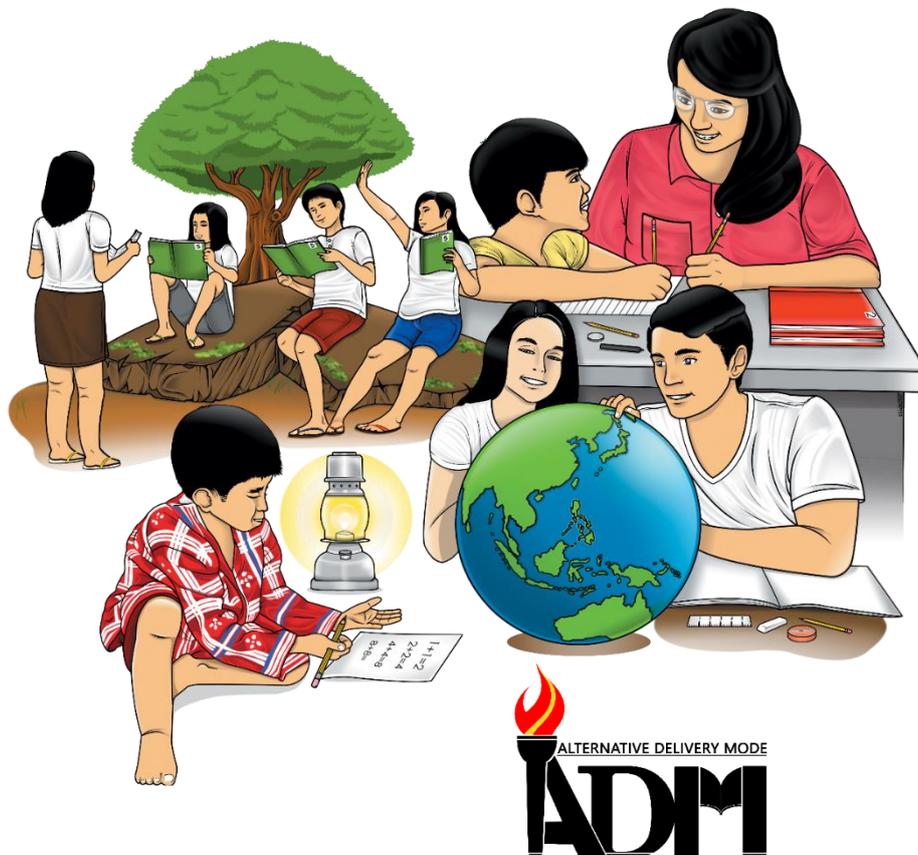


Technology and Livelihood Education

Quarter 1 - Module 8 Operate CAD Software and Computer Hardware

(Manipulating CAD Features: Modifications)

Technical Drafting NC II



10

Technology and Livelihood Education

Quarter 1 - Module 8

**Operate CAD Software and
Computer Hardware**

(Manipulate CAD Features: Modifications)

Technical Drafting NC II

ICT-Technical Drafting – Grade 10

Alternative Delivery Mode

Quarter 1 – Module 8: Operate CAD Software and Computer Hardware (Manipulating CAD features: Modifications)

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Published by the Department of Education
Secretary: Leonor Magtolis Briones
Undersecretary: Diosdado M. San Antonio

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Printed in the Philippines by:

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Introductory Message

This Self-Learning Module (SLM) is prepared so that you, our dear learners, can continue your studies and learn while at home. Activities, questions, directions, exercises, and discussions are carefully stated for you to understand each lesson.

Each SLMS is composed of different parts. Each part shall guide you step-by-step as you discover and understand the lesson prepared for you.

Pre-tests are provided to measure your prior knowledge on lessons in each SLM. This will tell you if you need to proceed on completing this module or if you need to ask your facilitator or your teacher's assistance for better understanding of the lesson. At the end of each module, you need to answer the post-test to self-check your learning. Answer keys are provided for each activity and test. We trust that you will be honest in using these.

In addition to the material in the main text, Notes to the Teacher are also provided to our facilitators and parents for strategies and reminders on how they can best help you on your home-based learning.

Please use this module with care. Do not put unnecessary marks on any part of this SLM. Use a separate sheet of paper in answering the exercises and test. And read the instructions carefully before performing each task.

If you have questions in using this SLM or any difficulty in answering the tasks in this module, do not hesitate to consult your teacher or facilitator.

Thank you.



Notes to the Teacher

This contains helpful tips or strategies that will help you in guiding the learner.

For the facilitator:

Hi, as a facilitator you are expected to orient the learners on how to use this module. You also need to keep track of the learners' progress while allowing them to manage their own learning. Kindly, advise the learner's parents or guardians of the same procedure since they will be the primary supporters in the learners' progress. Please, do not forget to remind the learner to use separate sheets in answering all of the activities found in the learning module

For the learner:

Hello learner, Welcome to the Technical Drafting NC II Alternative Delivery Mode (ADM) Module on Manipulating CAD features: Editing. I hope you are ready to

progress in your Grade 10 TLE in Technical Drafting with this learning module. This is designed to provide you with interactive tasks to further develop the desired learning competencies prescribed in our curriculum. With this, you are expected to appreciate staking through the information and activity given.

This module has the following parts and corresponding icons:

ICON	LABEL	DETAIL
	What I Need to Know	This contains the learning objectives which you need to accomplish.
	What I know	This evaluates what you know about the lesson you are to learn.
	What's In	This connects the current lesson with a topic necessary in your understanding.
	What's New	This introduces the lesson through an activity.
	What Is It	This contains a brief discussion of the learning module lesson.
	What's More	These are activities to check your understanding of the lesson.
	What I have Learned	This summarizes the important ideas presented in the lesson.
	What I Can Do	This is a real-life application of what you have learned.
	Assessment	This is a post assessment of what you have learned.
	Additional Activity	This is an activity that will strengthen your knowledge about the lesson.

At the end of this module you will also find:

References

This is a list of all sources used in developing this module.

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Lesson

1

Manipulating CAD Features: Modifications

The following are some reminders in using this module:

1. Use the module with care. Do not put unnecessary mark/s on any part of the module. Use a separate sheet of paper in answering the exercises.
2. Don't forget to answer *What I Know* before moving on to the other activities included in the module.
3. Read the instruction carefully before doing each task.
4. Observe honesty and integrity in doing the tasks and checking your answers.
5. Finish the task at hand before proceeding to the next.
6. Return this module to your teacher/facilitator once you are through with it.

If you encounter any difficulty in answering the tasks in this module, do not hesitate to consult your teacher or facilitator. Always bear in mind that you are not alone.

We hope that through this material, you will experience meaningful learning and gain deep understanding of the relevant competencies. You can do it!



What I Need to Know

This module was designed and written to guide you to acquire the learning competencies and develop your skills in editing and attributes of drawing in ICT-Technical Drafting. The scope of this module permits it to be used in many different learning situations. The language used recognizes the diverse vocabulary level of students. The lessons are arranged to follow the standard sequence of the course. However, the order in which you read the module can be changed to correspond with the textbook you are now using.

Quarter/Week

Learning Competency Code

Learning Competency

Q1/W8

TLE_ICTTD9-12CA-Ic-j- 2

LO 1. Operate CAD software and computer hardware

1.3 Manipulate CAD features as per job requirement: Modifications

Learning Objectives:

After going through this module, you are expected to:

1. describe layers in AutoCAD
2. follow steps in creating and organizing layers in layer property manager.
3. create a well-organize drawing using the layers; and,
4. develop traits such as ingenuity, organization, creativity, independence and passion towards learning.



What I Know

Pretest

Multiple Choice.

Directions: Choose the letter of the best answer. Write the chosen letter on the separate sheet of paper.

- Which of the following layer tools sets the selected layer as the current layer?
 - New Layer
 - Set Current
 - Freeze Layer
 - New layer Frozen in All Viewports
- What layer tool locks and unlocks the selected layers?
 - 
 - 
 - 
 - 
- Which tool specifies the color of the selected layers?
 - Color
 - Freeze
 - Lock
 - Plot
- Which of the following tools specifies the line weight of the selected layers?
 - Linetype
 - Lineweight
 - Plot
 - Transparency
- Which of the following layer tools creates a new layer and freezes it in all existing layout viewports?
 - New Layer
 - Set Current
 - Freeze Layer
 - New layer Frozen in All Viewports
- Which of the following is the *second* step in creating a layer in AutoCAD?
 - Enter a new name.
 - In the Layer Properties Manager, choose New.
 - In the select color dialog box, select a color name.
 - In the lineweight dialog box, select a line weight from the list.
- Which of the following tools enables you to turn the layers On or Off?
 - 
 - 
 - 
 - 
- Which of the following tools prevents the selected layers from being plotted?
 - 
 - 
 - 
 - 

9. How do you prevent the selected layers from being plotted?
 - A. Press CTRL + P.
 - B. Type options and choose plot.
 - C. Go to the home tab and click plot.
 - D. In the Layer Property Manager, select the plot icon.
10. How do you assign a lineweight to a layer?
 - A. Choose the lineweight that you want.
 - B. In the property toolbar, choose layer control.
 - C. In the lineweight dialog box, select the lineweight from the list.
 - D. In the layer properties manager, select layer and then click the linetype associated.
11. Which of the following shortcut keys will you press if you want to delete a layer?

A. ALT+A	C. ALT + D
B. ALT + B	D. ALT + N
12. You are working on your drawing and you want to set the current layer you are working, what shortcut key will you press?

A. ALT+A	C. ALT + C
B. ALT + B	D. ALT + D
13. Where can you load additional linetypes?
 - A. Color Manager
 - B. Lineweight Manager
 - C. Layer Property Manager
 - D. Load or Reload Manager
14. Where can you find the layer property manager?

A. Home Tab	C. Layout Tab
B. Insert Tab	D. View Tab
15. Turns transparency On so that objects beneath the image are visible.

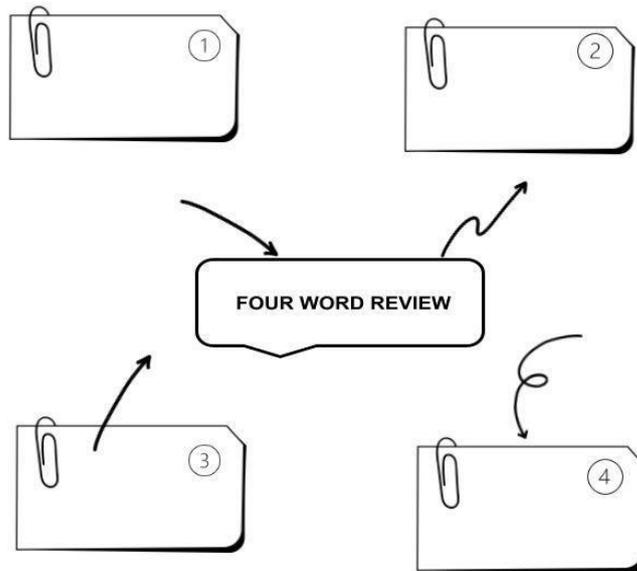
A. Lineweight	C. Plot
B. Lock	D. Transparency



What's In

Four Word Review

Directions: Fill in the box below a word on what you have learned in the previous lesson. Write your answers on an answer sheet.



What's New

Hamburger Writing Outline

Directions. A hamburger has different ingredients and layers. Now, imagine you are preparing a hamburger for your family. Write the steps on how you would prepare a hamburger on the answer sheet provided.

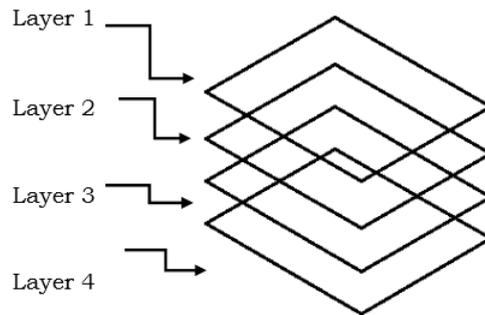


<hr/> <hr/> <hr/> <hr/> <hr/>



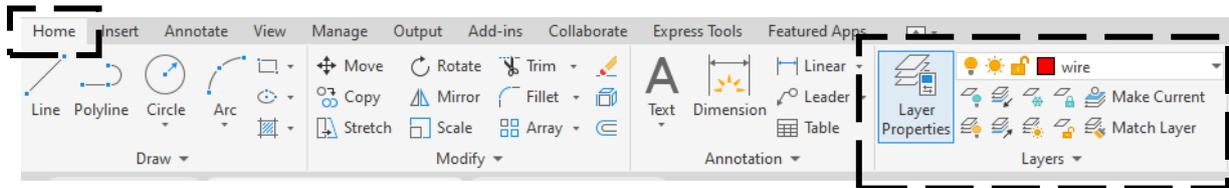
What Is It

Layers (LA) is an electronic device overlay similar to acetate. Every layer has an associated color and line type. Layers are the equivalent of the overlays used in paper-based drafting. They are primary organizational tool in AutoCAD.

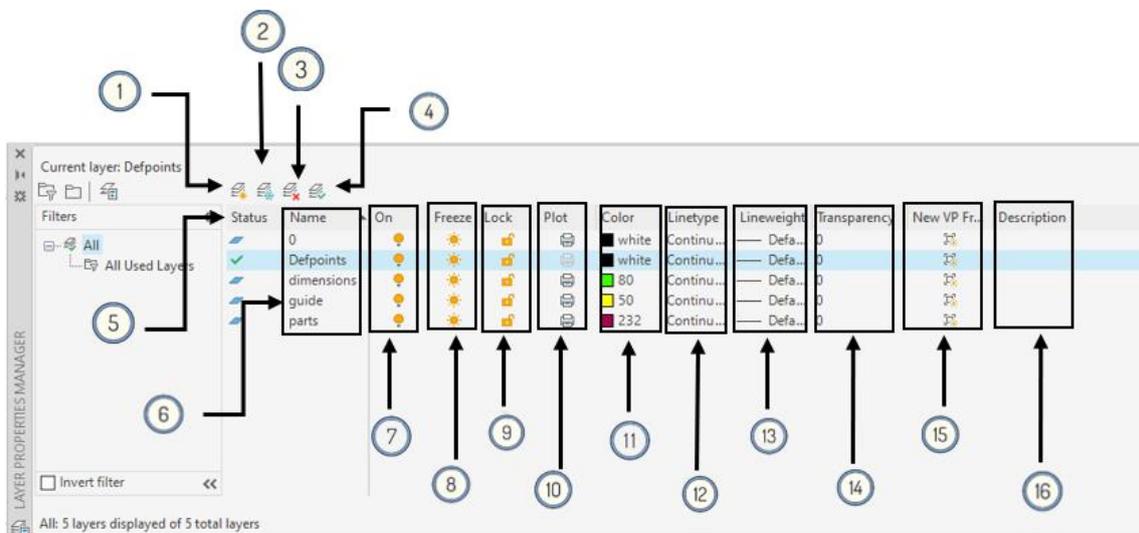


Let us learn and explore the Layer Properties Manager and its functions.

The Layer Properties Manager are located at the Home Tab>Layers.



Once you select the layer properties, the Layer Properties Manager will display on your workplace.

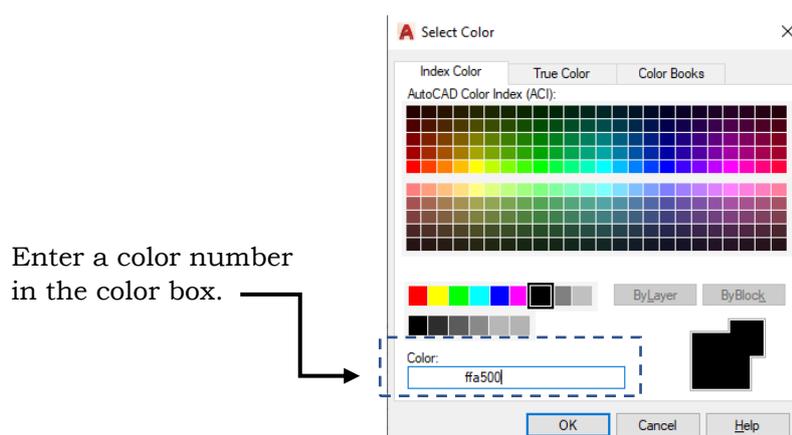


1. New Layer (Alt + N) - creates a layer with a default name that you can immediately change.

2. New Layer Frozen in All Viewports - creates a new layer and freezes it in all existing layout viewports. This button is accessible in model and layout tab.
3. Delete Layer (Alt+ D) - delete selected layers. You can delete only unreferenced layers. Referenced layers include layers 0 and DEFPOINTS, layers containing objects (including objects in block definitions), the current layer, and xref- depended on layers.
4. Set Current (Alt + C) - sets the selected layer as the current layer. Objects that you created are drawn on the current layer.
5. Status-able to look at the status of the current layer used.
6. Name - changes layer name globally for entire drawing.
7. ON/OFF - Objects in layer turned OFF are invisible onscreen or in plotting but included in regeneration. Use ON to restore visibility.
8. Freeze - freezes or thaws layers for entire drawing. Same effect using OFF, does not display, plot, or regenerate objects on frozen layers but it will speed up zoom, pan, and other display commands. Use THAW to restore frozen layers.
9. Lock - you cannot edit the objects on a locked layer; however, they are still visible if the layer is on and thawed. You can make locked layer current, and you can add objects to it. Use UNLOCK to restore.
10. Plot/no Plot - prevents the selected layers from being plotted. It can be useful to turn off plotting for a layer that contains reference information. You can view the reference information while you work.
11. Color - displays the select color dialog box. Specify a color for the selected layer.

To assign a color to a layer:

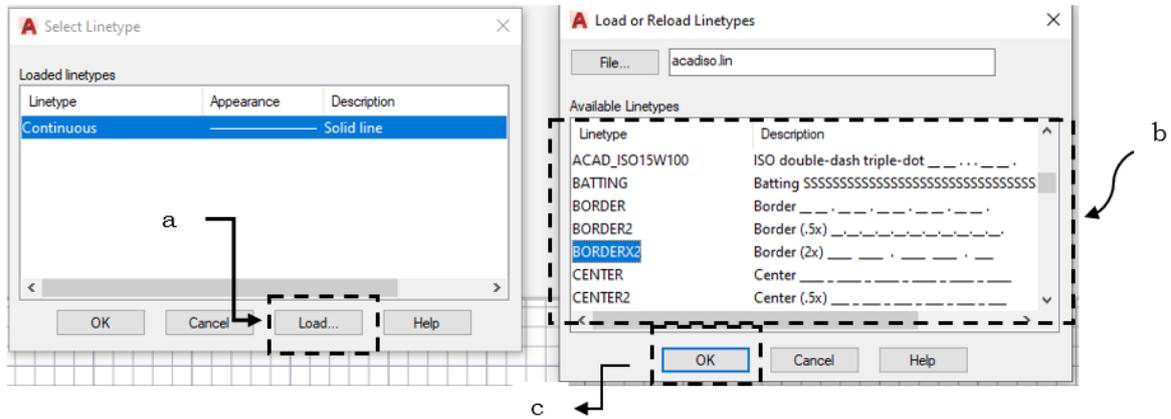
In the select Color dialog box, select a color name, or enter a color number in the color box.



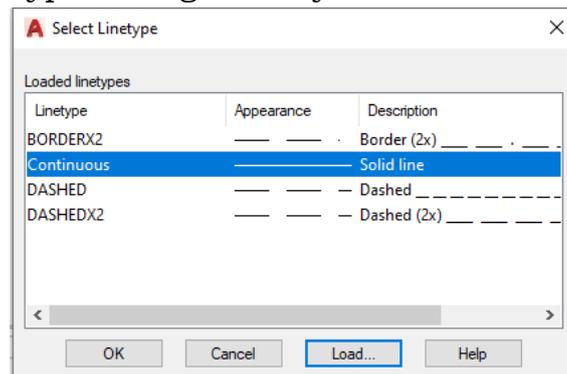
12. Line type - specifies the line type for the selected layers.

To assign Line Type to a layer:

- In the Layer Properties, Click *Load* to display the Load or Reload Linetypes from a file
- Select the line type.
- Click OK.



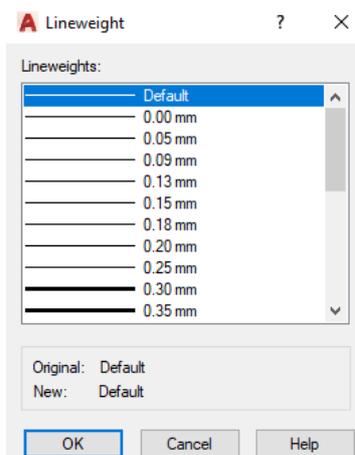
- In the Line type manager, you can load additional linetypes.
- Choose the Linetype Manager that you want and click OK.



13. Line weight - specifies the line weight for the selected layers.

To assign Line weight to a layer:

In the line weight dialog box, select from the list.



14. Transparency- changes the transparency for entire drawing.

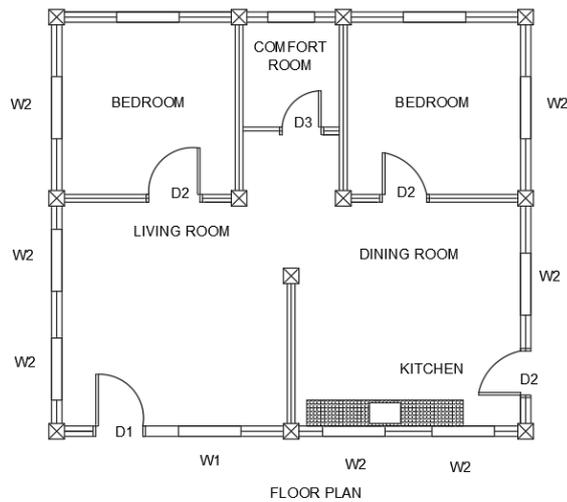
15. New VP freeze - VP freeze layer in newly created viewports.



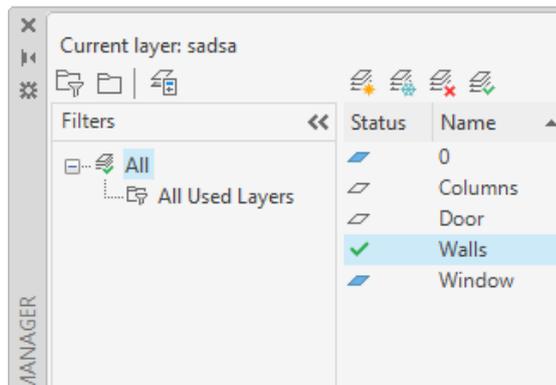
What's More

Creating a Layer

Directions. Follow the steps in creating layers in the floor plan below:

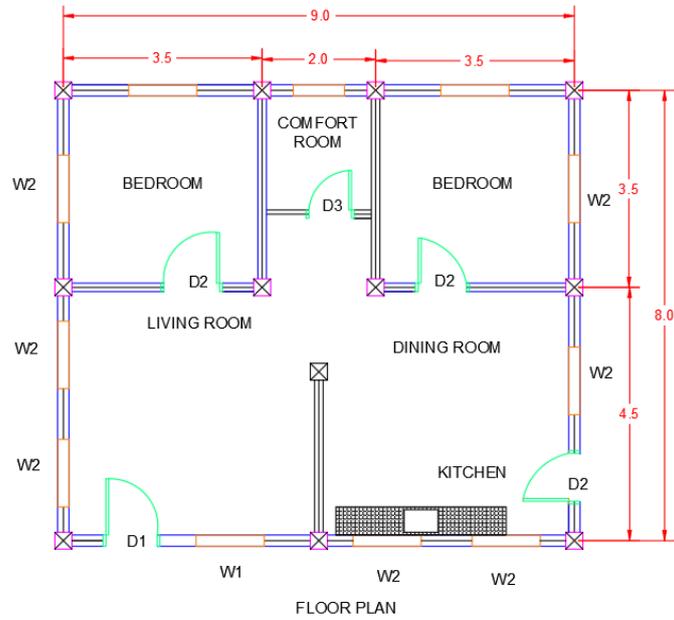


Step 1: In the Layer Properties Manager, Click New or ALT+ N to create a new layer. Do the following layer.



Step 2. Assign the Color, Linetype and Lineweight of each layer.

Status	Name	On	Freeze	Lock	Plot	Color	Linetype	Lineweight
	0					white	Continu...	Defa...
	Columns					mag...	Continu...	Defa...
	Door					110	Continu...	Defa...
	Walls					blue	Continu...	Defa...
	Window					cyan	Continu...	Defa...
	Dimension					red	Continu...	Defa...



Step 3. You can now organize your drawing using your layers. If you want to display only the walls and columns in your drawing (see figure 1), select the *Off* button in the Layer Property Manager.

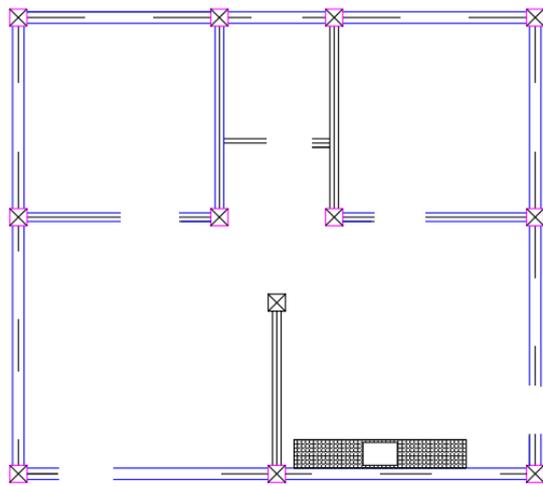


Figure 1

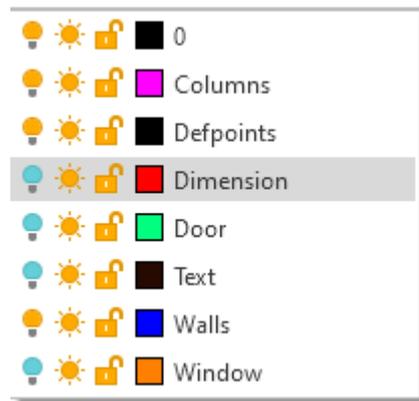


Figure 2: Dimension, Door, Window and Text are turn OFF



What I Have Learned

Critical Thinking Skills

Essay

Directions: Answer each of these questions in two to three sentences. Write your answer on the answer sheet.

1. What is the importance of using the layers in AutoCAD?

2. If you are going to create a house plan using AutoCAD, how many layers will you create and what will be the use of each layer?



What I Can Do

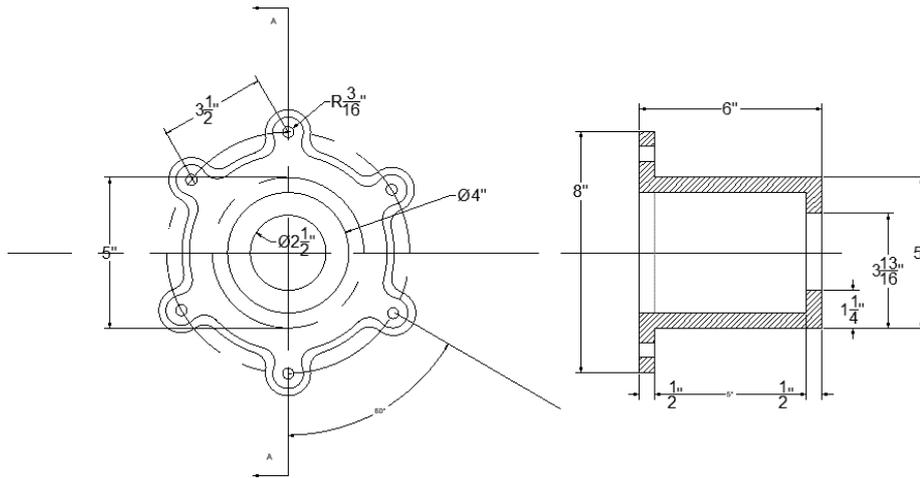
Hello learners! There are two (2) sets of activity. **Activity 1** is for those who have computer devices and AutoCAD software. **Activity 2** is for those who don't have any computer devices. You can choose any activity that is applicable to you.

Activity 1: Hands-on Activity

Directions.

1. Redraw the given object below.
2. Follow the dimensions of the object.
3. Save your work as
<LastName_FirstName_Section_LayerExer_V01>.dwg

Suggested Layers		
Name	Color	Linetype
Guide	Yellow	Center line
Parts	Red	Continuous
Dimensions	Green	Continuous



Performance Criteria

Criteria	Levels of Assessment				Score
	Excellent (10 pts)	Very satisfactory (8 pts)	Satisfactory (5 pts)	Needs Improvement (3 pt)	
Followed the instructions Followed the given instructions/procedure from start to finish, observed correct usage of command tools					
Proficiency Perform task with competence and exceptional performance					
Accuracy Perform the task with no errors					
Use of AutoCAD command tools Demonstrate high degree of competency with AutoCAD commands. Can prioritize commands and tools usage to create and modify objects.					
Completeness Drawings are completed quickly and efficiently with no errors					
Total					

Activity 2: Sequencing

Directions: Create a diagram showing the steps on how to create AutoCAD layers. Illustrate your diagram on a short bond paper.

Performance Rubrics: Creating Layers

Criteria	Excellent 10	Good 7	Satisfactory 5
<i>Content</i>	Ideas are clearly expressed and detailed	Ideas are good	Ideas are not properly expressed
<i>Use of Diagram</i>	All the steps in creating layers are clearly defined, shaped, and labeled. The diagram describes the steps in creating layers in an accurate manner.	The diagram describes the process, but its component is not correctly labeled, shaped, or defined.	The diagram is incomplete and non-understandable.
<i>Graphics</i>	The diagram is very creative, neat and with excellent work result.	The diagram is creative, neat, and with good work result	The diagram has a good result but lacks creativity.
<i>Organization</i>	Free of grammatical errors and uses legible words pertinent to the topic	Mostly with grammatical errors and words used are irrelevant to the topic	Frequent grammatical errors and with words not pertinent to the topic
<i>Time Management</i>	Finished the work on or before the given time	Finished the work after the given time	Unable to finish the work



Post-Assessment

Multiple Choice.

Directions: Choose the letter of the best answer. Write the chosen letter on the answer sheet provided.

1. How do you assign a lineweight to a layer?
 - A. Choose the lineweight that you want.
 - B. In the property toolbar, choose layer control.
 - C. In the lineweight dialog box, select the lineweight from the list.
 - D. In the layer properties manager, select layer and then click the line type associated.
2. Which of the following is the *second* step in creating a layer in AutoCAD?
 - A. Enter a new name.
 - B. In the Layer Properties Manager, choose New.
 - C. In the select color dialog box, select a color name.
 - D. In the lineweight dialog box, select a line weight from the list.
3. Which tool specifies the color of the selected layers?
 - A. Color
 - B. Freeze
 - C. Lock
 - D. Plot
4. Which of the following tools specifies the line weight of the selected layers?
 - A. Linetype
 - B. Lineweight
 - C. Plot
 - D. Transparency
5. Which of the following layer tools creates a new layer and freezes it in all existing layout viewports?
 - A. New Layer
 - B. Set Current
 - C. Freeze Layer
 - D. New layer Frozen in All Viewports
6. Which of the following shortcut keys will you press if you want to delete a layer?
 - A. ALT+A
 - B. ALT + B
 - C. ALT + D
 - D. ALT + N
7. You are working on your drawing and you want to set the current layer you are working, what shortcut key will you press?
 - A. ALT+A
 - B. ALT + B
 - C. ALT + C
 - D. ALT + D
8. Where can you load additional linetypes?
 - A. Color Manager
 - B. Lineweight Manager
 - C. Load or Reload Manager
 - D. Layer Property Manager

9. How do you prevent the selected layers from being plotted?
- Press CTRL + P.
 - Type options and choose plot.
 - Go to the home tab and click plot.
 - In the Layer Property Manager, select the plot icon.
10. Which of the following layer tools sets the selected layer as the current layer?
- New Layer
 - Set Current
 - Freeze Layer
 - New layer Frozen in All Viewports
11. Where can you find the layer property manager?
- Home Tab
 - Insert Tab
 - Layout Tab
 - View Tab
12. Turns transparency On so that objects beneath the image are visible.
- Lineweight
 - Lock
 - Plot
 - Transparency
13. Which of the following tools enables you to turn the layers On or Off?
- 
 - 
 - 
 - 
14. What layer tool locks and unlocks the selected layers?
- 
 - 
 - 
 - 
15. Which of the following tools prevents the selected layers from being plotted?
- 
 - 
 - 
 - 



Additional Activity

Matching Pairs

Directions: Match each word on the left column with its definition or function on the right column. Write the letter of the answer on your answer sheet.

Column A

- ___ 1. Line weight
- ___ 2. ON/OFF
- ___ 3. Alt + C

- ___ 4. Lock
- ___ 5. Freeze

- ___ 6. New Layer Frozen in All Viewports

- ___ 7. Alt + N

- ___ 8. Color
- ___ 9. Plot

- ___ 10. Line Type

Column B

- A. It specifies the color of the selected layers.
- B. It sets the selected layer as the current layer.
- C. It creates a layer with a default name that you can immediately change.

- D. It controls whether the selected layers are plotted.
- E. This tool specifies the line weight for the selected layers.

- F. It locks and unlocks the selected layers.

- G. It creates a new layer and freezes it in all existing layout viewports.

- H. It turns the layer On or Off.
- I. It specifies the line type for the selected layers.
- J. It specifies the line weight for the selected layers.
- K. This tool freezes the selected layers.



Answer Key

What I Know

1. A
2. C
3. A
4. B
5. B
6. D
7. A
8. B
9. D
10. A
11. C
12. C
13. C
14. A
15. D

What's In

answers may vary

What's New

answers may vary

What's More

answers may vary

What I Have Learned

answers may vary

What I Can Do

Performance output
will be evaluated
through given
rubrics

Assessment

1. A
2. D
3. A
4. B
5. B
6. C
7. C
8. C
9. D
10. A
11. A
12. D
13. A
14. C
15. D

Additional Activity

1. E
2. H
3. B
4. F
5. K
6. G
7. C
8. A
9. D
10. I

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- Shrock, Cheryl. 2012. Advance AutoCAD 2013. United States of America: Industrial Press Inc, 989 Avenue of the Americas New York, NY 10018.

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