

## CRYENGINE3 TUTORIAL –

### LEVEL CREATION

Download and unzip the CryENGINE3 to here: C:\Program Files (x86)\Electronic Arts\Crytek

Open program (found in the Bin32 or Bin64 folder depending on what system you are using). Prompt will appear for login details. Online program therefore user MUST BE ONLINE when logging in + saving.

When screen opens, go to FILE and hit NEW. Name the project ARCH110\_Surname01/02/03 etc.  
In this box change the HEIGHTMAP RESOLUTION to 2048x2048 + the METERS PER UNIT to 1.

IMPORTANT: When user hits OK another prompt box will open. Here the setting needs to be changed to GLOBAL SHARE in the drop down menu. This allows others to open + view model.

World opens as water mainly + terrain under here. The dark line under the water represents the depth.

Go to TERRAIN along the top menu bar + hit EDIT TERRAIN. A terrain editor window will open. Hit MODIFY + SET WATER LEVEL. Set this at 56. The water is now deeper. Hit MODIFY again + select SET MAX HEIGHT. Set this at 256. Hit OK. Then still within the terrain editor hit the terrain image button with an arrow pointing towards it. This will open another menu to create the terrain. For beginners, when the next window opens hit OK. This then gives a randomly created terrain.

Click out of the terrain editor window. The terrain is covered in tile a texture. This is edited later.

Move about by using keys W A S D

RIGHT MOUSE button controls view.

CTRL G drops and 'person' into the virtual world.

S Key zooms out.

LEFT MOUSE Button to paint.

Scroll mouse to lose the gun.

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### TERRAIN MODIFICATION [GENERAL]

Open recently created level. Random terrain previously created will appear. When it appears the landscape will be tiled. Hit TERRAIN + select TEXTURE. A pop up opens. Change the name of the texture in the LAYER column and apply a texture by the link in the MATERIAL column [EG: Grass]. This opens another link to select an appropriate terrain. Hit ASSIGN MATERIAL in Layer Tasks menu of pop up window. Changes from tiles but still can see major thick black gridlines. Hit TERRAIN again + again select TEXTURE. On the 'Grass/Selected Texture' in the pop up, hit CHANGE LAYER TEXTURE in the Layer Texture menu on the left hand side. In the next window select GRAY. [This step is not necessary to the overall outcome].

Create more layers in the material editor this way. Hit ADD LAYER on the left hand tab to begin this.

Now hit the TERRAIN tab under the 'Rollupbar' on the right hand side of the screen. The added textures will appear in a table towards the bottom of this menu. As an example, the 'GRASS' is to BE painted on. Select grass from this menu + hit the color palette rectangle under the apply button. A color palette menu opens. Select an appropriate color for the texture + hit OK + then APPLY on the Rollupbar menu. To change the area of texture to be painted by the brush, change the radius in the BRUSH SETTINGS of this same tab.

To change material brightness, hit RESET in the same bunch of menus from the previous step. Then adjust using the scroll bar. Then HIT apply. Once hit apply, change the brush size again and begin to layer the landscape with shadows, depth etc.

To change the terrain itself, hit MODIFY in the terrain tab of the rollupbar. For terrain modification, a zoomed out position is an advantage.

There are several terrain editing tools in this menu. Most commonly used is FLATTEN. Select FLATTEN. Here you will see an outside radius bar and an inside radius bar. These can be adjusted to change the width of the 'flatten'. Also change the 'height'. [1 being lower and 100 being higher and raising areas]. Or

simply select the CTRL key and select the height of that particular spot by left clicking the mouse. Once this is painted onto the virtual it will either raise or lower the terrain to that particular height.

To provide greater crispness to image in the distance, change DEPTH OF FIELD to 2000. Do this by selecting the TERRAIN menu from along the top menu bar and select TIME OF DAY. When the next window opens, hit Toggle advanced properties in the menu bar on the left. Scroll the menu on the right all the way to the bottom now to DEPTH OF FIELD. Change the value to 2000. The image should now be crisper in the distance.

To place TREES etc. Hit VEGETATION in the TERRAIN tab of the rollupbar. Under Vegetation tab, hit the button on the far left, ADD VEGETATION OBJECT. This takes us to the 'Rocky Ravine' file previously downloaded with engine installation. Make selection of trees of this menu and hit OPEN. In the menu, the trees are now listed. Select one of them + scroll down. Change the variation to 0.5 [but play around with this also]. Also make sure 'Bending' is set to 3. Also make sure 'cast shadow is selected. Once this is completed, scroll back up the menu and hit PAINT OBJECTS. Turn brush size up [16 is ok] + begin to paint area with select vegetation.

### PINTO ON TERRAIN:

For fast rotation of a component make a shortcut. FAST ROTATE.

When starting new terrain;

Max Heights either 256 or 512.

For BEST RESOLUTION [Rollupbar, Terrain Tab] hit Layer Painter → Tile Resolution → Change. Change the value 2048.

In TERRAIN MODIFIER under modify drop down, play with the randomize function to continually change the terrain.

Tools to remember + play with:

HARDNESS: Higher number = HARDER EDGES

FLATTEN TOOL: when outside + inside radius is same = HARD EDGES.

## SLOPE/SMOOTH

SMOOTH + FLATTEN GO HAND IN HAND. WHENEVER YOU FLATTEN, USER MUST ALSO SMOOTH.

BEACH/COAST SMOOTH

NORMALISE – Make sure to use when a random terrain is created.

## PINTO ON MATERIALS:

Side of Mountains:

Specific Texture + application process. In material editor in the terrain folder, select 'CLIFF ISLAND'.

To only paint part of mountain [like a rockface] change the SLOPE DEGREE. [Rollupbar, Terrain Tab. The degree selected will allow terrain on that angle to be painted [in video is 15 on min + 90 max angle.

To fill remainder with grass or another texture, make sure the 'Higher' angle on the new texture is the 'Lower' angle on the texture, which is already placed.

When selecting + assigning materials must 'BAKE IN' Texture:

Hit File Generate Surface Texture [4096x4096].

Terrain Color Multiplier = 3

Hit OK.

For ground cover, always have more than one texture; even it is only the color slightly different or darker/lighter.

In material editor, hover over 'DIFFUSE' + preview will be generated on the screen.

ELEVATION    MIN = 0  
                  MAX = 4096 [1496?]

SLOPE         MIN = 0  
                  MAX = 70

## PINTO ON VEGETATION:

When BRINGING INTO LAND HAVE terrain snaps ON.

Make new categories for the vegetation we bring in; trees, rocks, etc. in rollupbar to help organise.

In setup for each vegetation change ADD RANDOM ROTATION to TRUE.

If BENDING is set to 6, can really see the trees bending in the wind.

To import a hectic library of vegetation IMPORT the vegetation file from the 'Forest Level' folder. Make sure to save this folder with own level when find it.

DENSITY is amount of trees etc dropped per click. Set to 1.

To move vegetation - have move tool selected + move the required vegetation.

To scale – select the vegetation, press alt + use left mouse button + mouse to scale.

'xtrees' are low resolution trees + better for backgrounds.

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### FROM sketchUP TO CE3

In sketchUP under the plugins menu tab, go to PLAYUP + select preferences. Ensure the path is set cryENGINE3. Under cryengine3 tab, the user needs to select the MODEL EXPORT PATH + the RC PATH. Hit Browse for model export path and locate the ELECTRONICS ARTS folder from the installation. Then ARCH1101\_Best, hit game + then hit levels. Then select the appropriate saved file for exportation. Create new folder here named objects. Save this path. For the RC PATH hit Browse. Navigate back to ARCH1101\_Surname + select bin 32. Click on the rc folder then dbl click onto the RC logo. Hit save and exit. The OK + OK again.

Once created object, triple click and hit G to make a component. Now make a second component to bring in. [The second component needs only to be simple to provide a shortcut once the objects are in cE3].

To export, right click on a component, scroll down to Playup Tools + Export Selected Geometry. Click ok on the pop up window, which loads.

In cE3 now, find Geometric Entities tab in rollupbar menu. Scroll down + hit reload if engine was running whilst sketchUP took place. If not the models should already be on this list. Open the 'levels' tab, then the ARCH1101\_Surname folder, objects + the two models should both be here.

From this list, drag + drop the model into the world.

If the user hits the 1 key, the model can be moved to whichever place. If a model disappears and the 'move' tool is selected, hold shift + ctrl down together + left click the mouse to align the model where the cursor is.

Now the models are in the terrain, once again 'drop into the world', hit ctrl G + move around.

When objects are dropped in, there may be a warning saying there is no material assigned to the object. To fix this, open material editor, [chequered sphere in top right corner]. Then click on the eyedropper followed by clicking on the model it should take the user to a screen within the material editor. Here select each material + give it a 'surface type'. Try to make similar to what is wanted in design. This step then stops the warning message.

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### LIGHTING

For a great starting place for light, must load the file 'Forest'. Do this in the time of day editor window. Import from file → game → levels → forest → \_lighting → select the first option [forest?]

In T.O.D. menu can fiddle with global density, saturation + focus/blur amounts also.

Also remember here we can change position of the sun + its direction by moving the equator position.

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### FOG

Rollupbar → First Tab → Entity Option → Render folder → FOG VOLUME. Make sure follow terrain button is selected. Drag + drop into scene [will only be a ball of fog – parameters need to be changed]. Do this by Entity properties → size [ x, y, z = heights etc of fog entity].

Volume Types are;     1 = square volume  
                          0 = circle volume

Move fog around by having the fog entity + the move tool selected. Can also rotate this way by selecting the rotate tool.

Best entity properties for fog are:

GLOBAL FOG COLOR: If 'TRUE' fog color will match fog in rest of model created by tree shadows. If left 'FALSE' can make own color by hitting 'color apply box' + selecting.

GLOBAL DENSITY = 0.4 [Fiddle to suit here – 0.2 is also good].

FALL OFF SCALE = 5

SOFT EDGES = 1 [Fiddle to suit here – 1 makes it more 'foggy'].

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### WATER

To create water, use the 'water volume' tool.

Rollupbar → first tab → Area → in objects → water volume.

Turn helper on + follow terrain button. Make a four sided shape here by clicking in a spot, a blue icon should appear. Keep pulling out the points [up to 4] + dbl click to close + right mouse click to finalise.

Next add a material to the shape. Material editor → materials → levels → cxp → water forest 3, water forest 4 [A?] Once happy with selection, make sure the material gets assigned to the shape. Do this hit the assign button, top left cnr. of material editor.

To fiddle water volume parameters, make sure the 'volume' is selected + go to 'water volume parameters' in the rollupbar.

DEPTH =	2
SPEED =	0 [fiddle to suit].
FOG DENSITY =	0.4
FOG COLOR MULTIPLIER =	0.3
UV SCALE:	0.87 [?]
? SCALE:	0.87 [?]

To edit shape of 'volume':

Scroll rollupbar down → edit shape [hit button], [make sure the move tool + x y tools are enabled] → click on blue icons + extend parameters. Add more blue icons by to fill the fill the area required by holding the ctrl key + clicking the left mouse key. Then keep pulling out the shape.

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### WIND + CLOUD SHADOW

Wind - Under the ENVIRONMENT TAB in the rollupbar. Has an x, y, z coordinate system. [Fiddle to suit].

Cloud – Must open editor first + add one. [Fiddle to suit but make sure can see terrain whilst editor is open to gauge changes].

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### PARTICLES [helps make waterfall splashes etc].

Rollupbar → entity → scroll to particles → particle effects. When selected an axis will come in. Select follow terrain tool + drag + drop where particle needs to be.

To assign particle effect. Open database view ['DB' Button] → Particles Tab [to load a library, hit load library {top left button in editor}. Select + load the waterfall option. In the editor open WATERALL exp → PINTO uses 'RAPIDS' here → to assign – right click on the particle → scroll to ASSIGN TO SELECTED OBJECT. Back in the world, it may need to be rotated so it looks real.

Can also increase the speed + scale of entity in properties under the rollupbar.

REMEMBER When an entity is selected, use ctrl C to copy + create a new entity straight away in the viewport.

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### ROADS

Rollupbar → object → misc → road [in object type]. This will give us the road tool. Place keypoints where the road is to go. Select point by left mouse clicking. Keep repeating this until the required path is completed. To end the 'path', dbl click the mouse.

To edit a road surface material; in the rollupbar next to the 'MTL', hit the 'NO CUSTOM MATERIAL' button. A pop up will open. Select materials → roads or hit terrain + select the roads folder there. Remember to hover over diffuse when selecting a 'material' to generate a preview. Once selected, hit the Assign button in the editor.

Road Parameters is the editing space for the road/path. To fiddle with the path go here + select following:

WIDTH = 6 is good.

VIEW DIST. RATIO = 100

SORT PRIORITY = Allows multiple roads to cross over each other.

To edit the road, the 'helpers' on. [Top of viewport] → select the road → scroll down in the rollupbar + hit the edit button. With 'helpers' on, can move road sideways or up + down [Enable constraints by either selecting the z [up] button or the x y [left/right] button from the top tool bar]. After this step, hit the button, 'ALIGN HEIGHT MAP' [on the rollupbar]. This brings the terrain up to the underside of the road/path.

Now fiddle with the boarder width etc. To send the new boarder width into the model after updating it in the table, hit align height map again + this should load the new width.