topics:
  • introduction to blender

installation
  • go to the Blender web site: http://www.blender.org/
  • download Blender for your computer (version 2.63a)
  • install it, following directions for your computer
  • for installation help, go to:
    http://cgcookie.com/blender/2010/08/31/
    into-to-blender-downloading-and-installing/
  • if necessary, go to:
    for information about setting up the interface to work with a laptop keyboard and mouse
    and/or with a Mac

interface and navigation
  • identify elements on the main Blender screen:
    – toolbar (far left)
    – 3D viewport (middle)
    – outline (top right)
    – properties panel (bottom right)
    – timeline (bottom)
• learn how to navigate the 3D viewports:
  – rotate (click middle mouse and drag)
  – pan (shift + click middle mouse and drag)
  – zoom (/ - key to move out, +/= key to move in)
• use number keys to change views (within 3D viewport):
  – toggle between user view and camera view 0 key
  – front view 1 key or Ctrl+1 keys for opposite view
  – rotate up 2 key
  – side view 3 key or Ctrl+3 keys for opposite view
  – rotate left 4 key
  – toggle between perspective and orthographic mode 5 key
  – rotate right 6 key
  – top view 7 key or Ctrl+7 keys for opposite view
  – rotate down 8 key

• selecting objects
  – select objects by right-clicking on them
  – shift right-click to select multiple objects
  – A key to select/deselect (toggle) all objects
  – B key for “box select” to select things inside a region: B + click + drag to select
  – B + middle-click + drag to de-select
• adding objects
  – shift A or use Add from menu bar
• transforming objects
  – scale (S key)
  – rotate (R key)
  – translate (“grab”) (G key)
use manipulators in interface:

or keyboard (keys listed above)

• note axis colors:
  – x axis = red
  – y axis = green
  – z axis = blue
• duplicating objects
  – select an object (or objects) to duplicate
  – shift D duplicates selected object(s)
  – right-click or ESC key to cancel transaction
• deleting objects
  – select an object (or objects) to delete
  – X key to initiate delete action
  – note that delete action is followed by a confirmation
• objects are comprised of “meshes”
• meshes are comprised of
  – vertices
  – edges
• faces
  • **object mode**
    – lets you manipulate different objects (e.g., add, duplicate, delete)
  • **object edit mode**
    – select an object (or objects) to edit
    – then select "Edit Mode" from menu in interface (near bottom) (or press **TAB** key)
    – this lets you edit vertices, edges and faces
  • **extrude tool** (in object edit mode)
    – lets you morph object shape
    – select face(s)
    – **E** key to extrude (push out) face(s)
  • **delete** (**X** key) in object edit mode lets you delete part of an object (e.g., vertices, edges, faces)

• **materials**
  • change the color and texture of objects
  • on the properties panel, click in "material" button
    – click on "new" to add a material
    – you can name the material
    – then adjust property settings
  • **properties**:
    – **diffuse**
      * to change color
      * a color wheel is displayed, and then move arrow out of the color wheel window for color change to take effect, or **ESC** key to cancel
    – **specular**
      * to adjust lighting that falls on object
      * can adjust color, intensity, hardness
      * hardness is high for reflective materials (like glass or metal) and low for non-reflective materials (like fabric or wood)
  • **transparency**
    * to adjust transparency
    * set alpha value: 1.0 = opaque, 0.0 = transparent

• **animation**
  • animation works by placing object at certain along positions along the timeline
  • **left-click** and drag small green bar in timeline
  • notice that the frame numbers change (in the lower left corner of the viewport and also in the frame number button)
  • default frame rate = 24 frames/sec
  • default animation length = 250 frames
  • **I** key to insert a "key frame"
  • LocRotScale to insert object’s position (location), rotation and scale for that keyframe
  • then move to another point along the timeline and move the object
    – use **G** (grab/translate) to move object in viewport
    – then **I** to insert key frame
  • another way to create animation is to use the **record** button in the interface
    – turn on recording
— then manually drag object(s) around (using G etc.)
— turn off recording when done

rendering

• rendering allows you to export your final object with all its properties
• export format can be:
  – image
  – video
• rendering exports WHAT THE CAMERA SEES
• so make sure you check your camera position/viewport before you render; otherwise, you might not see what you expect to see in the rendered output
• in the render panel (select on right side of interface), click on image to view what the camera sees; click ESC to go back to normal view
• rendering asks if you want to use anti-aliasing — which smooths lines (transitions) if used
• F3 function key to save rendered object as an image or a movie

lighting

• use the LAMP object
• “Lamp” properties let you set different things like type of lamp, color, hardness of light, etc.
• you can also add lamp objects, to have more than one light source on your scene

references/resources

• USER MANUAL:  
• TUTORIALS:  
  http://cgcookie.com/blender/get-started-with-blender/