

Unit 1 - Getting started with Blender

Lesson 4 - Moving things around in Blender

CG Cookie Videos in this Lesson

These videos are part of the [Free Blender Basics download](#), or can be [streamed online here](#).

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|-------------------------------|-------|
| ● Basic 3D Transformations | 5 min |
| ● Single Axis Transformations | 2 min |
| ● Advantages of Using Hotkeys | 1 min |
| ● Adding and Removing Objects | 2 min |
| ● The 3D Cursor | 2 min |

Key Training

- The 3 basic transformations of any object - translation, rotate, scale.
- The x,y,z axis of an object and using the translation arrow.
- The importance of use of hotkeys in blender.

Instructor Focus and Tips

- Get the students comfortable transforming objects. Keep coming back to this over the next few lessons to reinforce the concepts. *Practice this with the students.*
- Standard 3D-axis colors are red, green and blue. Similar to other 3D software.
 - The X axis is red,
 - the Y axis is green
 - and the Z axis is blue.
- Demonstrate good blender practice of using one hand on the mouse and one hand on the keyboard.

Pro Tip: Get students in the habit of using the Delete key instead of the X key to delete objects. I have had students delete objects when they wanted to move it on the x-axis and have had other students move objects on the x-axis instead of deleting the object.

Student Activities and Assignments

- Students should get used to using the manipulator widget and hotkeys to move, rotate and scale objects. After watching *the Basic 3D Transformations*, *Single Axis Transformations*, and *the Advantages of Using Hotkeys* videos, give students time to practice using the scale, move and rotate translations on the cube and other Blender objects.

- After watching the *Adding and Removing Objects and The 3D Cursor* videos give the students time to practice adding and removing objects. Have the students also go back and practice moving, rotating and scaling the added objects.

Blender Terminology, Commands and Hotkeys Introduced

- Translate or Move Object (G key)
- Rotate Object (R Key)
- Scale Object (S Key)
- Delete (X or Delete Key)
- Add Objects (Shift A)
- Move Cursor to Center (Shift S)

BellRinger Prompts and Ideas

- List some of the different ways to transform an object in blender.
- List some of the different ways to add objects in blender.
- Who or what is Suzzane?

Exit Ticket Prompts and Ideas

- How comfortable are you moving, rotating and scaling object in Blender?
- How comfortable are you adding and removing objects in Blender?

Learning Targets

- Student can use the translate, scale and rotate transformations.
- Student can add and remove objects.

Extended Learning Activity

- Have the students figure out the difference between UV Sphere and Iso Sphere while practicing inserting objects.

Rubric

| | Beginning | Developing | Accomplished | Exemplary |
|---|--|--|---|---|
| Transforming objects using Move, Rotate and Scale | Student has received demonstration on transforming objects using Move, Rotate and Scale. | Student can transform objects using move, rotate or scale with assistance, | Student can transform objects using move, rotate or scale without assistance. | Student can transform objects using move, rotate or scale without assistance and can explain to others. |
| X, Y, Z Constraints | Student has received demonstration on transforming objects using X,Y,Z Constraints. | Student can transform objects using X,Y,Z constraints with assistance. | Student can transform objects using X,Y,Z constraints without assistance. | Student can transform objects using X,Y,Z constraints without assistance and can explain to others. |
| Adding and removing objects | Student has received demonstration on adding and removing objects. | Students can add and remove objects with assistance. | Students can add and remove objects without assistance. | Students can add and remove objects without assistance and can explain to others. |

Aligned Standards

Standard 1: 3D Modeling Application Interface

- **Objective 1: Introduce basic 3D terminology and the 3D application interface.**
 - o Indicator 1: Know 3D modeling terminology
 - o Indicator 2: Identify parts of the 3D application in
- **Objective 2: Manipulation of 3D application interface**
 - o Indicator 1: Use application interface
 - o Indicator 2: Navigating 3D space
- **Objective 3: Manipulation of objects**
 - o Indicator 1: Selecting and transforming objects
 - o Indicator 2: Adding and removing objects