Erasmus+
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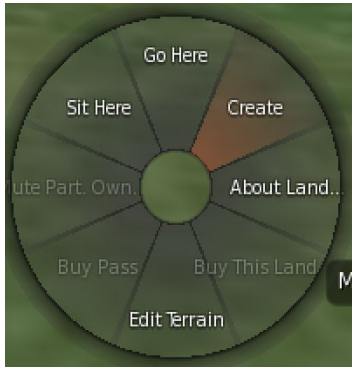
4. Generating 3D Content

3D OBJECTS

- ✔ One way to create 3D objects, is by using the built in capabilities of the 3D Viewer Environments.
- ✔ They allow to create several basic 3D objects, known as primitives prims (boxes, cones, cylinders, spheres, pyramids) and manipulate them.
- ✔ Additionally they give the option to combine (link) multiple primitive prims, to create more complex objects.

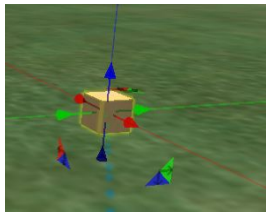
CREATE AND EDIT

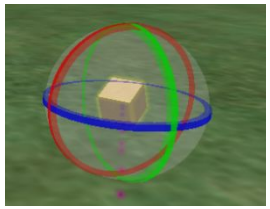
- ✔ Creating prim objects is as simple as right clicking on any location in the screen and selecting “create”. A menu will appear and the user can select one of the basic shapes.
- ✔ To Edit an object, users can right click on it and select “Edit”. The menu that appears has multiple tabs that can be used to manipulate various aspects. In the first tab, you have the option to give the object a name and description.

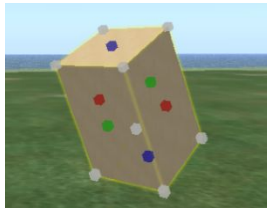


EDIT PRIMS

- While the object is selected, you can:
  - use the mouse to move it around (towards one of the 3 axis),
  - rotate it (press and hold Ctrl to show the rotation axis),
  - or resize it (press and hold Ctrl+Shift to show the resize buttons on edges).
  - You can also go to the second tab of the edit menu and adjust the Position, Rotation and Size values.

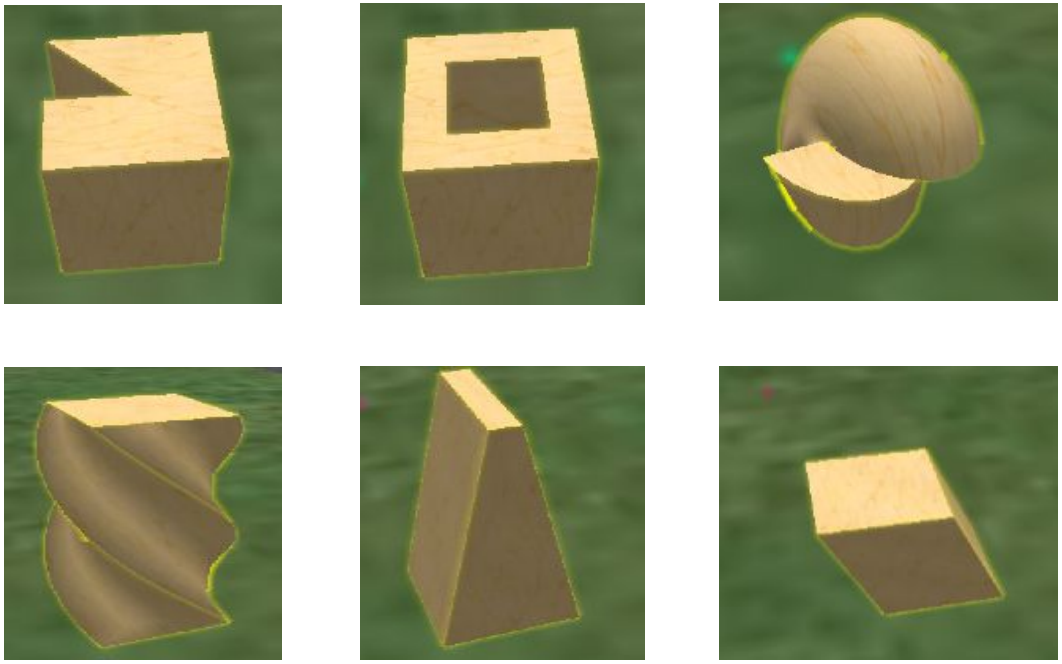






MANIPULATING PRIMS

- You can further Change the shape of a basic prim - Object - by modifying the values for: Path Cut, Hollow, Skew, Twist, Tapper, Top Shear:



LINKED SETS

- ✔ You can select multiple prim objects (while keeping the Shift key pressed, click each one) and then click the “Link” option in the edit menu to combine them together to a complex object (a linked set of prims).
- ✔ The linked set is going to behave as a single object (e.g. when you try to move it around).
- ✔ The last prim you had selected when you created the linked set is called the “root” prim of the set.
- ✔ If you have a linked set and want to manipulate one of its “prim” parts, check the “edit linked” checkbox before selecting it.
- ✔ Notice when selecting a prim of the set, that its linked id is displayed.

OBJECT MANAGEMENT

- ✔ After creating a simple or complex object you can take it in your inventory by right clicking it and selecting “Take” or “Take Copy”.
- ✔ Giving it a relevant name will make it easier for you to find it later. You can also export the object as a 3d file (with the collada .dae format), by right clicking and selecting “Export”.
- ✔ You can open the exported file with other 3D Modeling Software such as Blender and manipulate it further. 3d files in the collada format can be inserted in your inventory by selecting the import option.

USEFUL OPTIONS

- Other useful options in the Edit Menu:
  - The ‘Locked’ property , will protect objects from any modification in terms of properties or dimensions and position.
  - The ‘Physical’ property will make an object to follow physics rules like Gravity , Friction and Collisions.
  - The ‘Phantom’ property will cancel its Collision properties so an avatar can go through it.
  - The ‘Temporary’ property will make life duration of an Object according to time , thus it will disappear after some time - can be useful to create some temp object like a cannonball dropped from a cannon.
  - The ‘Flexible Path’ options can adjust the effects of Softness, Gravity, Drag, Wind, Tension, Forces on X/Y/Z (useful to make objects that is affected by wind such as flag)