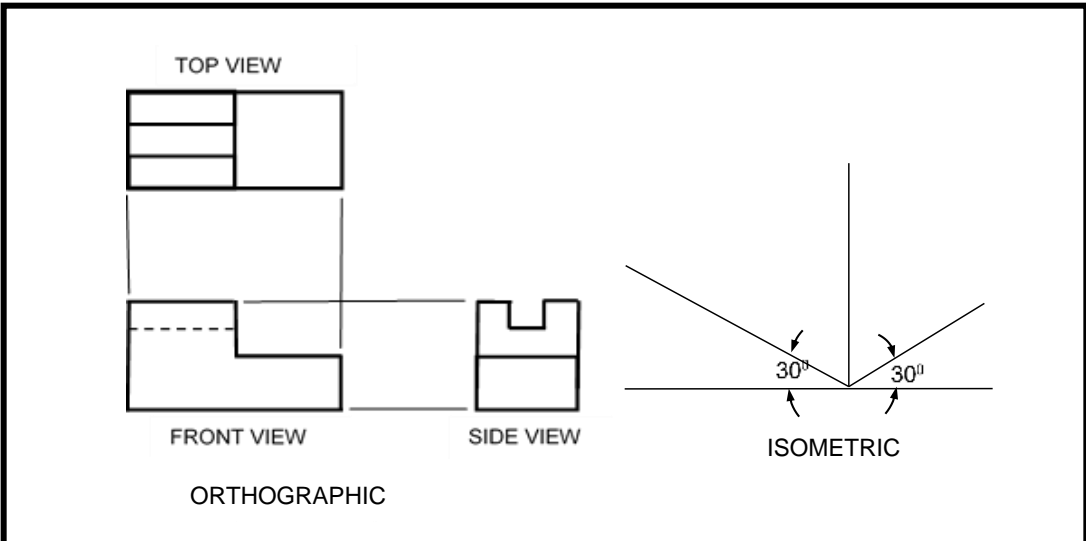
Activity 1 – Sketch the following illustrations on the grids below.



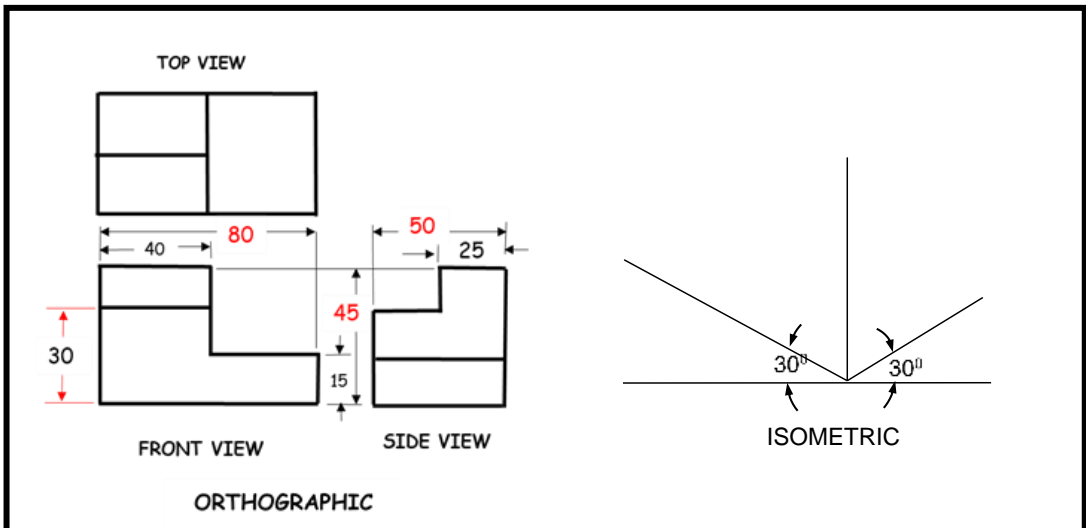


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Activity 2 – Copy the orthographic, then draw the isometric. Estimate its dimensions. Use Oslo paper for your output. Follow the same title block format on all your drawings.

			
STUDENT NAME	ISOMETRIC DRAWING	DATE FINISHED	PLATE
SECTION:		TEACHER	2

Activity 3 – Copy the orthographic, then draw the isometric (follow the given dimensions). Use Oslo paper for your output. Follow the same title block format.

			
STUDENT NAME	ISOMETRIC DRAWING	DATE FINISHED	PLATE
SECTION:		TEACHER	3

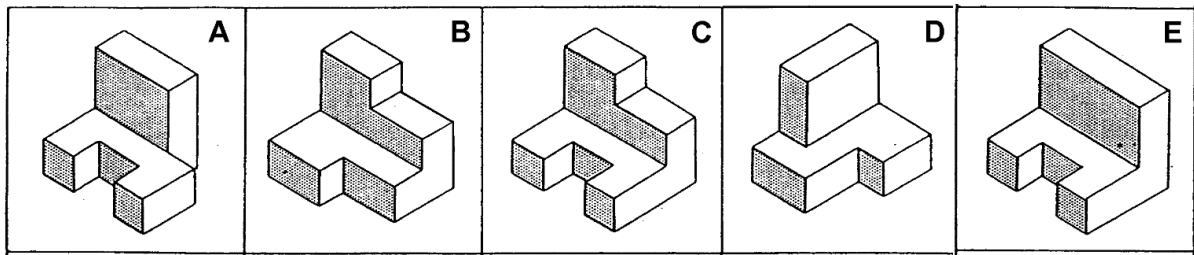
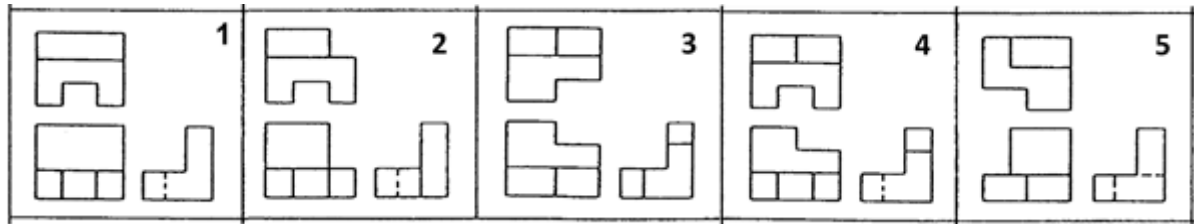




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V. Assessment:

Directions: Study the two types and complete the table by matching the numbered orthographic drawings with the same isometric view. Write your answer on a separate sheet of paper.



1. _____ 2. _____ 3. _____ 4. _____ 5. _____

VI. Reflection:

In your own opinion, what is the importance of isometric drawing. Explain your answer.

References:

- German M. Manaois. *Drafting 1 and 2* Phoenix Publishing:1983
- Norman Stirling. *Introduction to Technical Drawing* Delmar Publishing: 1977
- Competency-Based Learning Material, *Technical Drafting*
- Madsen, Shumaker, Turpin, Stark: *Engineering, Drawing, and Design*
- Internet: *Pinterest*

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