WILLIAMSBURG HIGH SCHOOL FOR ARCHITECTURE AND DESIGN

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Advanced AutoCAD

Component	Description and time allotment
Aim #33 (Investigation)	Why is it important to use layers in AutoCAD?
Standards	**HSG-COA.A.2** Experiment with transformations in the plane Represent transformations in the plane using e.g. transparencies and geometry software **HSG-MG.A.1** Apply geometric concepts in modelling situations use geometric shapes, their measures and their properties to describe an object **RI.11-12.7** Integration of knowledge and ideas Integrate and evaluate multiple sources of information presented in different media or formats as well as words in order to address a question or solve a problem
Objectives	SWBAT ● Identify when we should turn layers on and off in AutoCAD ● Extrude multiline text
Motivation	Reviewed everything in 3D we always felt and grasped objects in 2D however we never understood how to depict that 3rd dimension on paper. In the past, when the greatest explorers of all time assumed the world was flat because they didn't have the technology or the thought process to determine what is 3D and what isn't on paper. However today I

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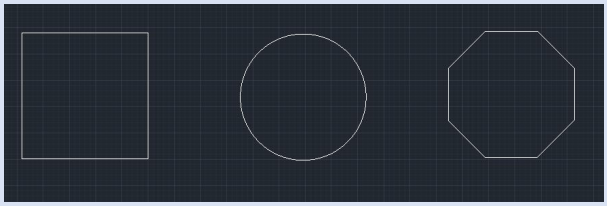
	have a question for you. What is the difference between 2D and 3D?
Do Now (optional)	Extrude the following objects by 5’  Use a student who completed the do now as an example to show the class how to extrude shapes. The students screen will be showed to the entire class. And they will be in charged of explaining step by step to the class what they did. After If it was explained correctly segway into the motivation.

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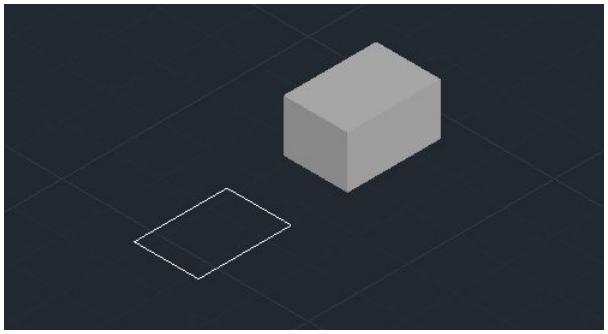
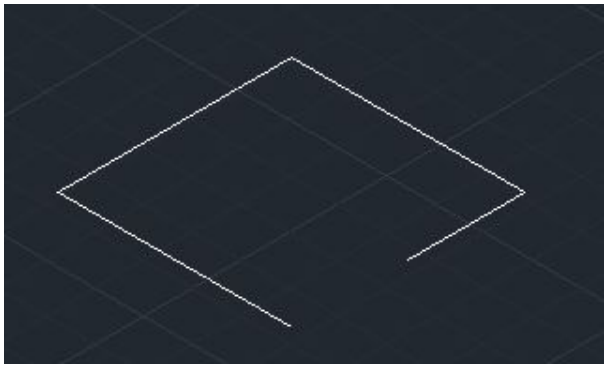
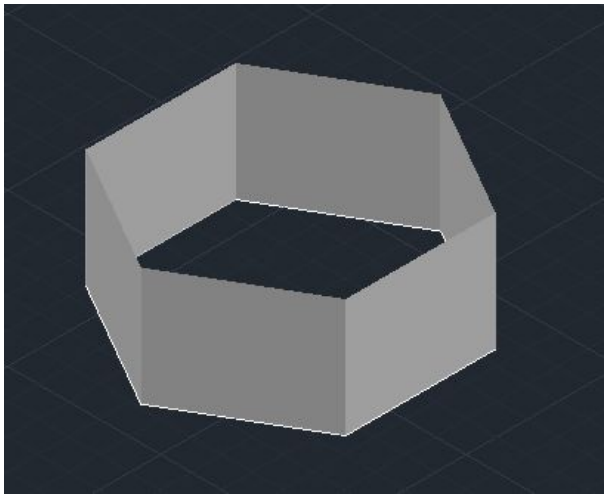
Launch of Lesson/Mini Lesson	To switch between our 2nd and 3rd dimension, we used the extrude command in autocad which basically enables us to give our object depth, or height in other terms a 3rd dimension in addition to our length and width. So we know what the command does, but: **Q: What do you think it means to extrude?** **A: Extrude is to press, push, or expel something out.**  **This is an example of an ideal extrusion, we want our object to appear solid all the way through.** <u>Requirements for Extrusion</u> It is important that before we extrude, a 2d shape meets certain requirements. The first requirement is that our object must be closed.  **Q:What do you think will happen if I try to extrude this polyline?**

A:

Another requirement is that if we are extruding a polyline, our lines must be joined.

Q: Now what do you think will happen to this hexagon if we extrude it without joining these lines?

A:



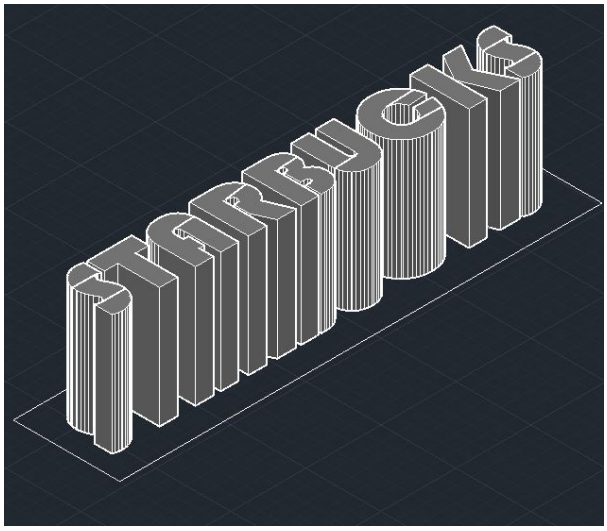
<u>Demonstration on how to extrude text</u>

Step 1- Create a Text that is will be large enough to see when converted to 3D I recommend using Bahaus 93.

Q: Why do you think it would be easier to extrude a text that looks like this?

A: The text is very bold and when extruding it will help to see it better.

Step 2- Create your text and draw a rectangle around your text.

	Step 3- Go to the Express tools tab under the text panel select modify text and explodethe text. Step 4- navigate to a different view where you can see the extrusion and use the extrude command to extrude the chosen distance. 
Summary	**Q: What are two requirements we must have before we extrude a shape?** **A: We must make sure our shape is closed, and we have to make sure our polylines are joined.** **Q: Which command must we use before we extrude a multi-line text?** **A: We must use the Modify text explode command.**
Immediate Application	Return to "Aim 33" CAD Drawing Create a multiline text using font Bauhaus 93 size 2' with your first and last name, and extrude it by 1'. Then extrude the two polygons in your CAD drawing by 9'.
Immediate Application II	Students will resume working on their floor plan and conversion their bubble diagram into CAD
Accomodations	Video for extruding text is in the drop box for students to reference who

	missed the beginning of the lesson, or who are more of visual learners.
Homework	Think of yourself as a salesman attempting to sell your villa, write 2-3 Paragraphs describing your villa and the purpose for your room layouts on all the floors. Due next week Monday.