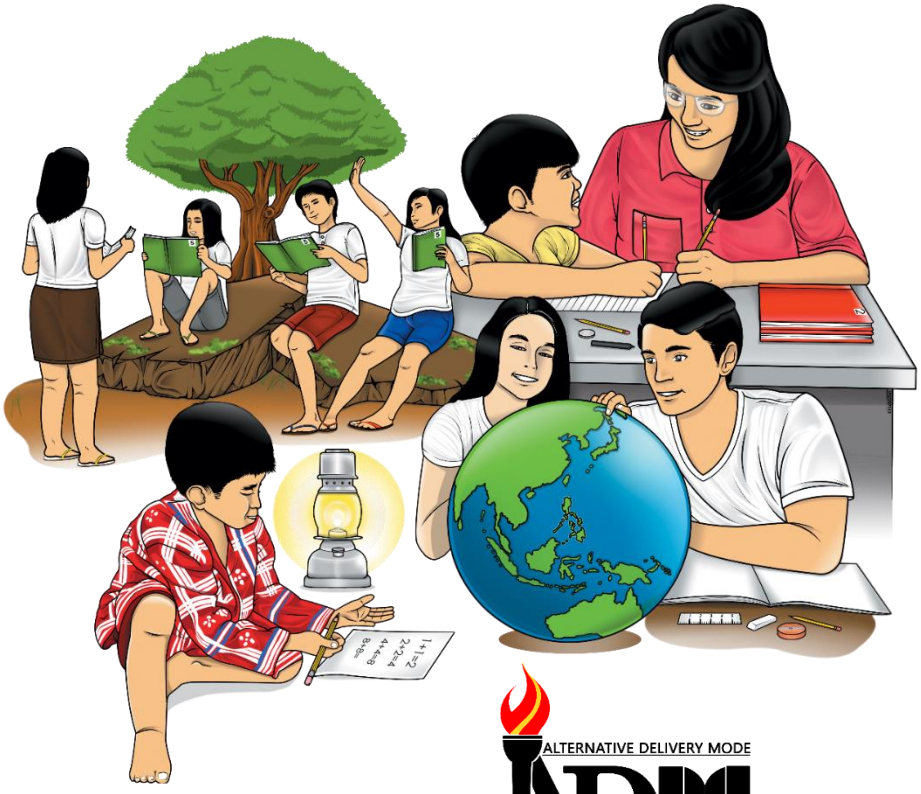
10

Technology and Livelihood Education

Quarter 1 - Module 2
Operate CAD Software and Computer Hardware
(Exploring CAD Working Environment)

Technical Drafting NC II



ALTERNATIVE DELIVERY MODE

GOVERNMENT PROPERTY
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10

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Operate CAD Software and Computer Hardware
(Exploring CAD Working Environment)

Technical Drafting NC II

DepED
DEPARTMENT OF EDUCATION

ICT-Technical Drafting – Grade 10
Alternative Delivery Mode
Quarter 1 – Module 2: Operate CAD Software and Computer Hardware
(Exploring CAD Working Environment)

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Development Team of the Module

Writer: Altea E. Ramos
Editors:
Reviewer: Jonalyn C. Ambrona
Mary Jane N. Malihod
Illustrator:
Layout Artist:
Management Team: Estela Leon-Cariño
Carmel F. Meris
Rosita C. Agnasi
Marie Carolyn B. Verano
Christopher C. Benigno
Juliet C. Sannad
Mary Jane N. Malihod
Armi Victoria Fiangaan
Brenda M. Cariño

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Office Address: Wangal, La Trinidad, Benguet

Telefax: (074) -422 -4074

E-mail Address: car@deped.gov.ph

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 Exploring CAD Working Environment. 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.

TABLE OF CONTENTS

What I Need to Know 1
What I Know 2
What's In 4
What's New 5
What Is It 6
What's More 14
What I Have Learned 15
What I Can Do 16
Assessment 17
Additional Activity 18
Answer Key 20
References 21

Lesson 1 Exploring CAD Working Environment

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 exploring CAD working environment 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	Q1/W2
Learning Competency Code	TLE_ICTTD9-12CA-Ia-b-1
Learning Competency	**LO 1. Operate CAD software and computer hardware** 1.2 Explore CAD working environment

Learning Objectives:
After going through this module, you are expected to:

1. identify the parts of AutoCAD working environment to its functions;
2. create a storyboard of the different parts of AutoCAD working environment; and,
3. develop traits such as ingenuity, resourcefulness, 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.

1. What is the tool that is located along the top of the application window, above the ribbonand provides direct access to common or defined set of commands?
   A. Ribbon C. Menu Browser
   C. Menu Bar D. Quick Access Toolbar
2. It is a tool that allows you to search for a data or document in a help file or to web.
   A. Ribbon C. File Name
   B. Menu Bar D. Search Bar
3. It is where you enter the commands from the keyboard and where the prompts are displayed.
   A. Status Bar C. Layout Tab
   B. Search Bar D. Command Line Bar
4. Which of the following is found at the bottom left hand corner of the AutoCAD drawing window?
   A. ABS C. WCS
   B. UCS D. WUS
5. It is a tool that can be used to create new objects such as lines and circles.
   A. Ribbon C. Draw Toolbar
   B. Dimensions D. Modify Toolbar
6. What is the default filename of AutoCAD?
   A. .dwg C. .png
   B. .docx D. .pptx
7. What is the user interface element which you can access both unified and product-specific navigation tools?
   A. Status Bar C. Navigation Bar
   B. Layout Tab D. Command line bar
8. Who developed and founded AutoCAD?
   A. John Walk C. John Walker
   B. Jonny Walker D. John Walking
9. Which of the following provides access to Model Spac and each Layout in eachdocument?
   A. Layout Tab C. Navigation Bar
   B. Status Bar D. Command Line Bar
10. It is a type of cursor consisting of two lines that intersect and are used to locate points and selects objects in your drawing.

A. Crosshair
B. Mouse
C. Pan
D. Pointer

11. It is a tool that switches the current workspace to a different one, with its own setof toolbars, palettes, and ribbon panels.
    A. Status Bar
    B. Workplace switching
    C. User Coordinate System
    D. World Coordinate System
12. How do you Save your drawing?
    A. Press CTRL + S
    B. Go to ribbon and look for save icon.
    C. Ask your teacher to save your drawing.
    D. Just close your drawing it will automatically save.
13. Which of the following statement is true?
    A. AutoCAD was founded in 1980.
    B. AutoCAD has only 5 versions.
    C. AutoCAD has also created mobile and cloud-based apps.
    D. AutoCAD was launched at the COMDEX trade show in California.
14. It is the name of the current file you are working on.
    A. Ribbon
    B. File Name
    C. Search Bar
    D. Menu Browser
15. How do you open your existing drawing file?
    A. Ask your parent.
    B. Just open the AutoCAD software.
    C. Go to ribbon and look for your file.
    D. Double click the drawing file icon inside the folder or in any location from yourcomputer.

What's In

Computer Aided Design Review

Hello learners! Have you ever wondered how engineers and architects design buildings or bridges with such detail and precision? They all get little help in Computer Aided Design Software. Let us see if you still remember our previous lesson in module 1.

Directions. Analyze the statement and identify is asked in each number. Write your answer on a separate sheet of paper.

1. What tool is often used for drawing, sketching, and drafting conceptual designs?
   A. CAD B. 2D CADC. 3D CAD D. Solid Modelling
2. Which of the following CAD software allows only a single user to work on a single file at a time?
   A. Single-File-Mode-System
   B. Collaborative-Mode-System
   C. Referenced-File-Mode-System
   D. 3D Wireframe and Surface Modelling
3. What is the tool that can transfer drawing into 3D rendering software?
   A. CAD B. 2D CAD C. 3D CAD D. Solid Modelling
4. Which of the following software tool allows a team of users to collaboratively work with each other's data and see the changes other users make to the data as they go?
   A. Single-File-Mode-System
   B. Collaborative-Mode-System
   C. Referenced-File-Mode-System
   D. 3D Wireframe and Surface Modelling
5. What software is used in 3D animation for games and other presentations?
   A. Single-File-Mode-System
   B. Collaborative-Mode-System
   C. Referenced-File-Mode-System
   D. 3D Wireframe and Surface Modelling

What's New

STORY TIME

Read the brief history of AutoCAD by Luke Kennedy and answer the questions below:

AutoCAD has been available on the market since 1982, making it the first CAD system developed for PCs. This means that AutoCAD has been around longer than Adobe Photoshop or even Microsoft Windows! Before AutoCAD, commercial CAD programs in the 70s ran on mainframe computers or minicomputers, with each user working at a separate graphics terminal. If the designer didn't have access to these, they'd go about drawing using an old-school drafting desk and a T-square.

The company behind AutoCAD, Autodesk was founded in 1982 by John Walker. He and the other 15 co-founders intended to develop five different desktop automation applications, hoping that one of the applications would take off. Their flagship product turned out to be AutoCAD. They launched AutoCAD at the COMDEX trade show in Las Vegas as the first CAD program in the world to run on a PC. By March 1986, only four years after it was introduced, AutoCAD had become the most widely used design application worldwide, a position it still holds today. In its 35 years, AutoCAD has grown substantially. In fact, there has been 31 versions since the first release in December 1982! Over the years, Autodesk added new features and programs to appeal to different professions. The software supports APIs for customization and automation, which enabled the creation of vertical products such as AutoCAD Architecture, AutoCAD Electrical and AutoCAD Civil 3D. In the last five years, Autodesk has also created mobile and cloud-based apps, including AutoCAD 360, Fusion 360, and A360 Viewer. These programs couple design and documentation tools together with the ability to share and collaborate via the Internet.

Source: Luke. "A Brief History of AutoCAD." Scan2CAD, Scan2CAD, 5 Apr. 2018, www.scan2cad.com/tips/autocad-brief-history/.

Based on the underlined word/s choose the correct answers. Write your answer on a separate paper.

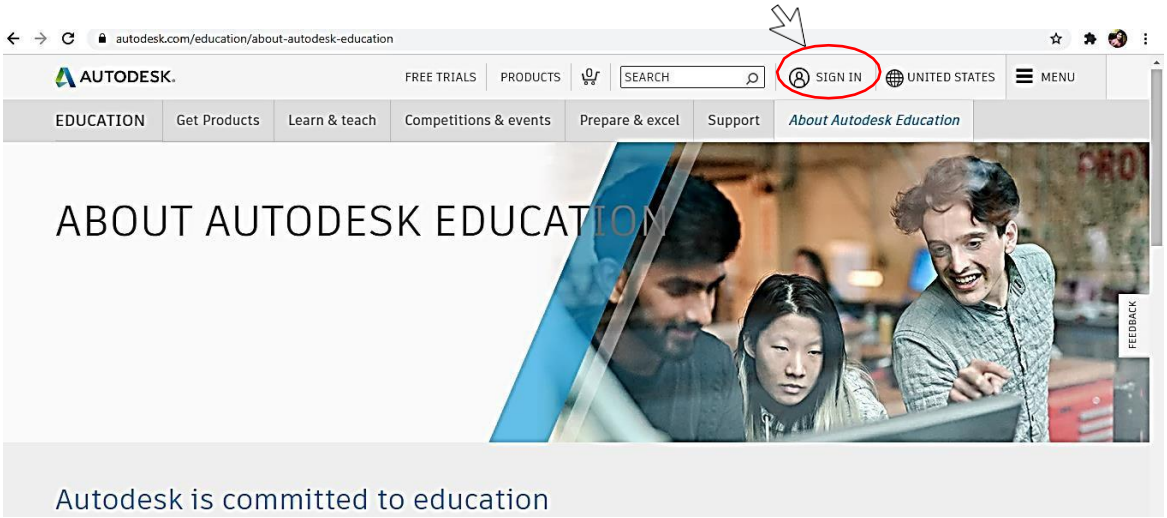
(1) **John Walker** **Johnny Walker** founded the Autodesk in 1982. They launched AutoCAD at the (2) **Philippines** **Las Vegas** **California** as the first CAD program in the world to run on a PC. By March (3) **1890** **1986** **2020,** AutoCAD had become the most widely used design application worldwide, a position it still holds today.

What Is It

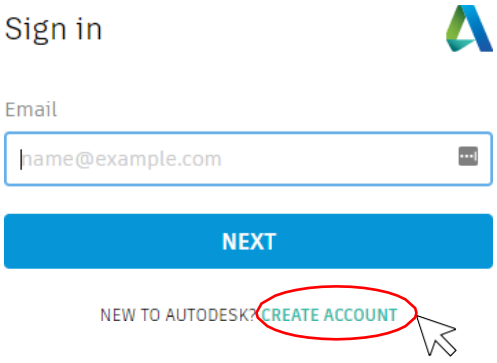
For those learners who have internet access and computer devices, you can follow the steps below on how to get a licensed AutoCAD software.

Steps on how to get licensed AutoCAD software 2021.

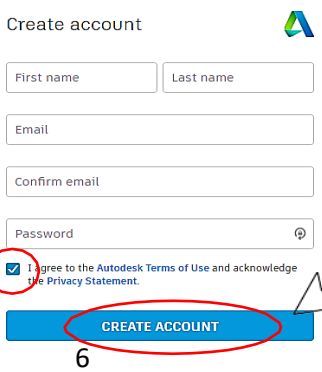
1. Go to Autodesk website
   https://www.autodesk.com/education/about-autodesk-education
2. Click Sign in



3. Click create account



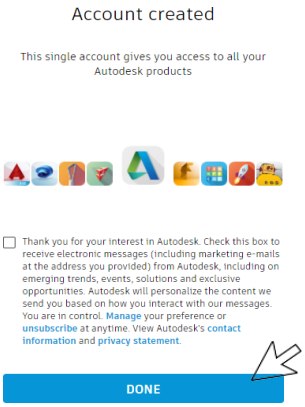
4. Fill up required information



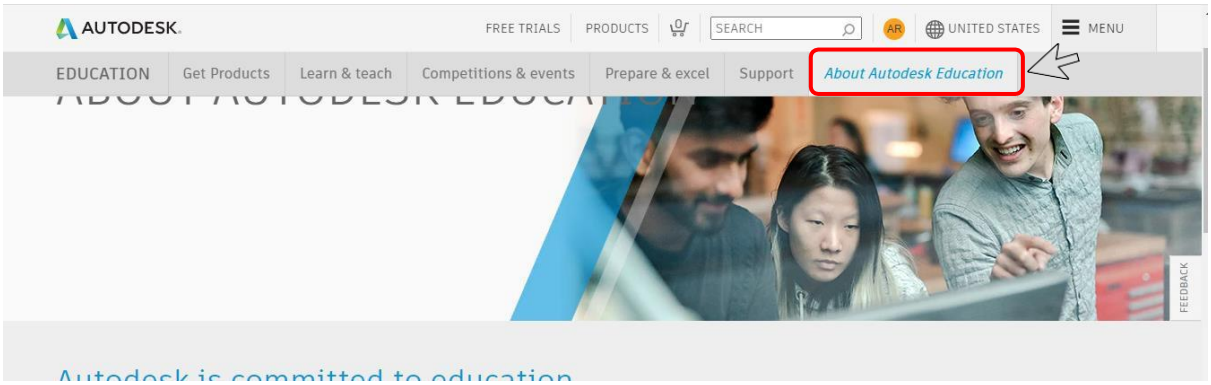
Put check

Select *Create Account*

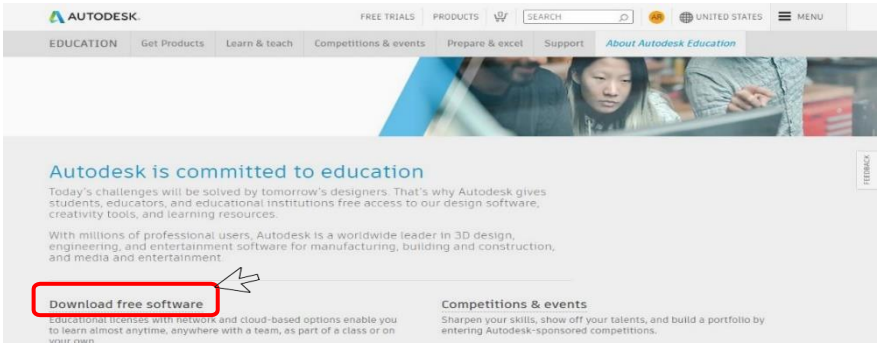
5. Click done



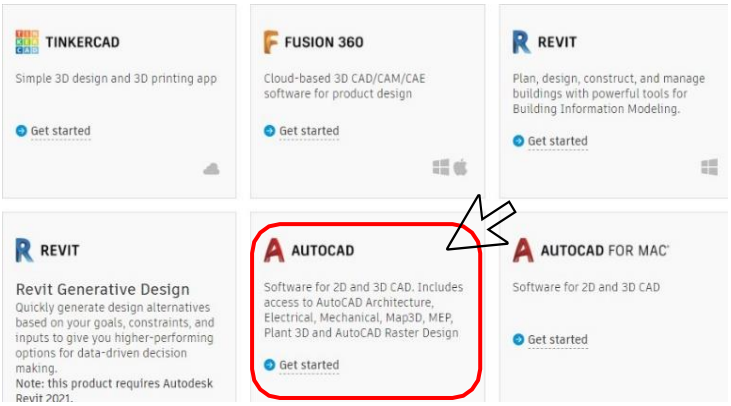
6. Select the About Autodesk Education



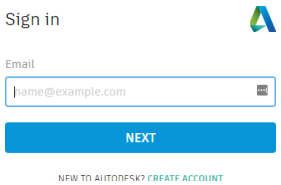
7. Select the Download free software



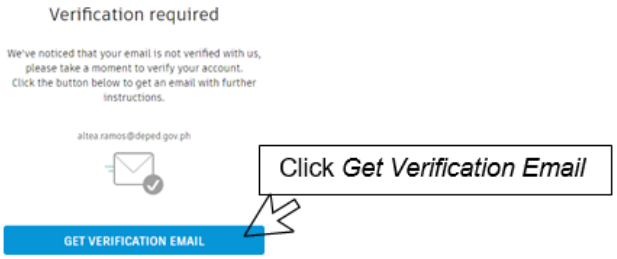
8. Choose the AutoCAD and click the *Get Started.*



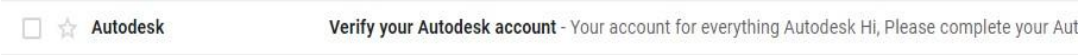
9. Once you select the *Get Started*, the Autodesk will ask you again to sign in.



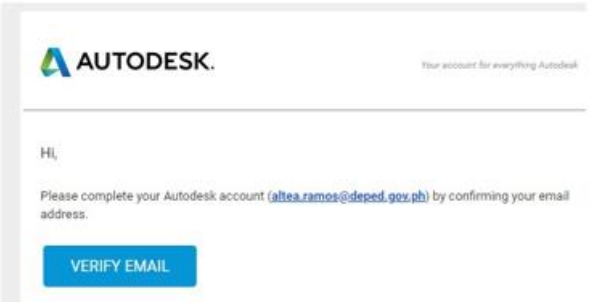
10. Get verification from your email



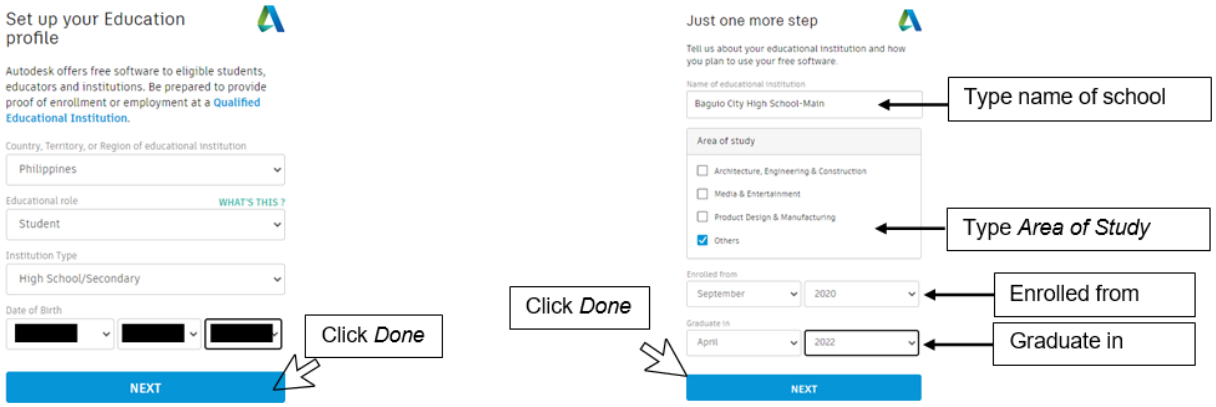
11. Go to your email to verify your account



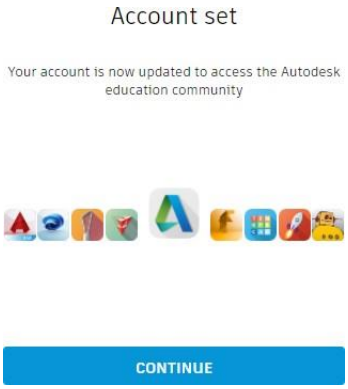
12. In your email verify your account



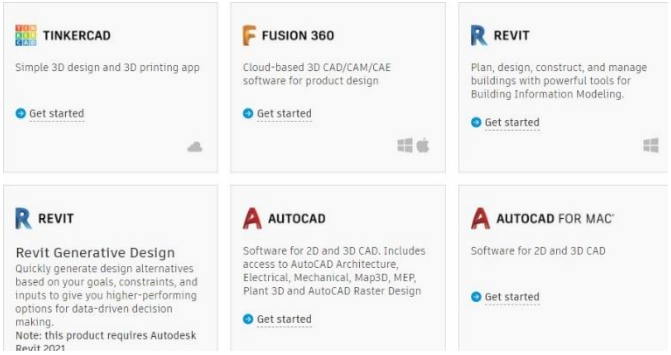
13. Fill in needed information



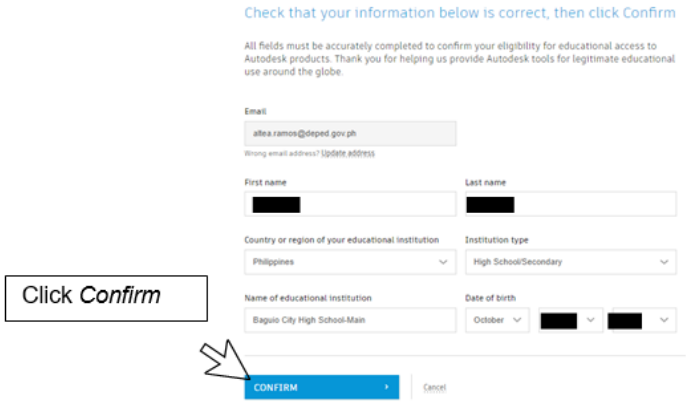
14. Your account is set. Select continue.



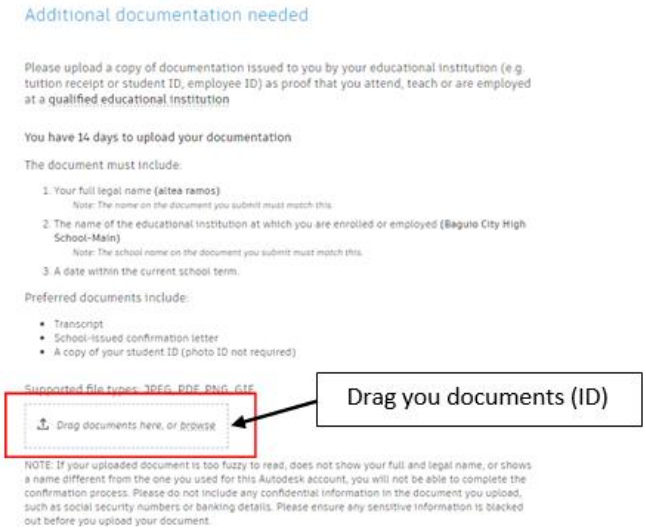
15. Choose again the AutoCAD and select the *Get Started.*



16. Fill in again the required information.



17. Autodesk will ask additional documentation. You can attach your school identification.



18. Check your email of the Autodesk approve your education access.

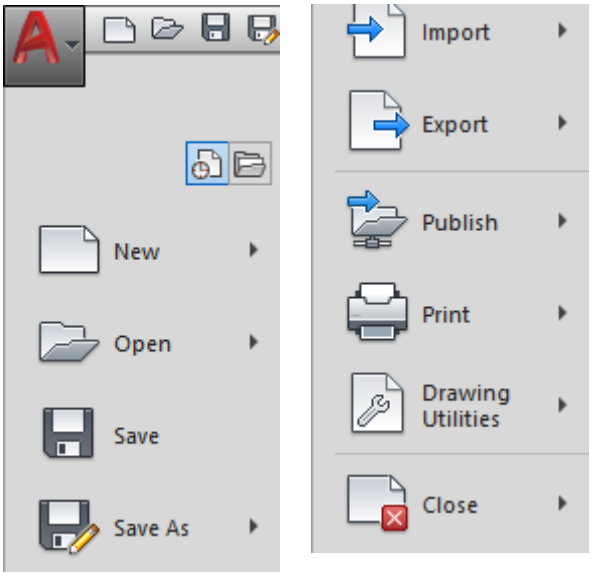
19. Once approved, you can now install your AutoCAD software.

Starting the AutoCAD

There are several ways of launching the AutoCAD program, depending on the preferences and condition you may want to begin. Follow each of the illustrated stepsbelow:

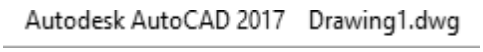
1. From the Start Menu or Window Icon
2. Click the Window icon>Select AutoCAD 2017 or any AutoCAD version installed in your laptop or desktop.
3. From the desktop double-click the AutoCAD icon in your desktop
4. By opening drawing file
   Double click the drawing file icon inside the folder or in any location from yourcomputer.

Let us explore the AutoCAD 2017 Working Environment



1. Menu Browser- Browse all of the classic drop-down menus available inAutoCAD, or perform a real-time search of the menus, menu actions, tooltips, command prompt text strings, and tags. Use the menu browser to browse for recent documents, currently open documents, and commands recently executed from the menu browser.

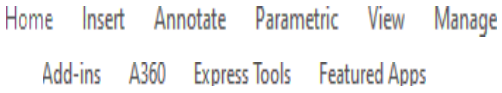
2. File Name- the name of the current file you are working on.



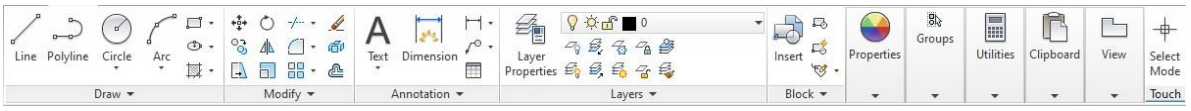
3. Quick Access Toolbar- located along the top of the application window, above the ribbon and provides direct access to common ordefined set of commands

4. Search box- Search for information through keywords or phrases, display the Communication Center panel for product updates and announcements, or display the Favorites panel to access saved topics.

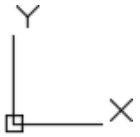
5. Menu Bar- horizontal strip across the top of an application's window



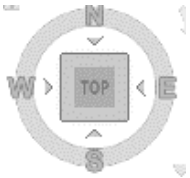
6. Toolbar/Ribbon-provide a single, compact placement for operations/tools that are relevant to the current workplace.



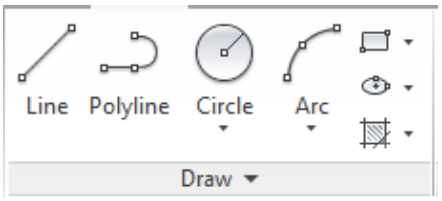
7. User Coordinate System(UCS)- found at the bottom left hand corner of the AutoCAD drawing window.



8. World Coordinate System (WCS)- by default when you starta new (blank) drawing you use the WCS. This indicates your (0,0,0) point

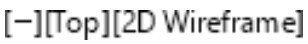


9. Draw commands- used to create new objects such as linesand circles.



10. Modify Toolbar- used to modify the basic drawing objects in some way to suit the image your need.

11. View Port/ View Control- displayed at the top-left corner of each viewport, and provide convenient way of changing views, visual styles, and other settings

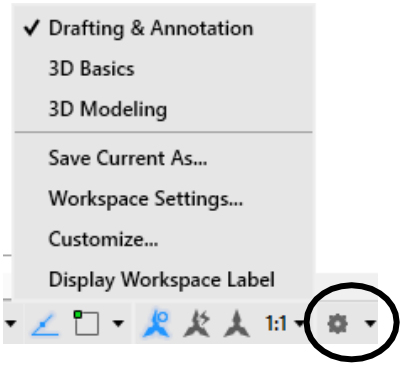


12. Layout Tab-provide access to Model Space and each layout in each document.

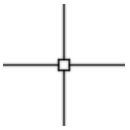
13. Navigation Bar- a user interface element where you can access both unified and product-specific navigation tools.

14. Status Bar- displays cursor location, drawing tools, and tools that affect your drawing environment.

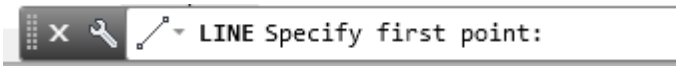
15. Workspace Switching- switches the current workplace to a different one, with its own set of toolbars, palettes, and ribbon panels.



16. Crosshair-a type of cursor consisting of two lines that intersect and are used to locate points and selects objects in your drawing.



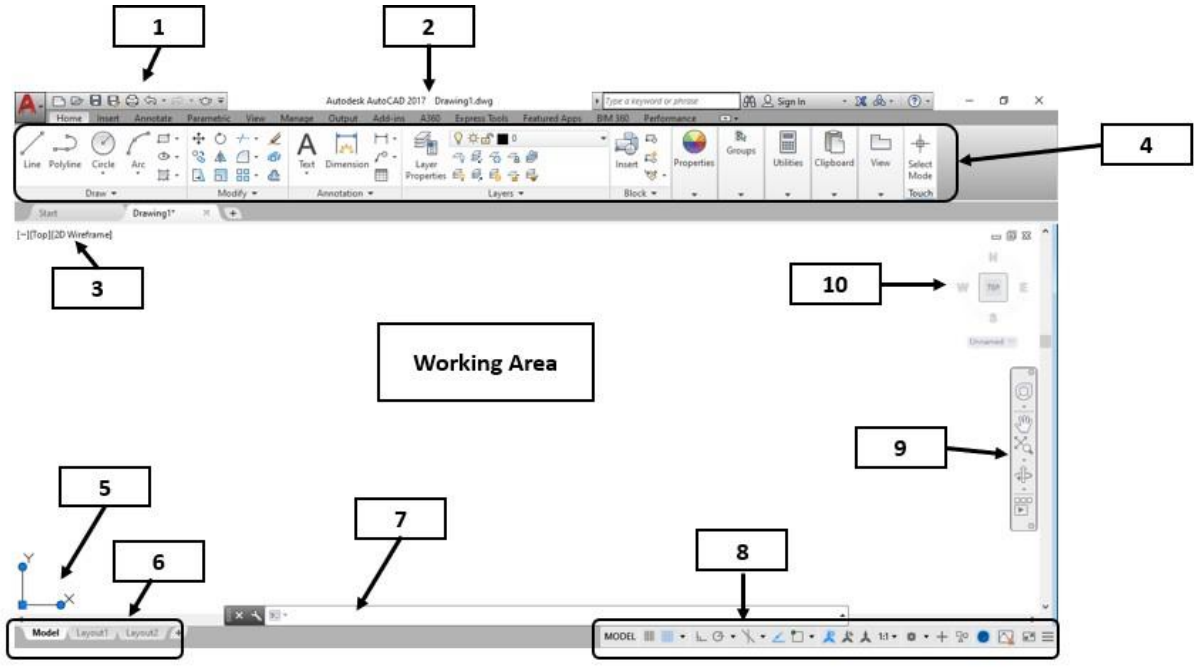
17. Command Line Bar-it is where you enter the commands from the keyboard and where the prompts are displayed. It has a text area where all the previous commands are displayed.



What's More

MISSING NAMES

Directions. Label the parts of the AutoCAD Working Environment. Write your answer on the separate sheet of paper.



What I Have Learned

I -#Hash Tag Mo

Directions. Fill in the blanks with the correct names of the parts of the AutoCAD working environment by placing your answer with a # (Hash Tag symbol). Make sure that your answers are written clearly and spelled correctly. Write your answer in a separate sheet of paper.

1. You can use the _____ if you what to enter the commands from the keyboard.
2. If you want to switch to your current workplace to adifferent one, you can select the _____.
3. You must go to _____ if you want to modify your drawing.
4. If you want to draw a different shape in AutoCAD, you must go to _____.
5. You use the _____ to look for a particular keywords pr phrases.
6. You must click the _____ to save your drawing.
7. Your _____ used to locate points and selects objects in your drawing.
8. The Insert tab are located at the _____. Menu bar
9. Go to _____,to check the name of the current file you are working on.
10. You must click the _____if you want to change your drawing layout.

What I Can Do

Storyboarding

Directions. Create a conversational storyboard on the different parts of AutoCAD working environment. How would you make the flow of your story? Your output will be scored based on RUBRIC below. You draw your own comic strip or use the sample below.

Performance Rubrics

Criteria	Excellent 10	Good8	Satisfactory 5
Content	Content of the project is exceedingly interesting and clearly relevant to the topic.	Content is interesting and relevant to the topic/	Content was mostly copied from a certain reference.
Presentation	Output was done with exceptional attention to details and neatness	Output was done with good care and attention to details and neatness.	The output was done but needs care to detail and neatness.
Organization	Flow of the story is excellent.	Flow of the story is simple.	Flow of the story is confusing.
Originality andcreativity	The whole story strip is unique, and its layout isexceptionally attractive.	The story strip is a duplicate copy, and the layout is attractive.	The story strip is a copied story from a reference and poor design.

Post-Assessment

Multiple Choice.

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

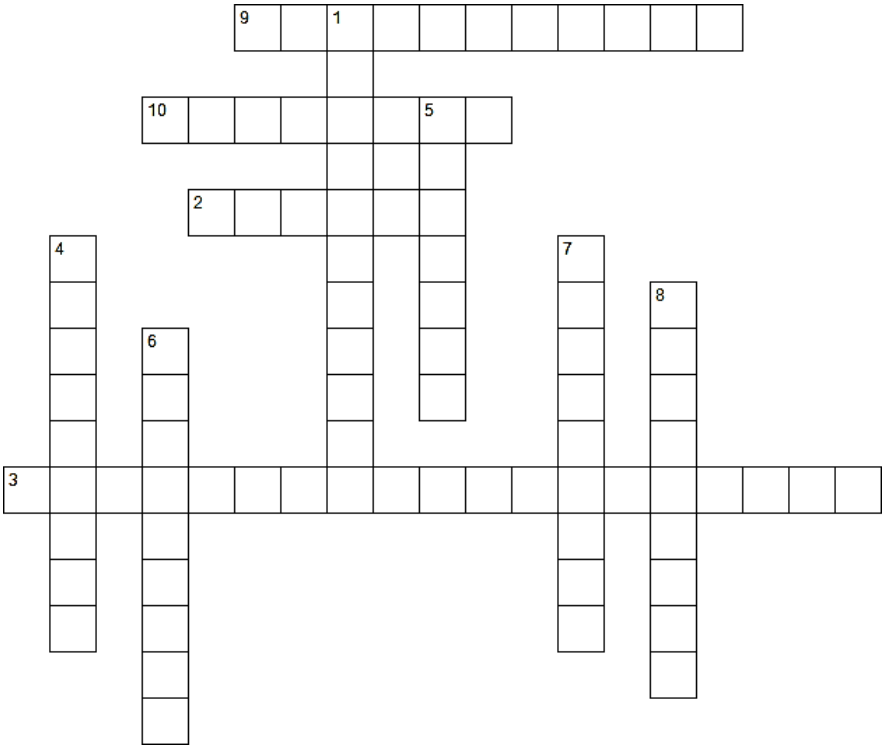
1. Which of the following statement is true?
   A. AutoCAD was founded in 1980.
   B. AutoCAD has only 5 versions
   C. AutoCAD has also created mobile and cloud-based apps.
   D. AutoCAD was launched at the COMDEX trade show in California.
2. It is where you enter the commands from the keyboard and where the prompts aredisplayed.
   A. Status Bar
   B. Search Bar
   C. Layout Tab
   D. Command Line Bar
3. How do you Save your drawing?
   A. Press CTRL + S
   B. Go to ribbon and look for save icon.
   C. Ask your teacher to save your drawing.
   D. Just close your drawing it will automatically save.
4. What tool is located along the top of the application window, above the ribbonand provides direct access to common or defined set of commands?
   A. Ribbon
   B. Menu Bar
   C. Menu Browser
   D. Quick Access Toolbar
5. It is a tool that allows you to search for a data or document in a help file or to web.
   A. Ribbon
   B. Menu Bar
   C. File Name
   D. Search Bar
6. What is the default filename of AutoCAD?
   A. .dwg
   B. .docx
   C. .png
   D. .pptx
7. Which of the following is found at the bottom left-hand corner of the AutoCADdrawing window?
   A. ABS
   B. UCS
   C. WCS
   D. WUS
8. It is a tool that can be used to create new objects such as lines and circles.
   A. Ribbon
   B. Dimensions
   C. Draw Toolbar
   D. Modify Toolbar
9. It is a tool that switches the current workspace to a different one, with its own setof toolbars, palettes, and ribbon panels.
   A. Status Bar
   B. Workplace switching
   C. User Coordinate System
   D. World Coordinate System

10. Who developed and founded AutoCAD?
    A. John Walk
    B. Jonny Walker
    C. John Walker
    D. John Walking
11. How do you open your existing drawing file?
    A. Ask your parent.
    B. Just open the AutoCAD software.
    C. Go to ribbon and look for your file.
    D. Double click the drawing file icon inside the folder or in any location from yourcomputer.
12. It is the name of the current file you are working on.
    A. Ribbon
    B. File Name
    C. Search Bar
    D. Menu Browser
13. Which of the following provides access to Model Space and each Layout in eachdocument?
    A. Layout Tab
    B. Status Bar
    C. Navigation Bar
    D. Command Line Bar
14. What is the user interface element which you can access both unified and product-specific navigation tools?
    A. Status Bar
    B. Layout Tab
    C. Navigation Bar
    D. Command line bar
15. It is a type of cursor consisting of two lines that intersect and are used to locatepoints and selects objects in your drawing.
    A. Crosshair
    B. Mouse
    C. Pan
    D. Pointer

Additional Activity

CROSSWORD PUZZLE

Directions. Complete the crossword by filling in a word that fits each clue. Write your answer on a separate sheet of paper.



ACROSS

2 It provides a single, compact placement for operations/tools that are relevant to the current workspace.
3 It is found at the bottom left-hand corner of the AutoCAD drawing window.
9 It is where you enter the commands from the keyboard andwhere the prompts are displayed
10 It is the name of the current file you are working on

DOWN

1 It is a client-software that lets users read or scan documents on the World Wide Web
4 It displays the cursor location, drawing tools, and tools that affect your drawing environment.
5 It is the horizontal strip across the topof an application's window.
6 It is a tool that allows you to search for a data or document in a help fileor to web.
7 It provides access to Model Space andeach Layout in each document.
8 It is a type of cursor consisting of twolines that intersect and are used to locate points and selects objects in your drawing.

Answer Key

What I Know

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

What's In

1. B
2. A
3. C
4. B
5. D

What's New

John Walker
Las Vegas
1986

What's More

1. Quick Access Toolbar
2. File Name
3. View Port/View Control
4. Ribbon
5. UCS/User Coordinate System
6. Layout Tab
7. Command Line bar
8. Status Toolbar
9. Navigation Bar
10. WCS/World Coordinate System

What I Have Learned

1. Command Line bar
2. Workspace switching
3. Modify toolbar
4. Draw toolbar
5. Search box
6. Menu browser
7. Cursor
8. Menu Bar
9. File Name
10. Layout Tab

What I Can Do

Performance output will be evaluated through given rubrics

Assessment

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

Additional Activity

Across
2 Ribbon
3 User Coordinate System
9 Command Line
10 File Name
Down
1 Menu Browser
4 Status bar
5 Menu Bar
6 Search Box
7 Layout Tab
8 Crosshair

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For inquiries or feedback, please write or call:

Department of Education - Bureau of Learning Resources (DepEd-BLR)
Ground Floor, Bonifacio Bldg., DepEd Complex
Meralco Avenue, Pasig City, Philippines 1600
Telefax: (632) 8634-1072; 8634-1054; 8631-4985
Email Address: blr.lrqad@deped.gov.ph * blr.lrpd@deped.gov.ph
Telefax: (632) 8634-1072; 8634-1054; 8631-4985