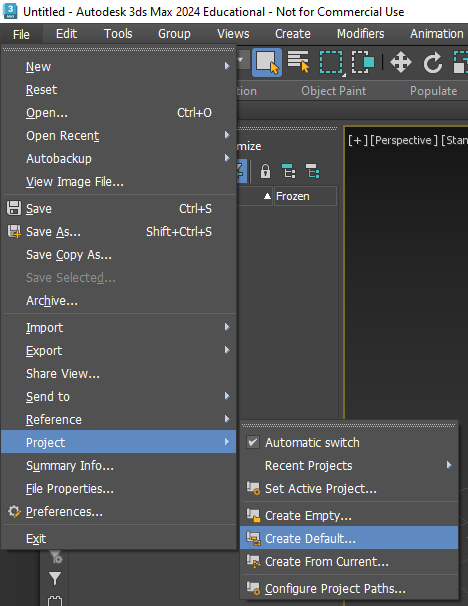
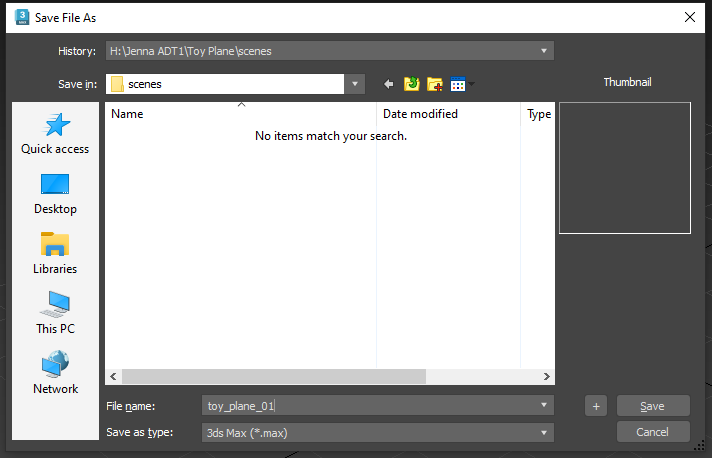
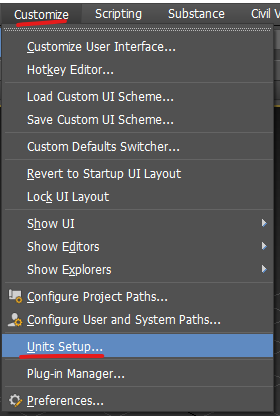
# Setting up files/projects

A screenshot of a computer program

Description automatically generated  
Set relative path for files so that you don’t have the long C:/…./pic.png and it doesn’t work when copying project to another file.

  
Setting up new project in the folder I want it in

  
When saving the actual model, it will show in scenes folder auto made by create default step

A screenshot of a computer

Description automatically generated  
Change units to cm from inch. Keep on generic so there is no, 5cm or 74cm around, it will just say 5 units long or something. PC at home will remember, PC at poly wont cause deep freeze is active.

# Basic movement/controls

A screenshot of a computer

Description automatically generated  
Alt+W will take out to orthographic views  
press again to zoom into the active view with yellow surround  
T = top view P = perspective U = orthographic

A screenshot of a computer

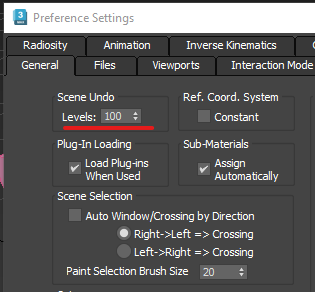
Description automatically generated  
Some views don’t have hot keys. right click the view you’re on to show all other views

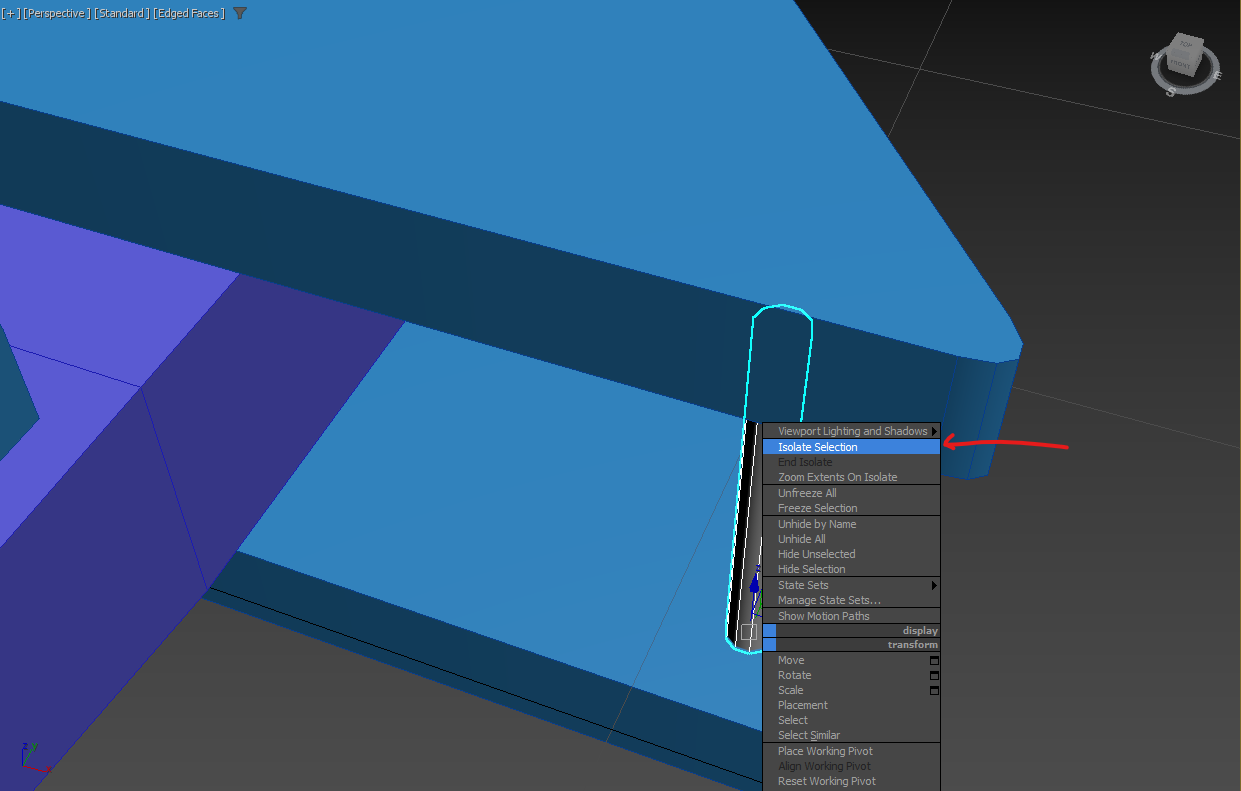
A green and white sphere

Description automatically generated  
to see edges press F4

A screenshot of a computer

Description automatically generated  
show/hide grid press G

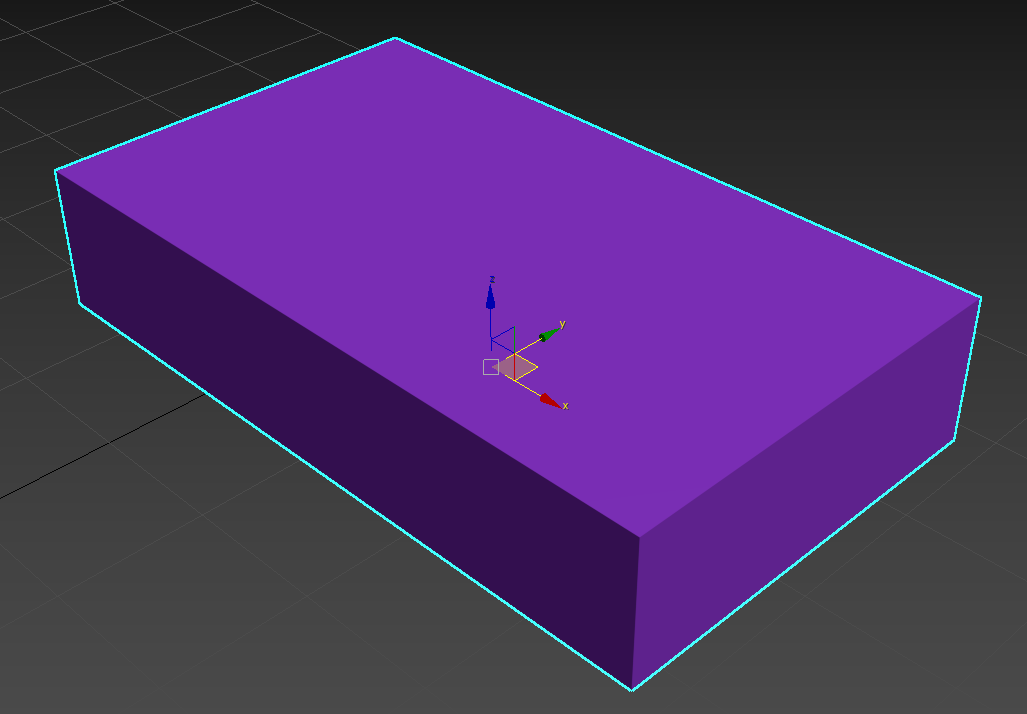
  
number of undos available. WARNING Spamming will crash 3Ds. More undo’s will take more ram storage

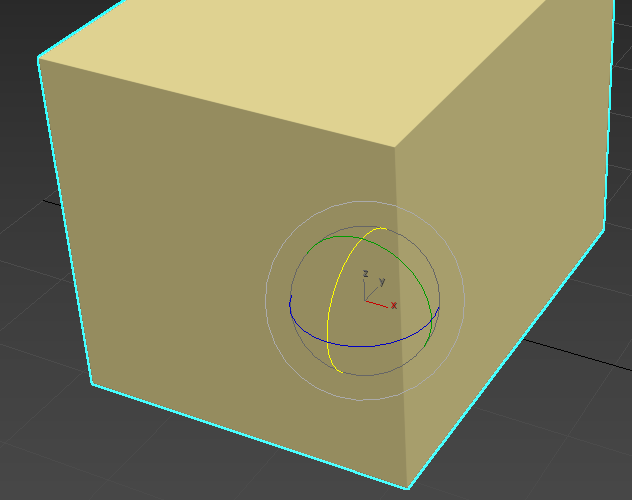
  
to temporarily hide all objects but the selected one, right click a selected object and click on “isolate selection”. Or shortcut is Alt + Q. This is especially helpful when optimising later on

A screenshot of a computer

Description automatically generated  
selecting things without accidentally moving them at the same time (Q)

# Basic shapes and altering

  
Select and Move tool, shortcut W  
grab each arrow for single axis movement  
grab box between arrows for plane movement  
grab white box at origin for full free movement (note to self, don’t recommend)

  
rotate (E)   
has single axis movement or free rotation  
unknown if has 2 axis rotation at one time???

A screenshot of a computer

Description automatically generated  
angle snap (A) is best friends with rotate tool  
default is 5 degrees, can change somewhere???

A screenshot of a computer

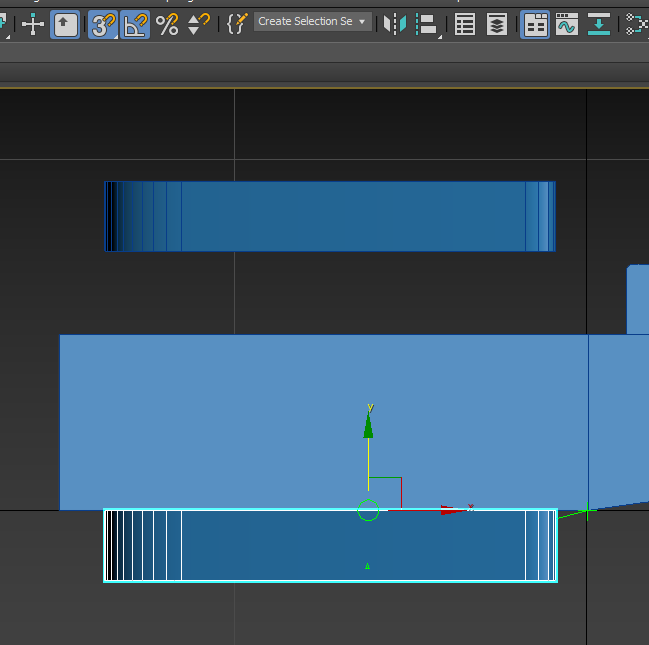
Description automatically generated  
click hold to show multiple versions of scaling.   
the others are weird so just use uniform (arrow pointing)

**A blue and green drawing of a blue object

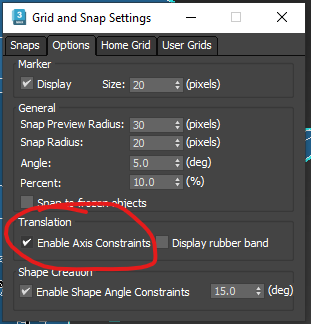
Description automatically generated with medium confidence**cloning objects is super easy.   
be in move mode, hold shift, drag a movement axis  
copy is basic non linking, changes to original will have no effect on clone  
instance allows you to change original and this changes clone ????  
reference is????

## Snapping toggle

A screenshot of a computer

Description automatically generated  
  
its useful tool but it should ONLY be on when we need it.   
It allows movement to snap to objects around when in move mode.  
It has different modes, but using 3d mode is “easiest” as you can just be in a 2D view to stop it moving in the 3rd direction. Green cross shows where its snapping to

A screenshot of a computer

Description automatically generated  
right click snap toggle and select where you want to snap to, vertex is easiest to work with  
axis constraints will stop the thing youre moving snapping onto the exact location and will only move on the axis you are moving, essentially stops free movement

## Moving pivot points

A screenshot of a computer

Description automatically generated  
turn on snapping (S), go to hierarchy tab, select “affect pivot only”  
large wireframe arrows should show over widget  
turn on settings in snapping toggle area

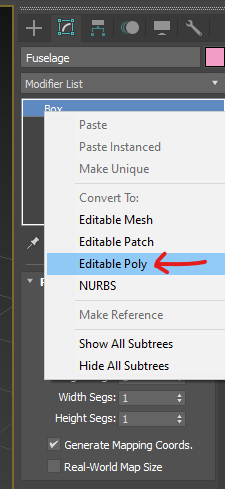
A screen shot of a computer

Description automatically generated  
simply drag the axis you want to move to any vertex on the plane you want it to be against

A screenshot of a computer

Description automatically generated  
if you ever mess up and cant find the pivot, just reset with one of the above

# Non-basic shapes and modifications

  
making a shape not just a simple shape

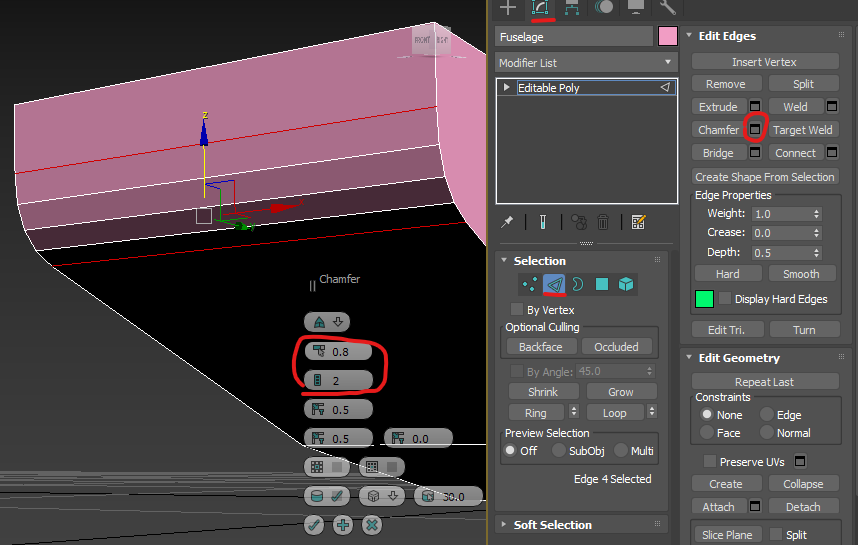
A screenshot of a computer program

Description automatically generatedA pink rectangular object with a red line

Description automatically generated  
making a segment on an object that isn’t exactly quarters, or halves etc  
very imprecise, only measured by eye

A screenshot of a computer

Description automatically generated  
making exact locations for new segments. Select ALL the edges you want to connect it to

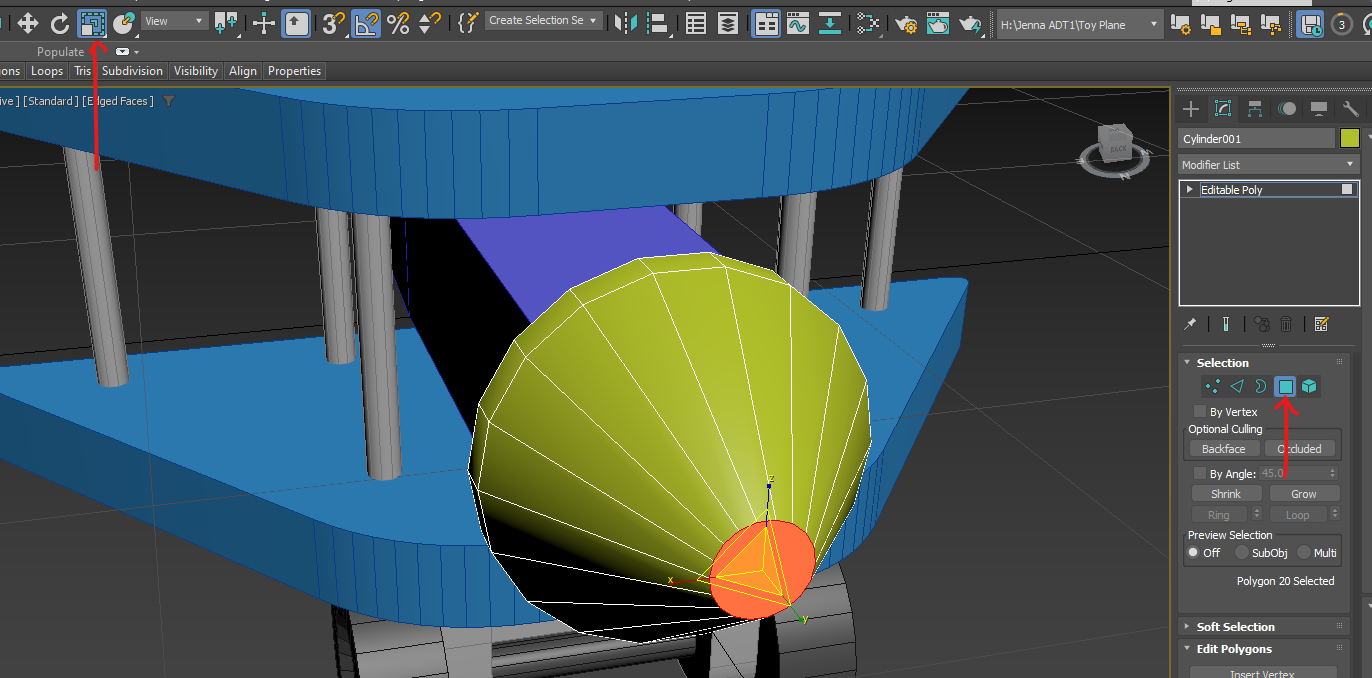
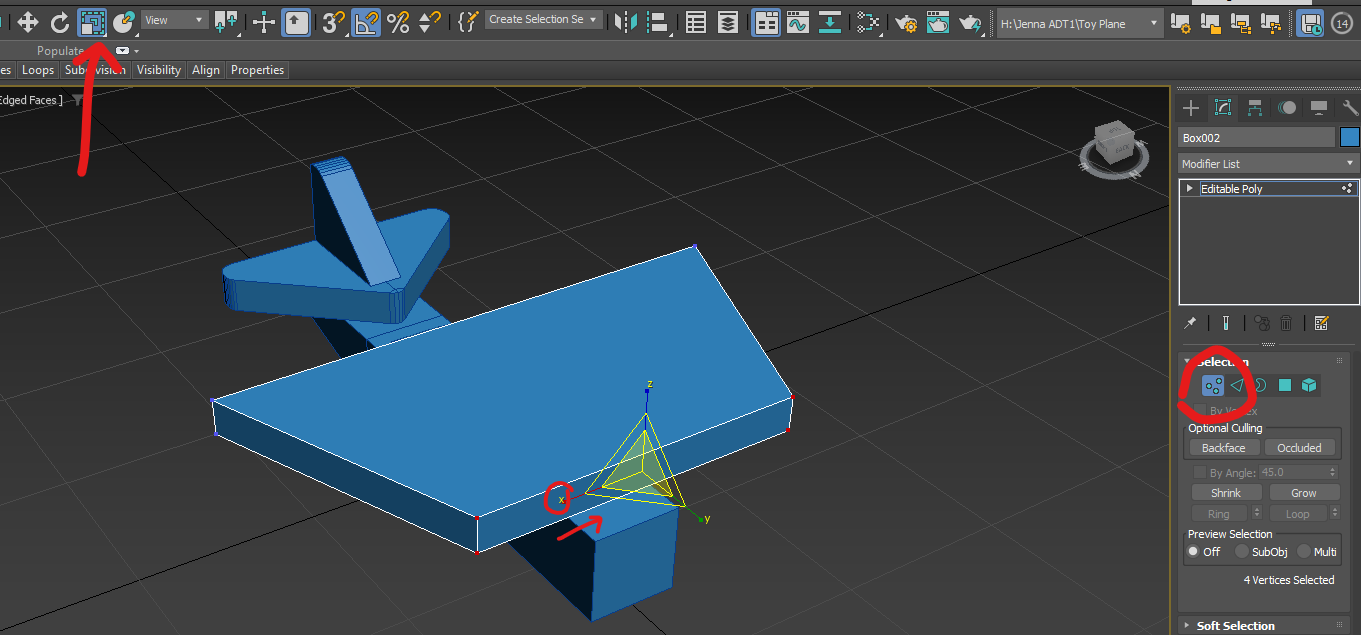
  
how to make a chamfer on an edge. Select the edge first, then the chamfer settings and only change the “area” of chamfer and the number of edges.  
WARNING too many edges WILL crash 3Ds

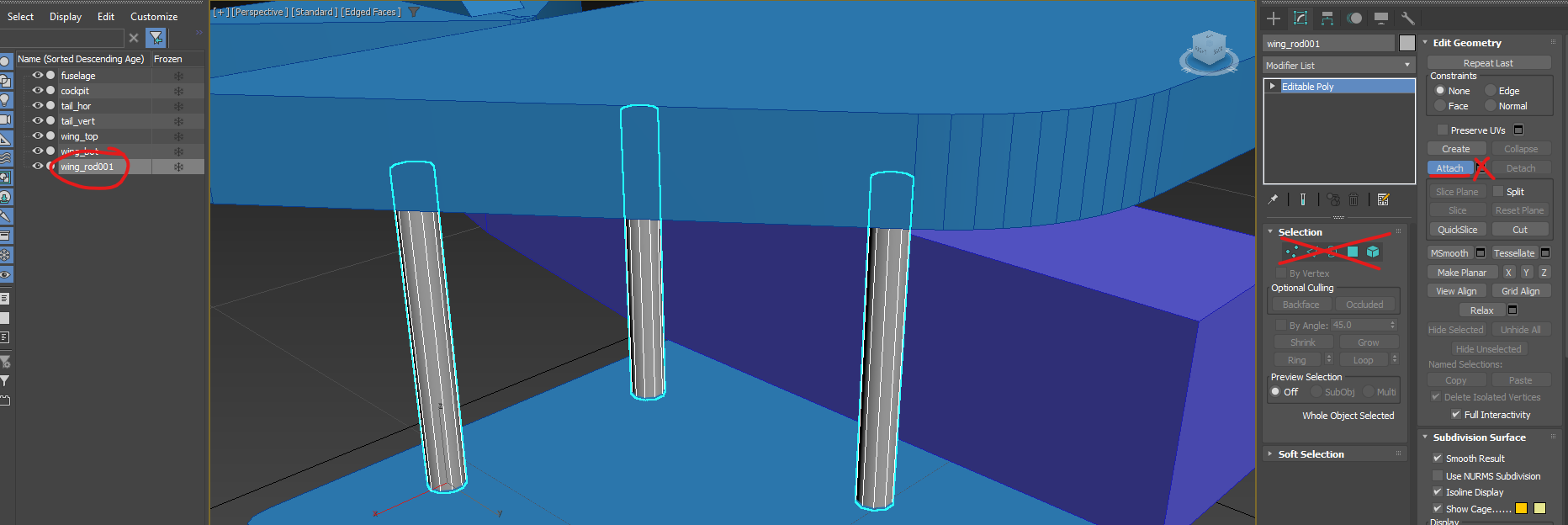
A screenshot of a computer

Description automatically generated  
inset allows us to make a face the same shape but smaller (inset) in the original face

A screenshot of a computer

Description automatically generated  
extrude allows faces to be pushed/pulled on the axis that is 90 deg to the face

  
scale can be used to push/pull many things.  
selecting multiple vertices can be used to make trapezoids with squares  
selecting a face can shrink a cylinder to a cone

 A computer screen shot of a blue table

Description automatically generated  
you can attach shapes together that you want “grouped” (grouping is something else tho)  
reasons could be, dupe objects, combining objects that touch  
be top level, click “attach” NOT settings, then click each object you want to attach  
click “attach” again once done  
to modify individual objects that are attached, use the element selector

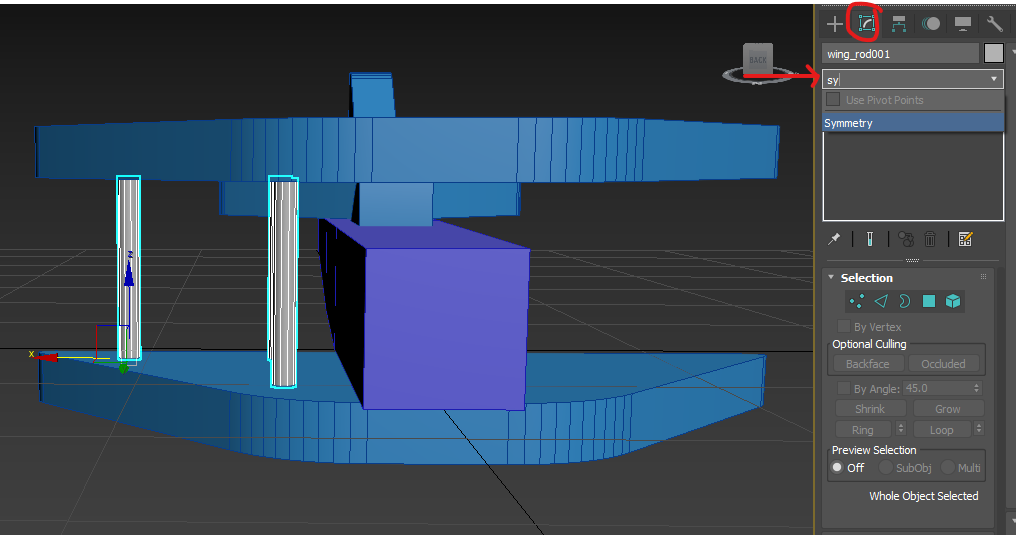
A green circular object with a red circle and blue lines

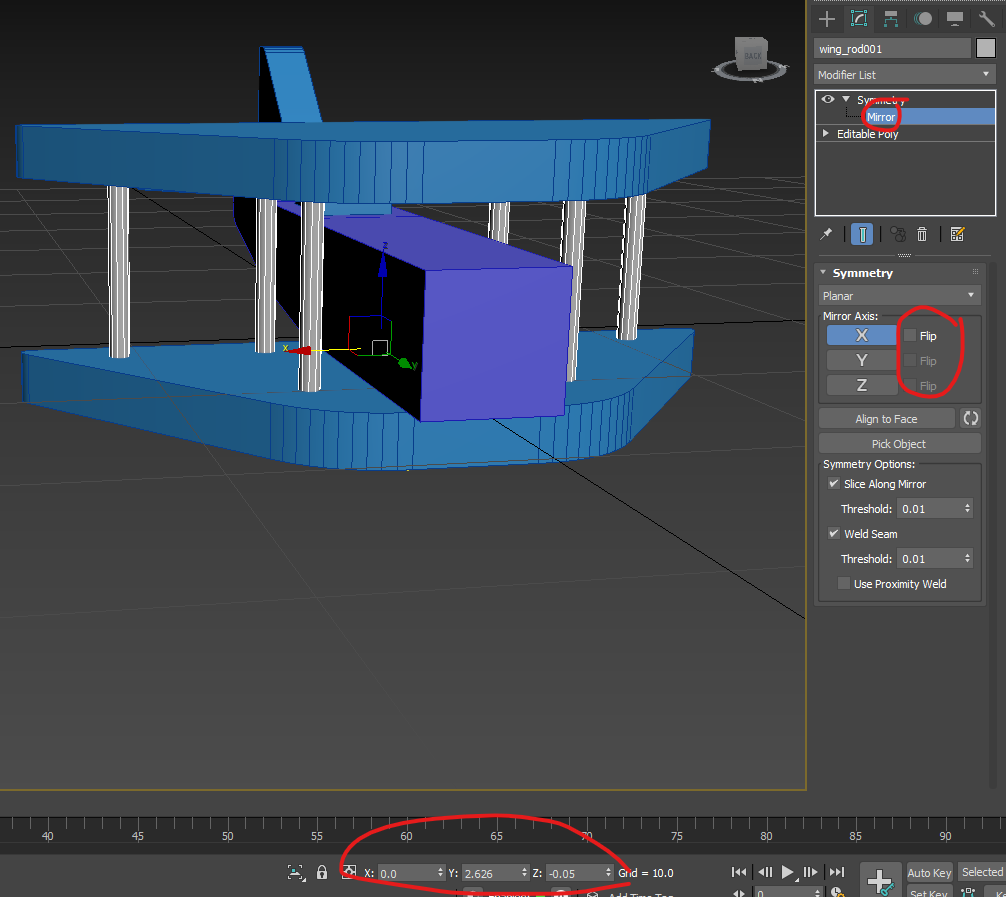
Description automatically generated with medium confidence  
when using any tool’s setting button, and you want to do multiple of the same tool  
just press the + symbol instead of the tick

A black and white image of a tall cylindrical object

Description automatically generated  
ends of objects that are never going to be rendered (inside of another object) should be deleted. This optimises the model and saves resources

## Symmetry modifier

   
make sure in top-level selection of the object you want to mirror  
find symmetry mod in modify tab

   
expand symmetry mod, select the mirror plane  
rotate mirror plane to correct axis with the X Y Z buttons, use flip buttons if stuff dissappears  
move plane to correct place on the mirroring axis (other axis wont matter)

A screenshot of a computer

Description automatically generated  
when happy with mirror, right click symmetry mod, then click “collapse all”

A screenshot of a computer

Description automatically generated  
a big scary box will show but its ok, just click “yes”

# Unwrapping a finished model

A blue plane model on a black background

Description automatically generated  
use “attach” and join all pieces if they touch  
different objects in a full scene shouldn’t be attached

A screenshot of a computer

Description automatically generated  
you MUST be in top level to apply the unwrap modifier

A screenshot of a computer

Description automatically generated  
click button, new window is good

A computer screen shot of a blue and green object

Description automatically generated  
set up screen like this, or UV editor on second screen

A screenshot of a computer

Description automatically generated  
ctrl + A to select all, then flatten mapping

A screenshot of a computer

Description automatically generated  
should look like this (but all green, red is selected stuff), click the button top right to remove grid

A screenshot of a computer

Description automatically generated  
get better grid shading

A screenshot of a computer

Description automatically generated  
select all and move away from checkered zone for manual sorting

A screenshot of a computer

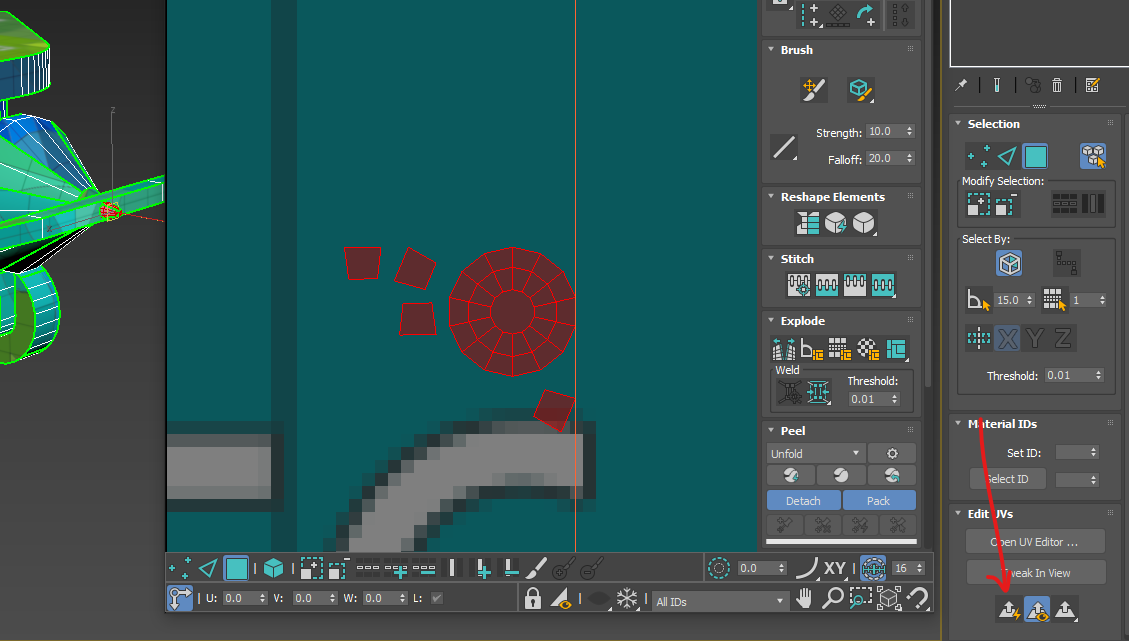
Description automatically generated  
have polygon selected, and element select enabled  
click on an old object in perspective view  
move all elements into checkered zone

A screenshot of a computer

Description automatically generated  
find a seam (green line) that should be on a rounded/smooth area  
click on 3d view, find in 2d view  
deselect, the select only 1 edge of seam  
click “stitch: custom”

A screenshot of a computer

Description automatically generated  
when seams are solved move to the side and start again with the next object

  
USE THIS BUTTON WITH CARE  
if a shape is completely exploded and it has way too many polygons to fix manually  
the shape should have at least one open end, works amazing on cylinders with no ends  
make sure there are no faces that are 90 deg to each other (nose of cone to the sides of cylinder)  
if it does, PLEASE split them off first, this will fix a lot of issues later  
select whole shape and click “quick planar map” (arrow pointing)  
find the side that would take a seam best and make a seam with “break” button under “explode”  
either use relax or straighten to get it to look correct again  
NOTE sometimes lone vertices will be joined

# No screenshot notes

Taking screenshots while in any view  
shift + win + S   
in that ORDER specifically

How to move around perspective view  
mouse scroll = zoom  
alt + ctrl + scroll hold + move mouse forward/back = smooth zoom  
mouse click/hold is pan  
alt + mouse hold is rotate  
can also use cube top right  
Z to zoom on object selected, if none selected, zooms on whole scene

# Completed work

A blue toy airplane on wheels

Description automatically generated  
plane model complete without textures