Digital Modelling Methods - ART 3367/3396
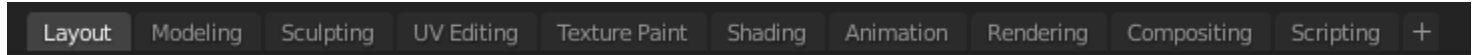Instructor: Daniel Calderon (dacaldera@gmail.com)

Interface

File   Edit   Render   Window   Help
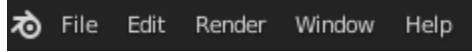
Click the Blender icon in top left
Click each of the menus along the top and glance at the contents

Layout   Modeling   Sculpting   UV Editing   Texture Paint   Shading   Animation   Rendering   Compositing   Scripting   +
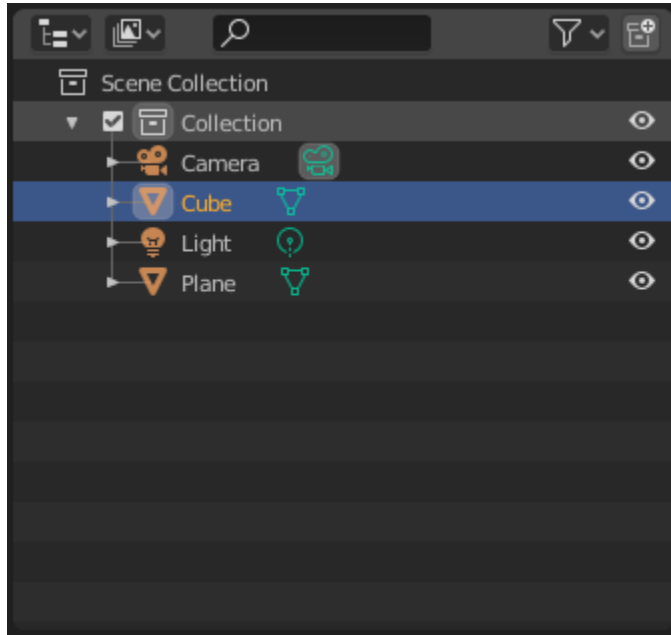
Click each viewport tab of the top bar one by one
Add a new tab to the top bar by clicking the plus sign
Delete a new tab by right clicking the tab and clicking on delete
Rename the tab by double clicking on the name
cycle through the tabs with **ctrl+page up** and **ctrl+page down**

Scene Collection
  Collection
    Camera
    Cube
    Light
    Plane

Outliner Area- shows the hierarchy of elements inside the scene
Collection - An organizational bucket or group that keeps elements together
Right click on the collection and select delete to ungroup the items within
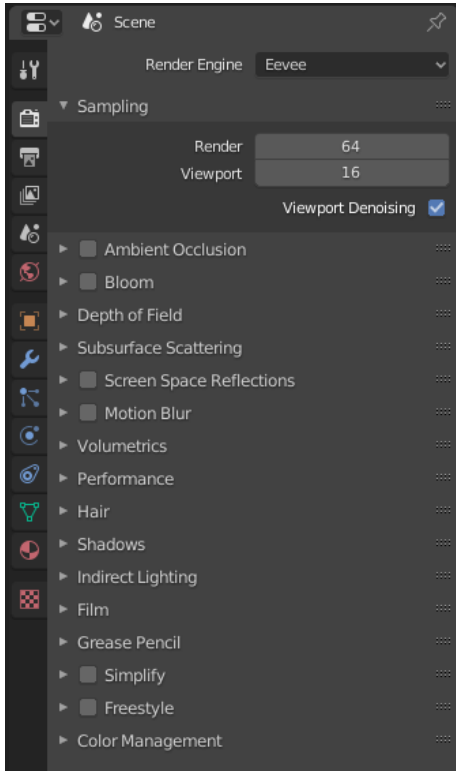right click on collection and select delete hierarchy to delete collection and contents
right click on collection and add new collection to add an empty bucket/group
collection items are sorted alphabetically
Items can be filtered in various ways

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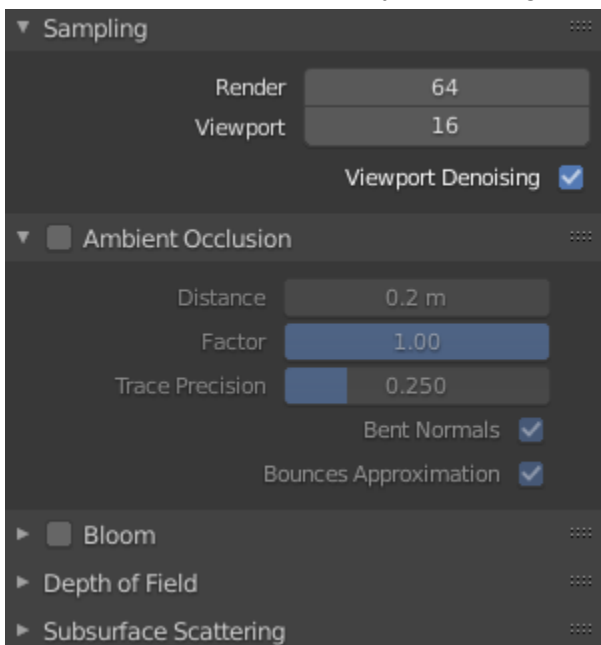Instructor: Daniel Calderon (dacaldera@gmail.com)

Properties Area
Lets quickly click on each tab in the properties tab header to browse their contents
Default panel is the one with the tools at the top
scroll through the tabs using **ctrl+mouse wheel**
ctrl+tab and **ctrl+shift+tab** cycles through each tab, but mouse must be hovering over the panel area

Panels in the properties area
show or hide the panel by pressing the little arrow
show hide the panel with "**a**" key while hovering over it
Ctrl+click the arrow to hide all except the one being clicked
click and drag over all of the panels to open them all

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resize the entire region of sub panels by middle mouse button click and drag inside the region
reset the panel zoom with the "**home**" key
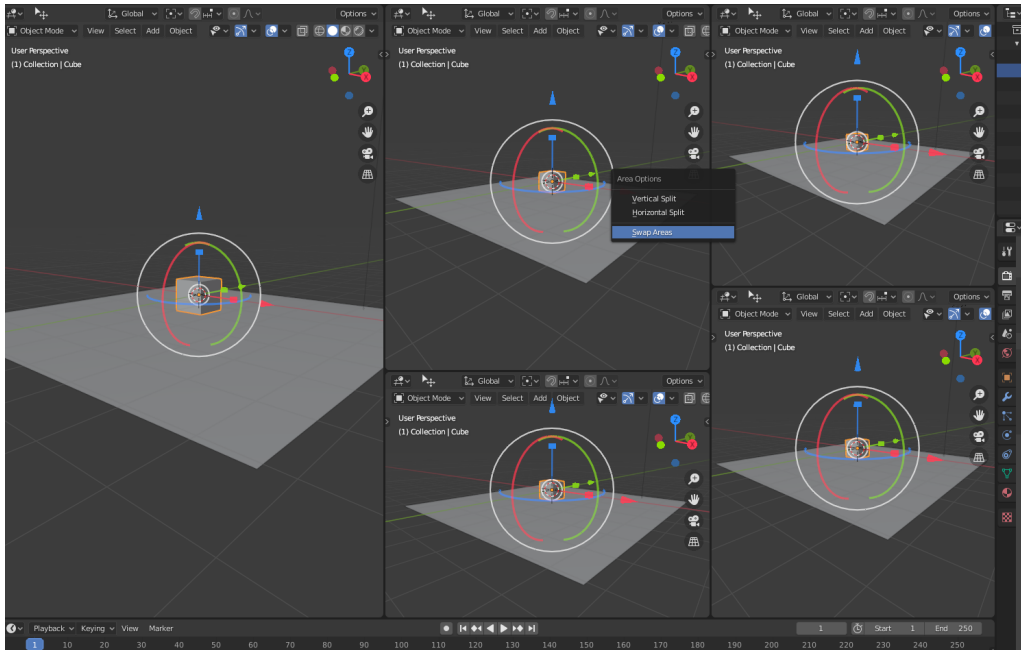
Splitting areas with right click
Joining areas with right click
splitting areas with corner
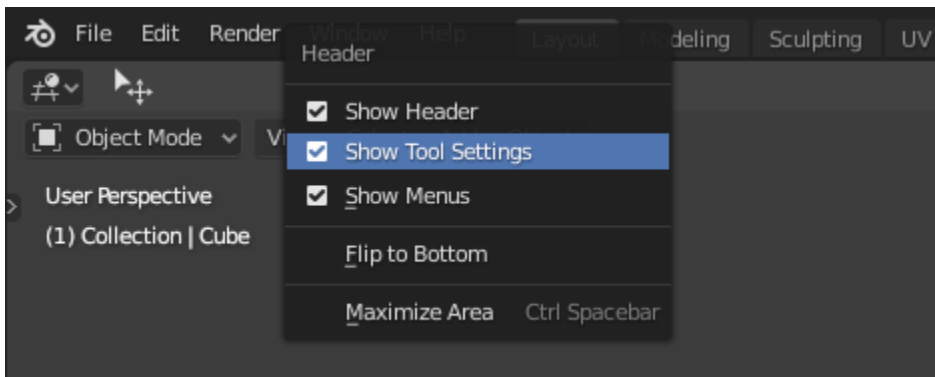joining areas with corner
more area controls in the view->area menu
Notice where your mouse is hovering is the area affected
toggle quad view **ctrl+alt+q**
toggle maximum screen size **ctrl+spacebar**
toggle maximum full screen **ctrl+alt+spacebar**

Main editor window
right click and hide the header
click the tiny arrow to reveal the header again
toggle the tool settings in the view-> menu or by right clicking in the header
try flipping the header to the bottom of the area and back to the top
Click "**t**" to show and hide the toolbar
click "**n**" to show and hide the sidebar
resize the toolbar or side bar and drag to zero to hide it, click the small arrow to show it

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Changing the editor type with the dropdown menu in the top left corner
Try mimicking a different viewport tab by changing the editors and splitting the windows

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Values
press backspace to zero out the value
press "**-**" to invert the value to negative
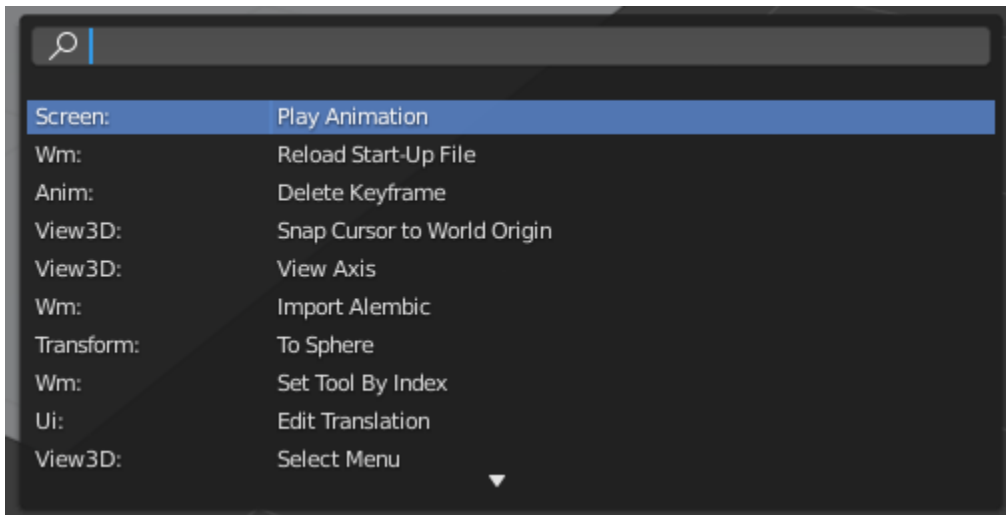**ctrl+mouse wheel** to increment value in steps
click left mouse button and drag over multiple text input boxes to change all the values at once

While dragging values or objects
hold **ctl** to snap to increments
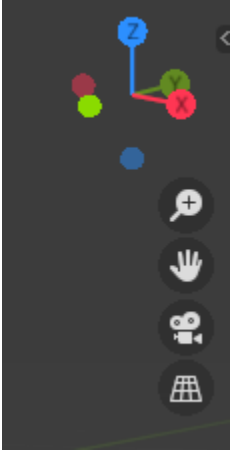hold **ctrl+shift** to snap to small increments
hold **shift** for fine adjustment

Searching for a command or menu item: press **F3** to bring up the search menu

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Orbiting the view
use the Middle mouse button to orbit the view
Shift+middle mouse button to pan the view
ctl+middle mouse button to zoom the view
if you get very lost in the view click the object in the hierarchy and View-->Frame selected
The navigation icons can be used for the same purposes
Alt+mmb+drag to snap the view to orthogonal positions
Click the icons in the viewport window to achieve the same effects
The perspective vs parallel button toggles between the two styles
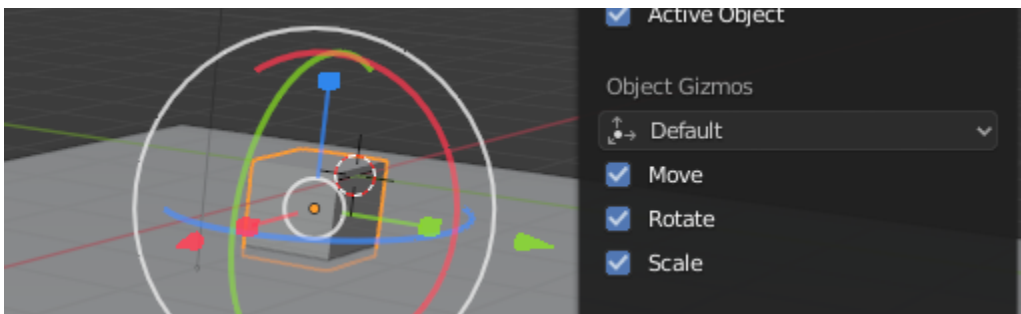

Toggle the x ray mode by clicking the x ray icon

Toggle between the different viewport shading modes by clicking the 4 icons at the top right of the window
Let's look at some of the settings for each shading mode

Grab the cube with "**g**"
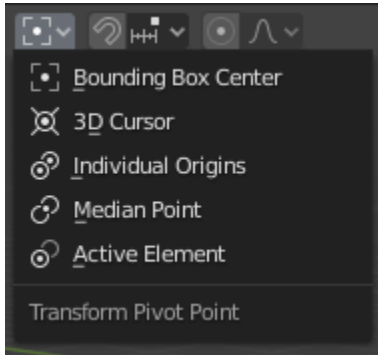grab and constrain the movement to an axis press x, y, or z
scale with "**s**" and constrain the same way
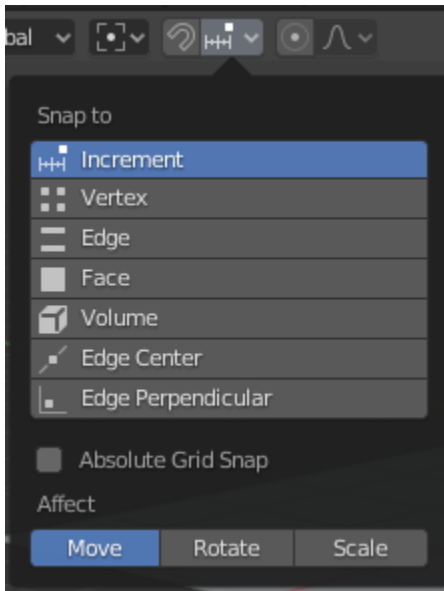rotate with "**r**" and constrain the same way
The gizmos can be enabled and allow transforming the object similarly

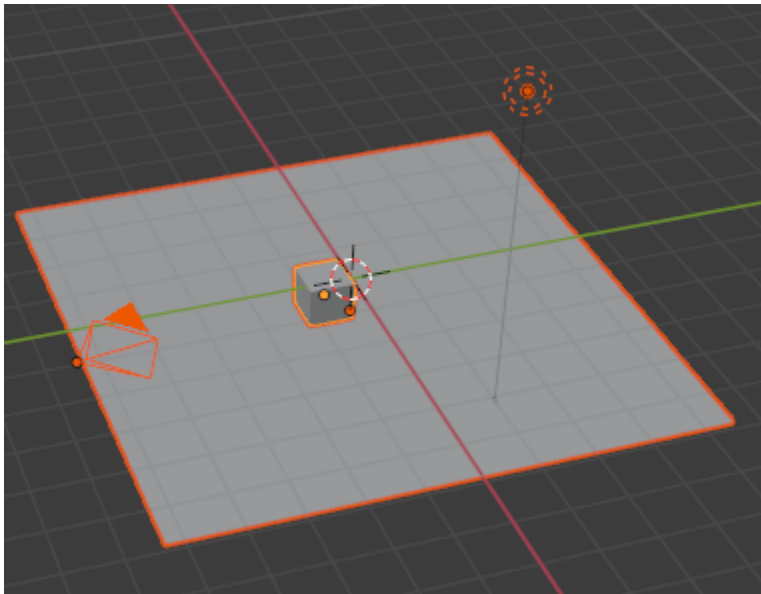**Digital Modelling Methods - ART 3367/3396**
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Adjust the pivot locations for the transformations with the drop down menu

Adjust Grid snapping with the magnet icon

Select all objects with the "a" key
deselect all objects with the alt+a keys
Hold shift and click to select multiple objects. Last selection is the active object

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hold shift and select a selected item to deselect it
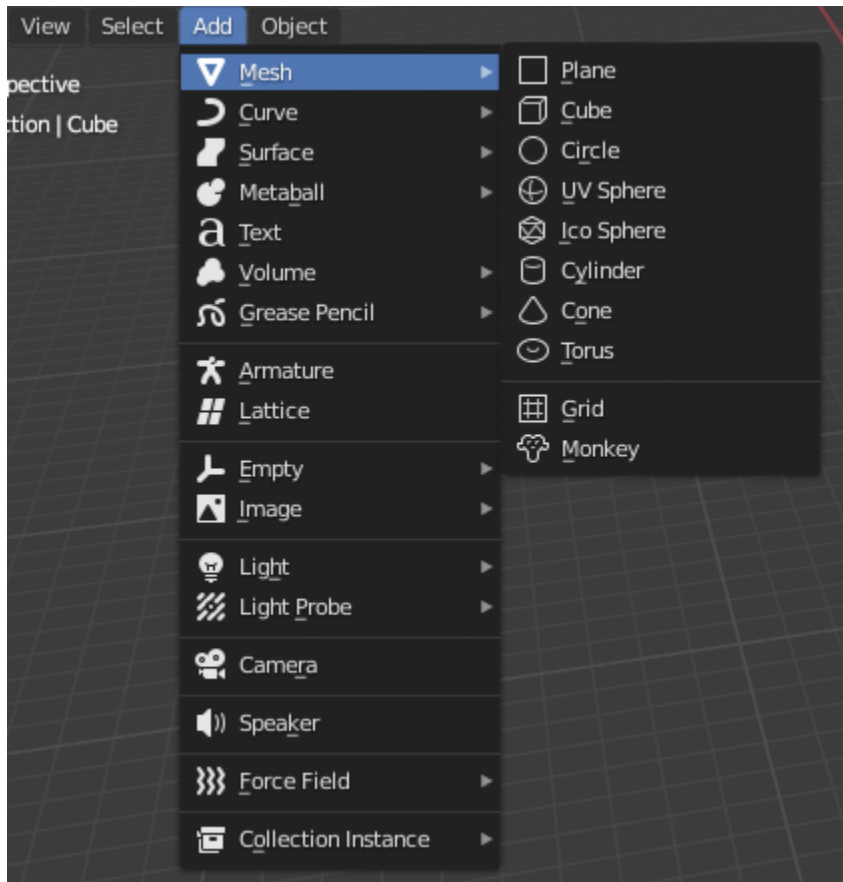click on empty space and drag to box select

3D cursor tool
click to place the 3D cursor in 3d space
3D cursor will stick to geometry surfaces
3D cursor can be altered with the SideBar View Tab under the 3D cursor panel precisely

Adding a new shape to the scene
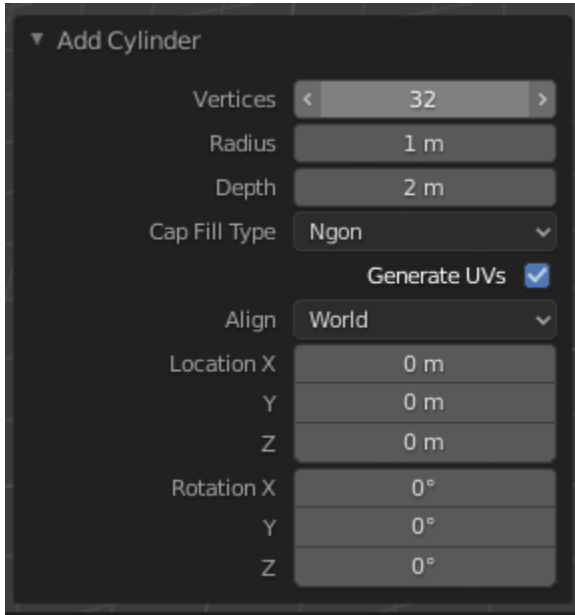click add->mesh->and select a primitive type
Click the shape and delete it by pressing delete key
Add a new shape by pressing **shift+a** → mesh
Click the shape and delete it using the x key (will be prompted)

View the Last Action Performed dialog box that appears when adding a shape and try changing the settings
Once you move on from the dialog box it goes away and can't be brought back

To duplicate a shape select the shape and then press **shift+d** or object → duplicate object
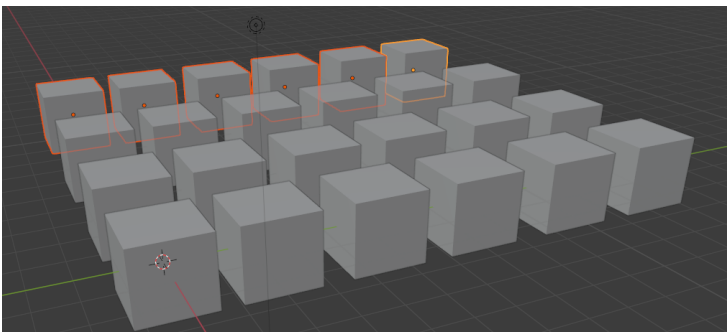While duplicating, the object can be constrained to an axis by pressing x, y, or z.
While duplicating, it can also be scaled by pressing "s" or rotated by pressing"r"
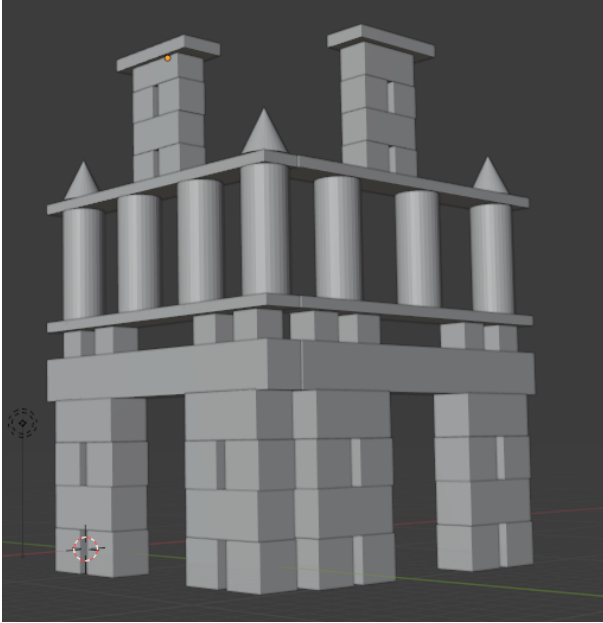Try duplicating many cubes in a perfect row along an axis
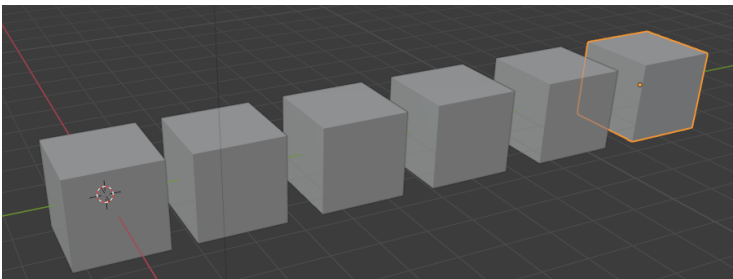
Next, try selecting the entire row of cubes and duplicating them again along the perpendicular axis

Finally,
Try building a castle type structure by adding, duplicating, scaling, grabbing, and rotating basic shapes:

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HomeWork Sheet

In the default scene, click the cube, press the "s" key, press the "y" key, what happens? _____
What is the name of the setting to be able to see through the objects in the scene? _____

In the Layout Workspace → Main Area → Header → List the Transformation Pivot Types:
_____
_____
_____
_____
_____

Which key should I press on the keyboard to Zoom while holding the middle mouse button to zoom?   _____

In the default scene, how many objects are in the Collection group? _____ and what are their names?:
_____
_____
_____

How do I deselect everything in the scene? Which key combination? _____

How many viewport shading modes are there? _____

See if you can find the default values for each of these:
1. Layout Workspace → Properties Area → Output Properties tab → Dimensions Panel → End: ____
2. Sculpting Workspace → Header → Tool Settings → Strength: ____
3. Layout Workspace → Header → Viewport Overlays dropdown → Scale: ____
4. Layout Workspace → Sidebar → Item tab → Dimensions Panel → Y: ____
5. Layout Workspace → Footer → Verts: ____

In the Layout Workspace → Main Area → click add → Mesh → uvSphere → what are the default values for the following:
● Segments: ____
● Rings: ____
● Radius: ____