CATIA V5 Training
Exercises

Imagine and Shape

Version 5 Release 19
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EDU_CAT_EN_IMA_FX_V5R19

Student Notes:

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Creating Basic Shapes

Recap Exercise

20 min

In this step you will create some basic geometrical shapes. You will start with a standard closed surface and deform it to get the final shape.
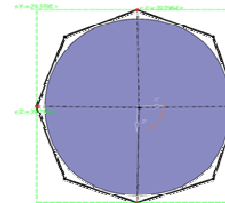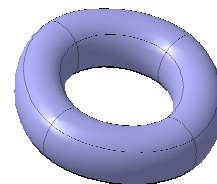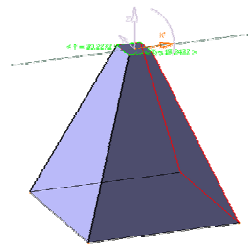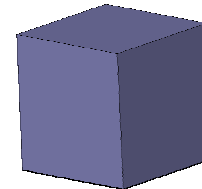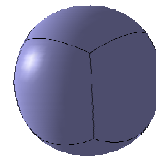
Create a Square From a Sphere

🔹 **Click the closed surface icon**

🔹 **Click the Vertex Selection icon**

🔹 **Click the Select all icon.**

🔹 **Click the Attraction icon**

🔹 **Drag the pointer on the bar to "100"**
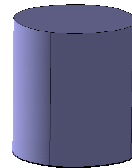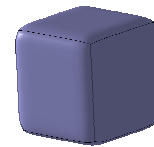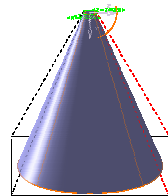
🔹 **Click the Edge Selection icon**

🔹 **If necessary, select all the edges of the closed surface with the triggers square selection mode option or using Shift Trap**

🔹 **Click the Attraction icon**

🔹 **Click the Sharp Attraction icon**

🔹 **Drag the pointer on the bar to "100"**
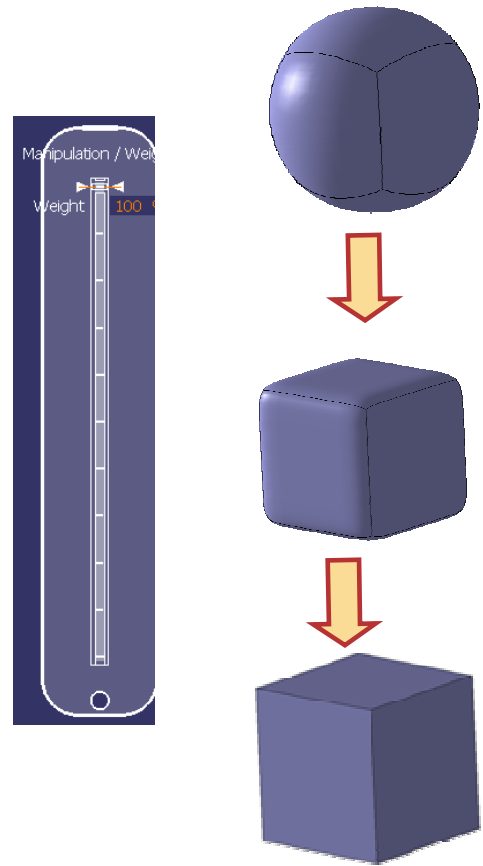
Create a Cylinder From a Sphere

- **Click the closed surface icon**

- **Click the Face Selection icon**

- **Select two opposite surfaces (use Ctrl key)**

- **Click the Attraction icon**

- **Click the Sharp Attraction icon**

- **Drag the pointer on the bar to "100"**

Manipulation / Wei

Weight   100
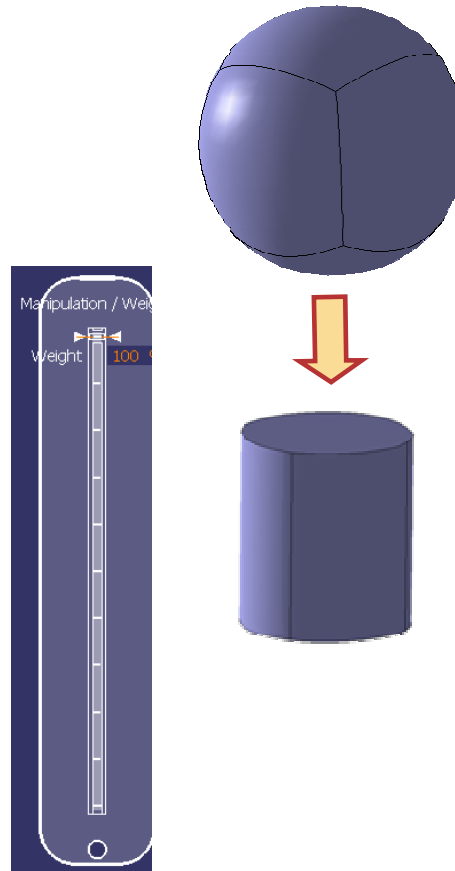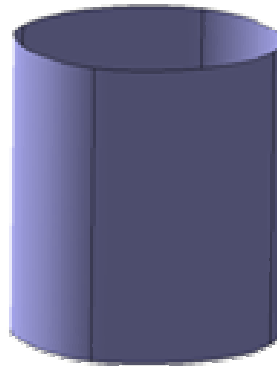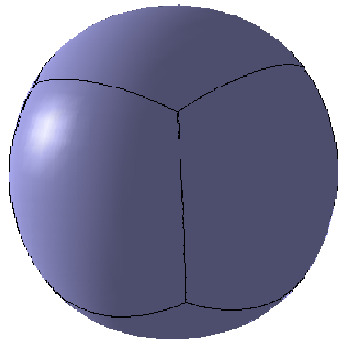
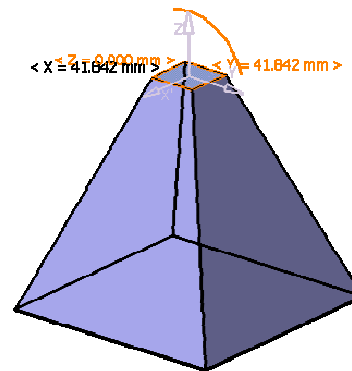# Create a Tube From a Sphere

- **Click the closed surface icon**
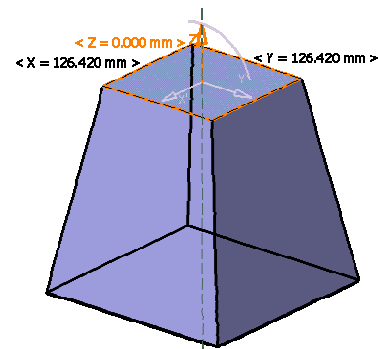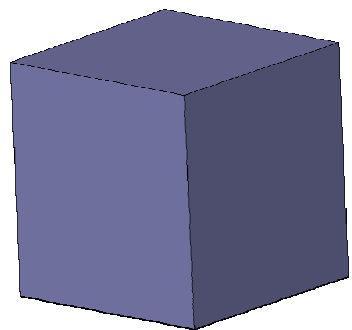
- **Click the Erasing icon**

- **Select two opposite faces**

Create a Pyramid

- **Create a square**

- **Click the Face Selection icon**

- **Select the top face**

- **Click the Affinity icon**

- **Press the control key and drag the compass to reduce the size of the face**

< Z = 0.000 mm >

< X = 126.420 mm >   < Y = 126.420 mm >

< X = 41.842 mm >   < Y = 41.842 mm >

Create a Cone

- 🗄 **Create a cylinder**

- 🗄 **Click the Face Selection icon**

- 🗄 **Select the top face**

- 🗄 **Click the Affinity icon**

- 🗄 **Press the control key and drag the compass to reduce the size of the face**

< X = 0.000 mm >
< Y = 99.572 mm >   < Z = 99.572 mm >

< X = 0.000 mm >
< Y = 32.030 mm >   < Z = 32.030 mm >
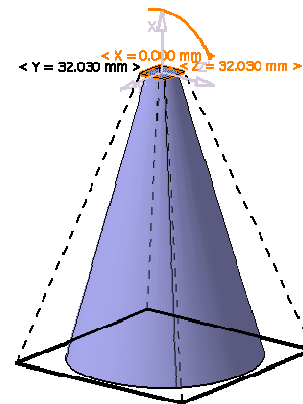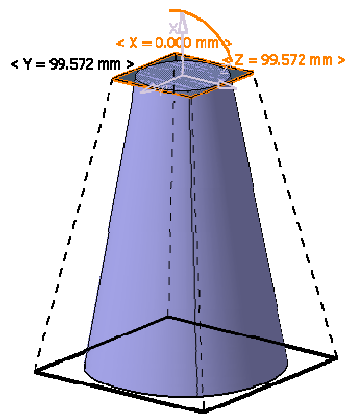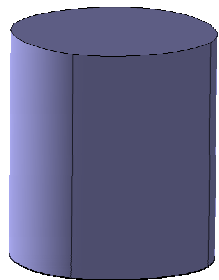
Create a Torus (1/2)

- **Create a closed surface**

- **Click the Face Subdivision icon**

- **Select the top and bottom faces**

- **Select the Erasing icon**

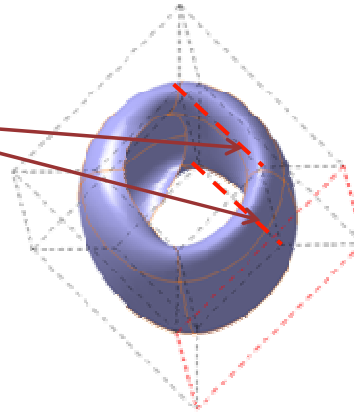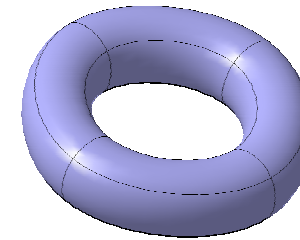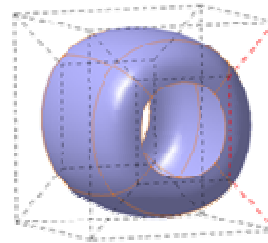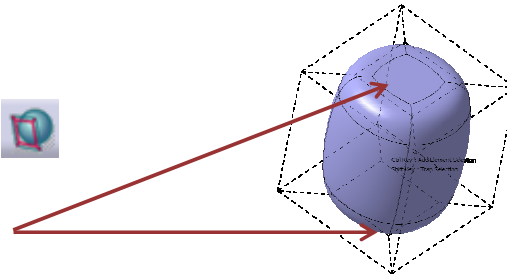- **Select the two faces**

- **Select "Face extrusion" icon**

- **Select the Edge Selection option**

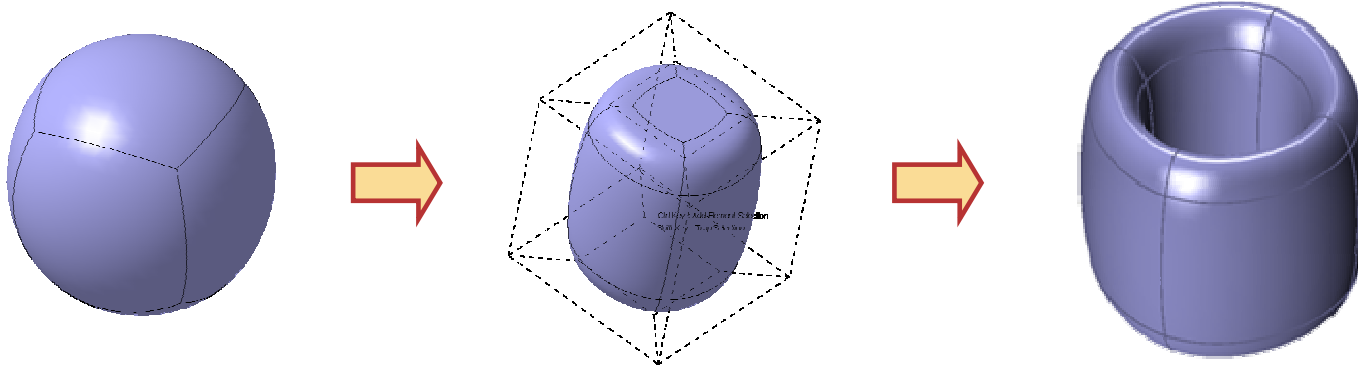- **Press Ctrl key and select those two edges**

- **Select Apply icon.**

- **Re-do the operation until the torus is closed**

- **Re-size the height of the torus**

Create a Torus (2/2)

- **Create a closed surface**

- **Click the Face Subdivision icon**

- **Select the top and bottom faces**

- **Select the Extrusion icon**

- **Select the two faces using the Ctrl key**

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Create a Shape Close to Circle

- **Create a cylinder (see corresponding section)**

- **Select the correct view to see the circular face**

- **Select the Faces Cutting icon**

- **Select the surface and select the top edges to insert two sections**

- **Select the Affinity icon**

- **Select the Vertex selection filter**

- **Multi-Select the points as shown.**

- **Move your mouse to highlight the arc circle of the compass**

- **Click and drag the mouse to deform the shape and obtain a shape close to a circle**
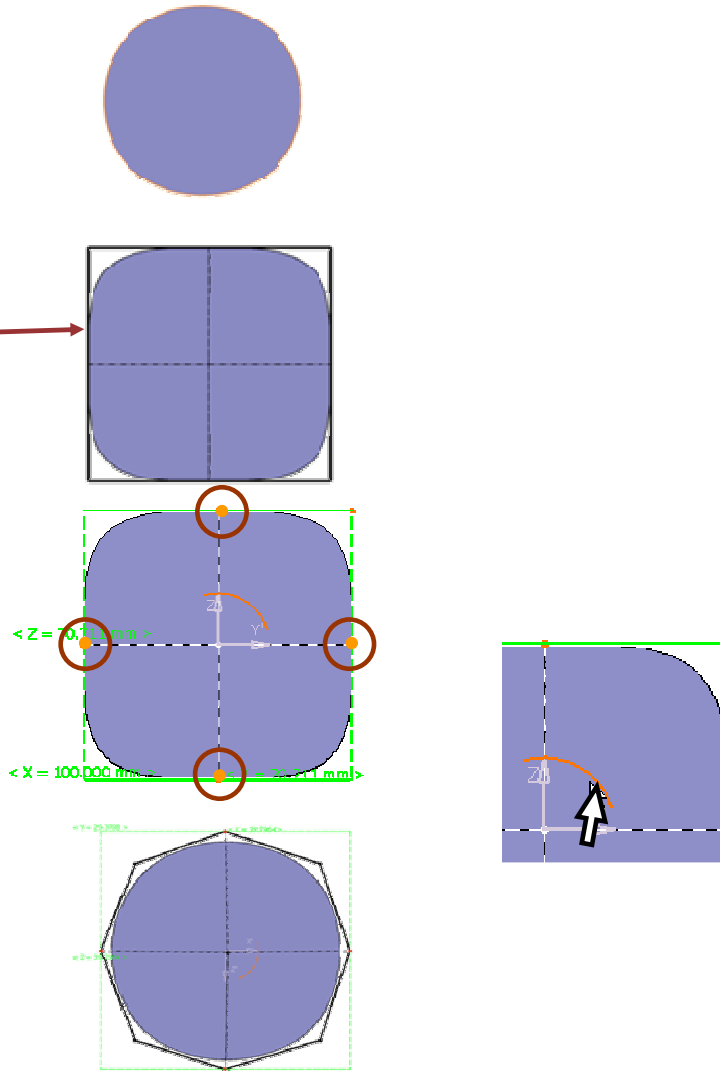
Master Exercise: Perfume Bottle

You will complete the master exercise by performing following steps.

- **Master Exercise Presentation: Perfume Bottle**
- **Master Exercise Step (1): Creating the Main Shape**
- **Master Exercise Step (2): Splitting the Shape**
- **Master Exercise Step (3): Creating the Nozzle**
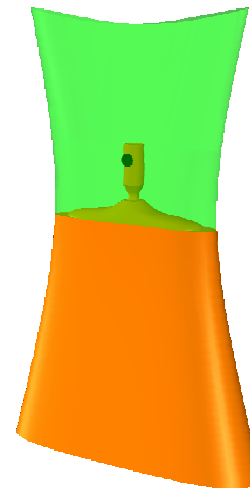- **Master Exercise Step (4): Finishing the Perfume Bottle**

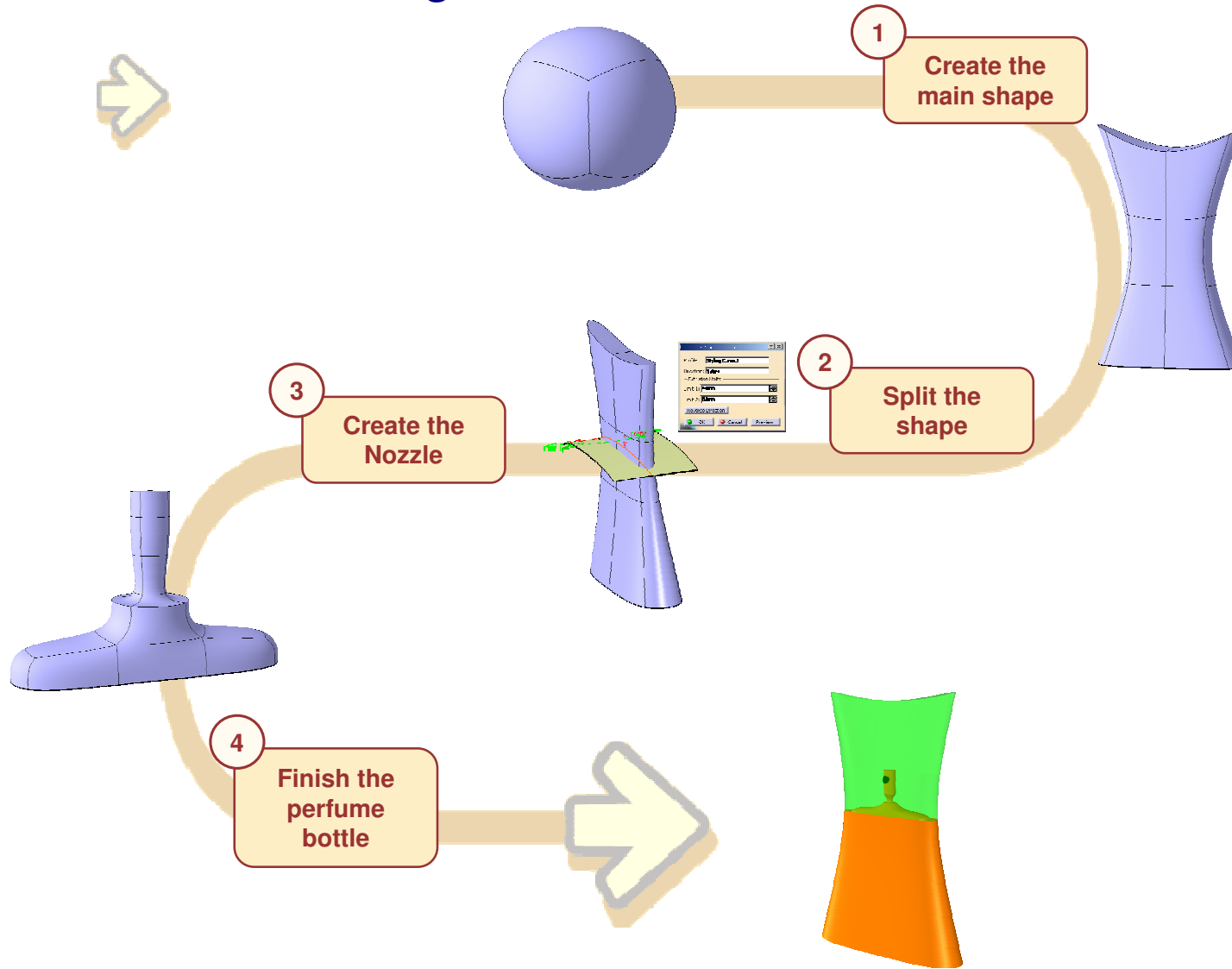# Perfume Bottle

Master Exercise Presentation

60 min

In this exercise you will design the shape of a Perfume bottle. To do so you will have to:

- **Create the main body of the Bottle.**
- **Split the body.**
- **Create the nozzle and finish the shape.**

Perfume Bottle - Design Process

1 Create the main shape

2 Split the shape

3 Create the Nozzle

4 Finish the perfume bottle

Perfume Bottle

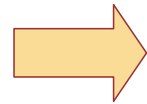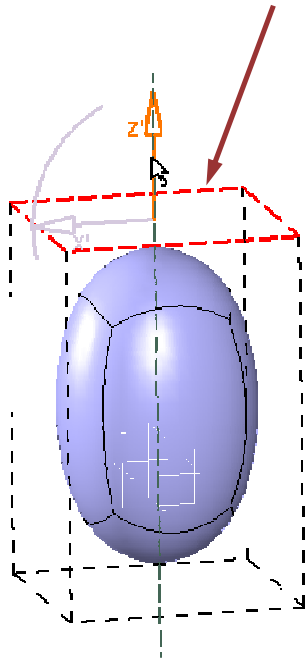## *Step 1 - Creating the Main Shape*

15 min

In this step, you will create the shape of the main body of the perfume bottle. For this you will start with a closed surface and modify it to get the final shape.
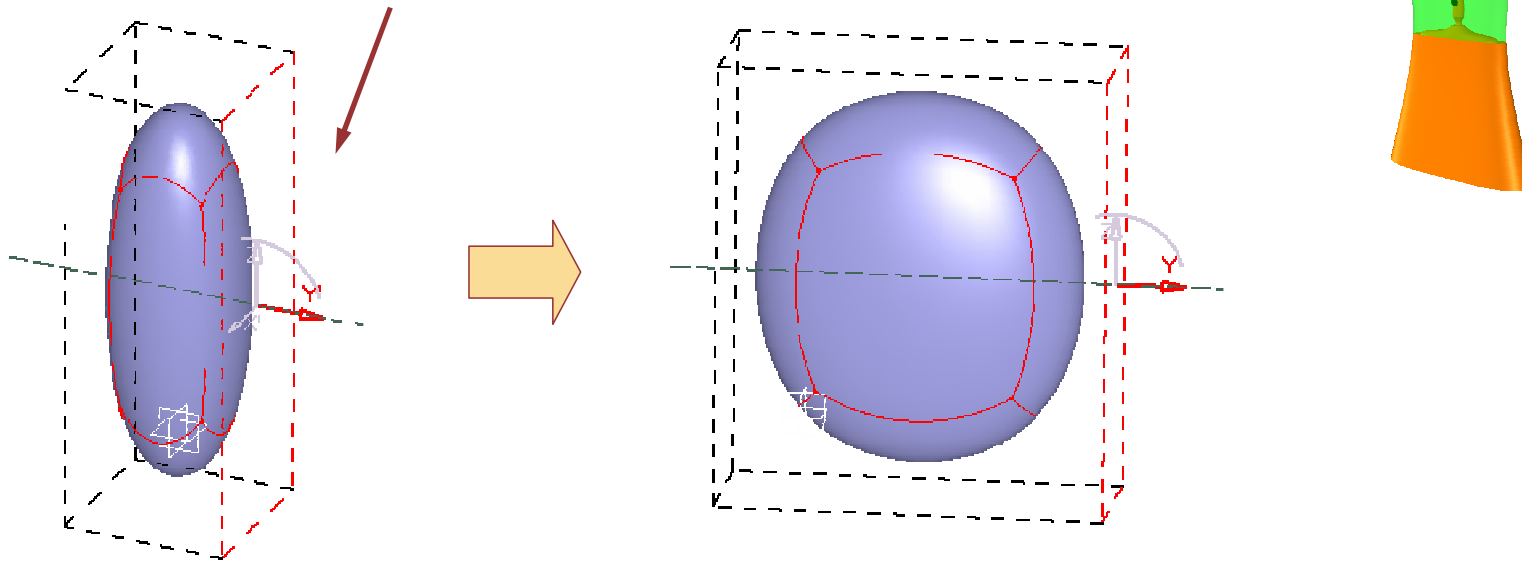
Do It Yourself (1/10)

- **Create the first Sphere.**
- **Select Face Selection icon.**
- **Select the top face and move the pointer to the top to extend the closed surface.**
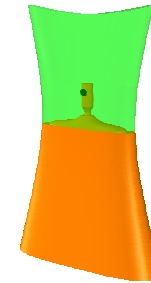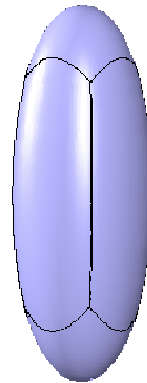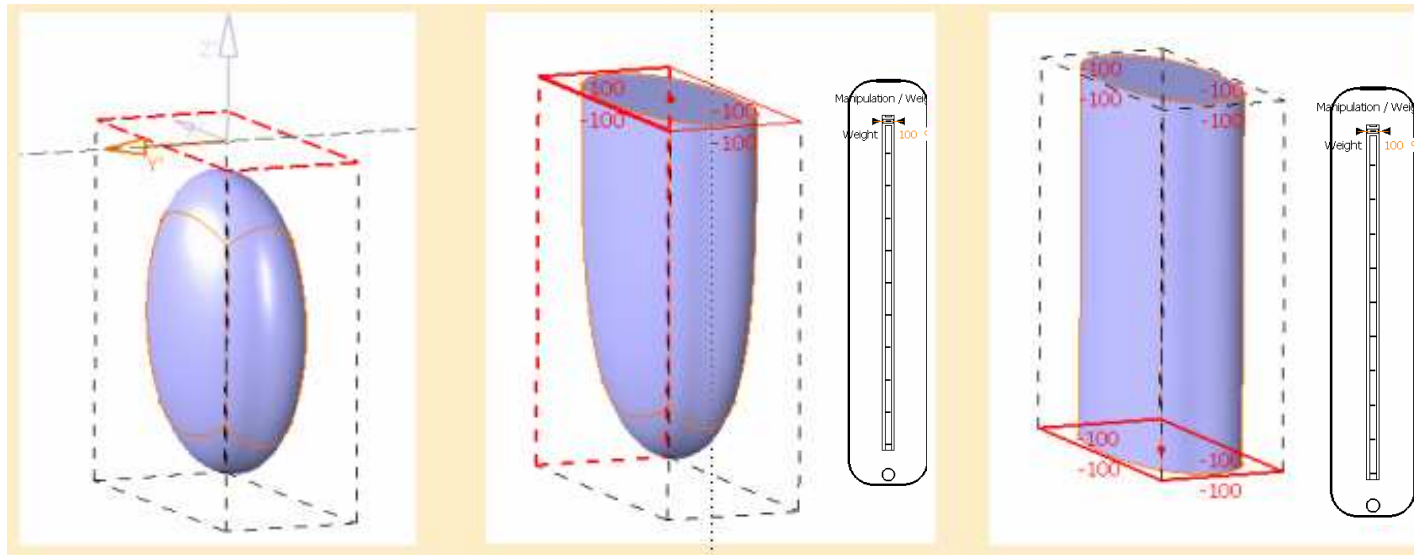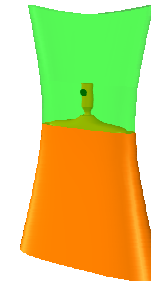
Do It Yourself (2/10)

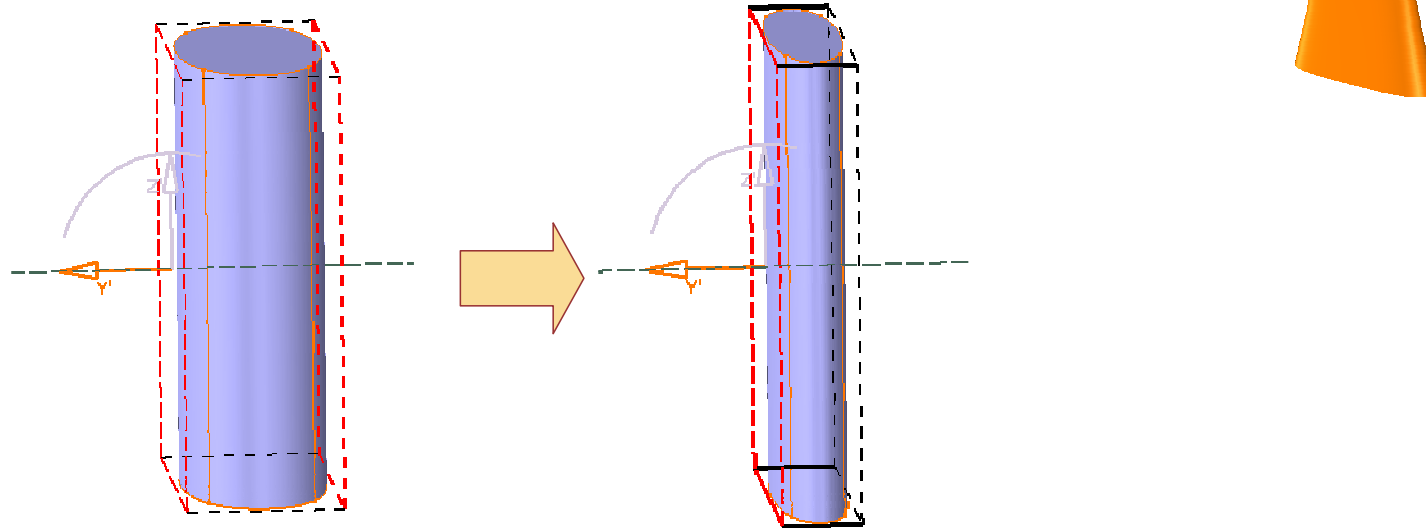- **Select a lateral face and move the pointer to the side to extend the closed surface.**

Do It Yourself (3/10)

- **Select the top face.**
- **Select the Attraction icon.**
- **Move the pointer to "100".**
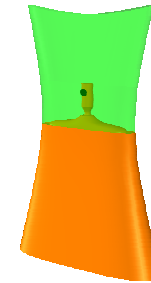- **Do the same with the bottom surface.**
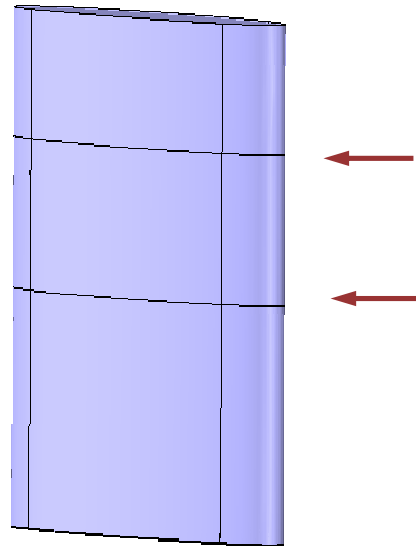
Do It Yourself (4/10)

- **Select a lateral face.**
- **Select the Translation icon.**
- **Refine the shape as shown.**

Imagine and Shape

Do It Yourself (5/10)

- **Select the Face Cutting icon.**
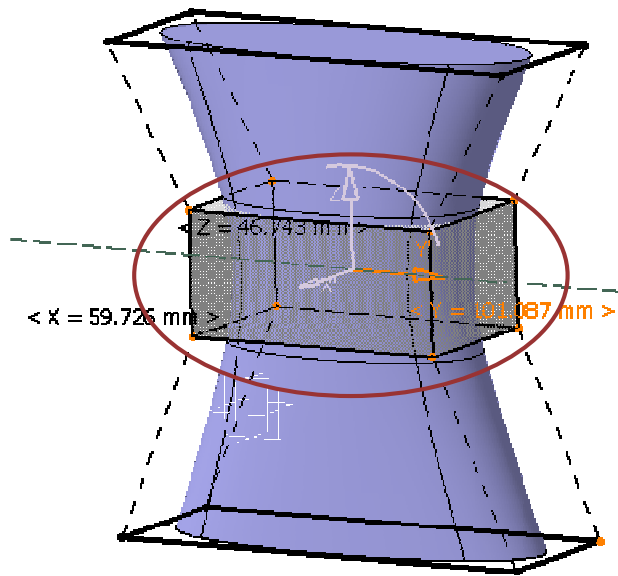- **Cut the shape twice as shown.**

Do It Yourself (6/10)

- **Double-click the surface to edit it.**
- **Press the shift key and select the 8 points as shown using Trap.**
- **Select the Translation icon.**
- **Move the 8 points down as shown.**
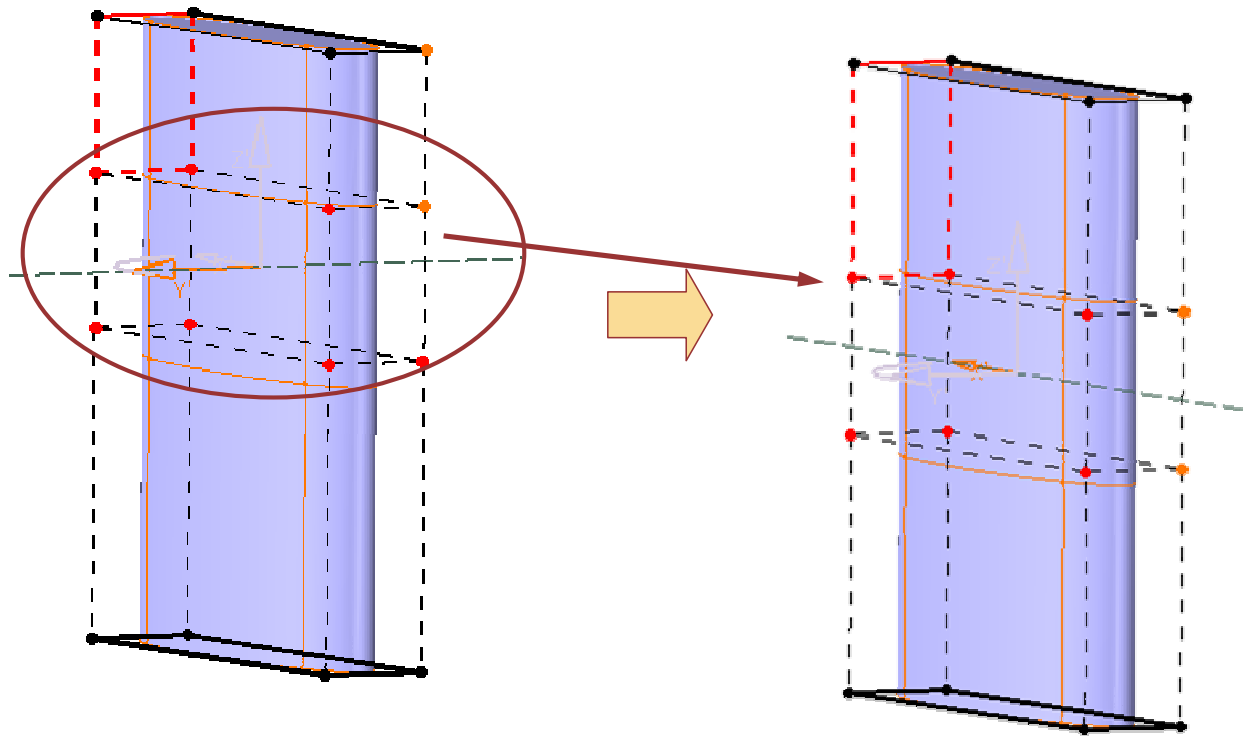
Do It Yourself (7/10)

- **Select the Affinity icon.**
- **Move the Compass (horizontal axis) to reduce the size of the selected area.**

< Z = 46.743 mm >

< X = 59.725 mm >

< Y = 101.087 mm >
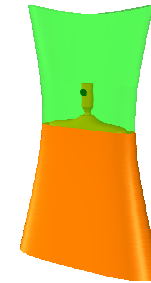
Do It Yourself (8/10)

- **Select the 'Right View'.**
- **Set "View >> Render Style >> Parallel".**
- **Select the Affinity icon.**
- **Press the shift key and select the four top points using Trap.**
- **Refine the shape as shown.**
- **Repeat three more times for the midpoints and the bottom points**
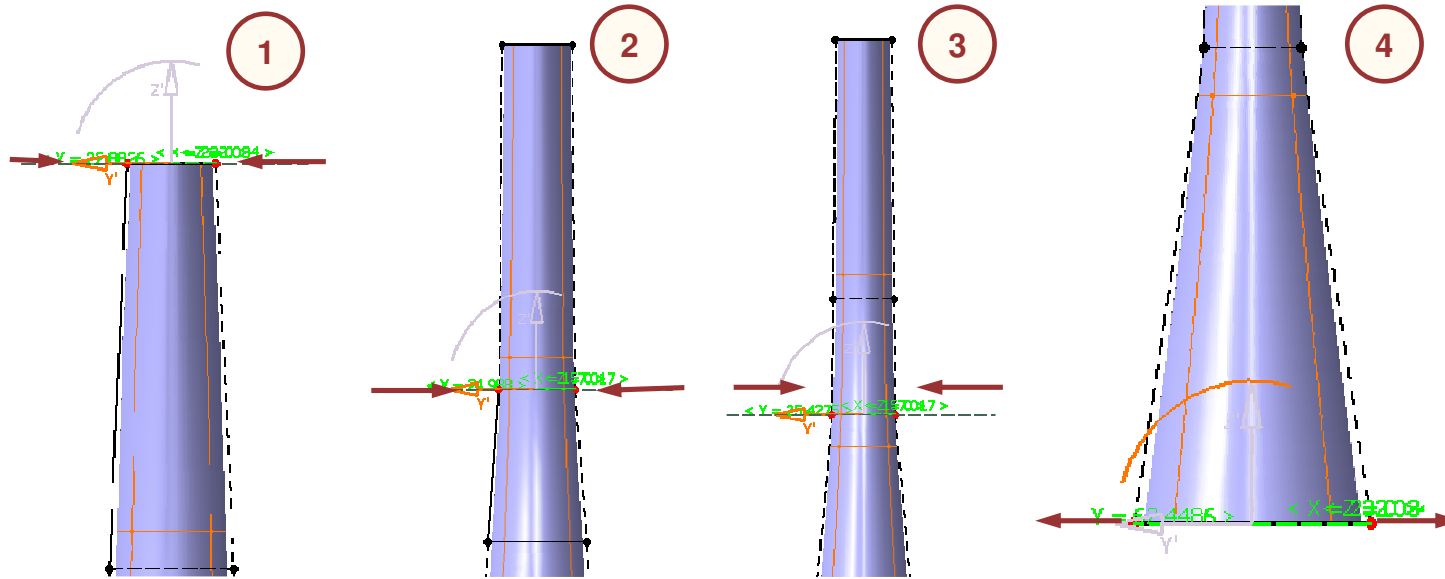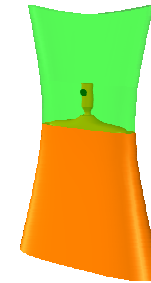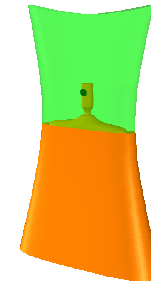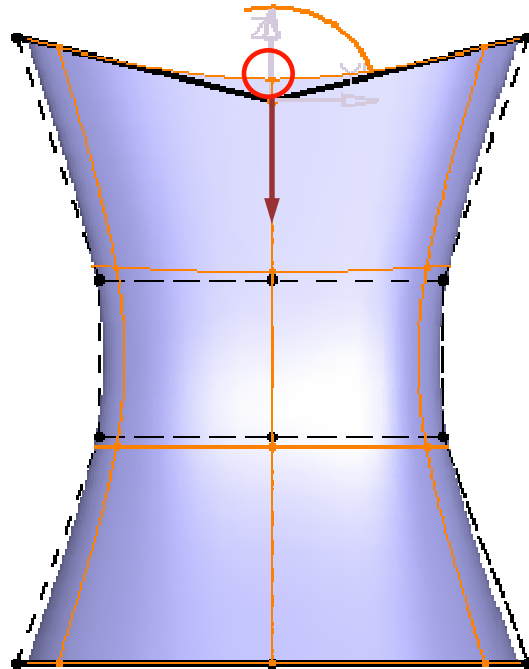
Do It Yourself (9/10)

- **Select the Front View.**
- **Select the Face Cutting icon.**
- **Cut the shape as shown.**
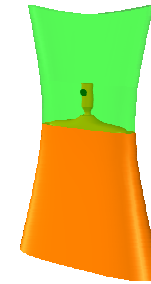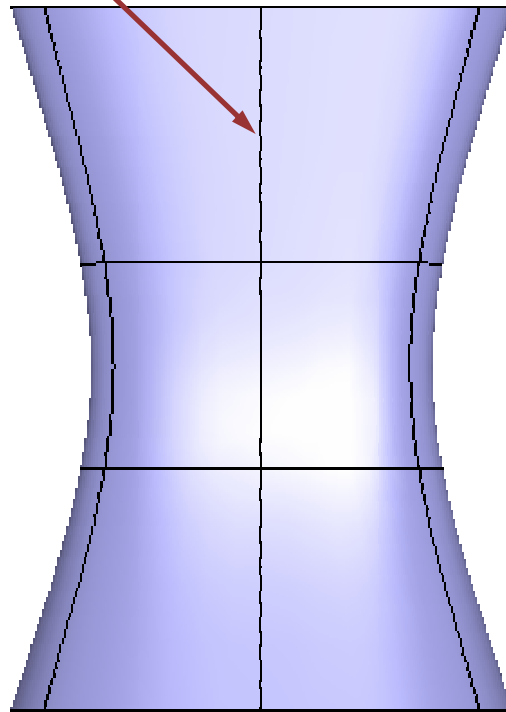
Do It Yourself (10/10)

- **Double-click the surface to edit it.**
- **Press the shift key and select the two points using Trap as shown.**
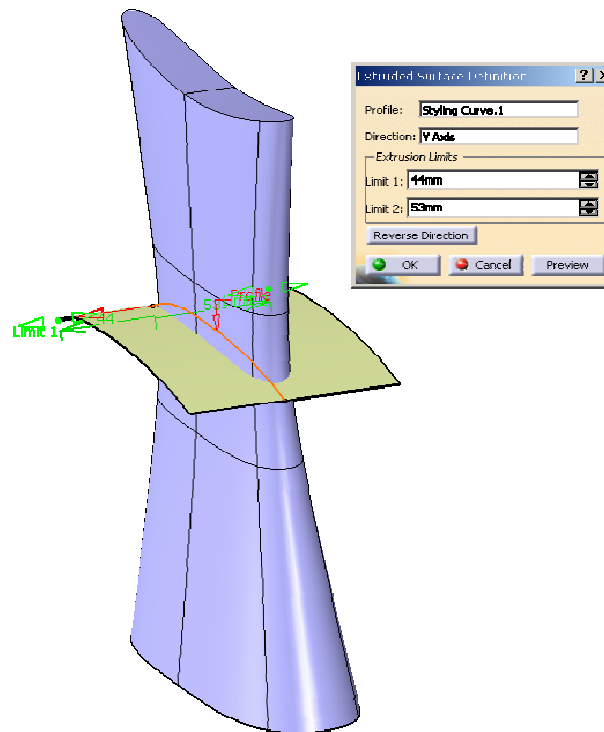- **Select the Translation icon.**
- **Move down the Compass.**
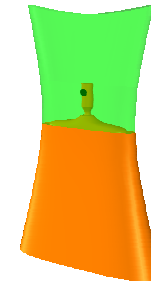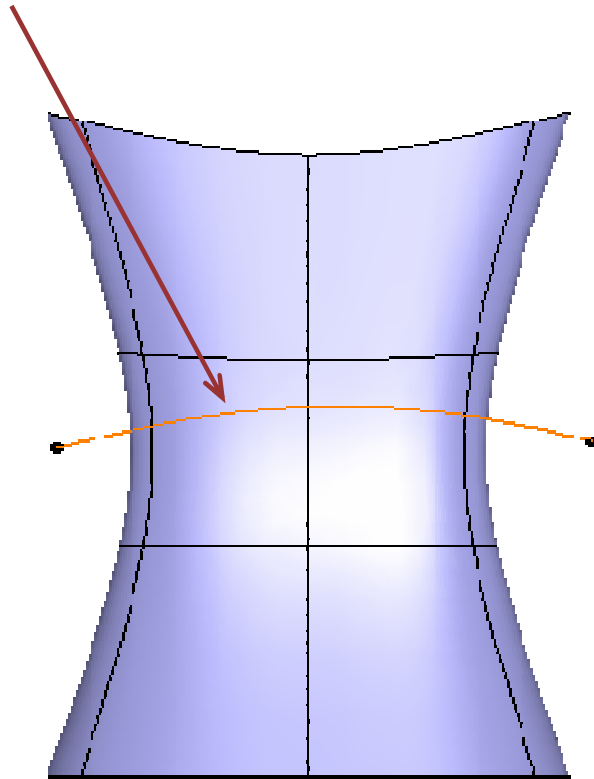
Perfume Bottle

Step 2 - Splitting the Shape

5 min

In this step you will split the main body shape. For this you have to first create a curve and create an extruded surface.
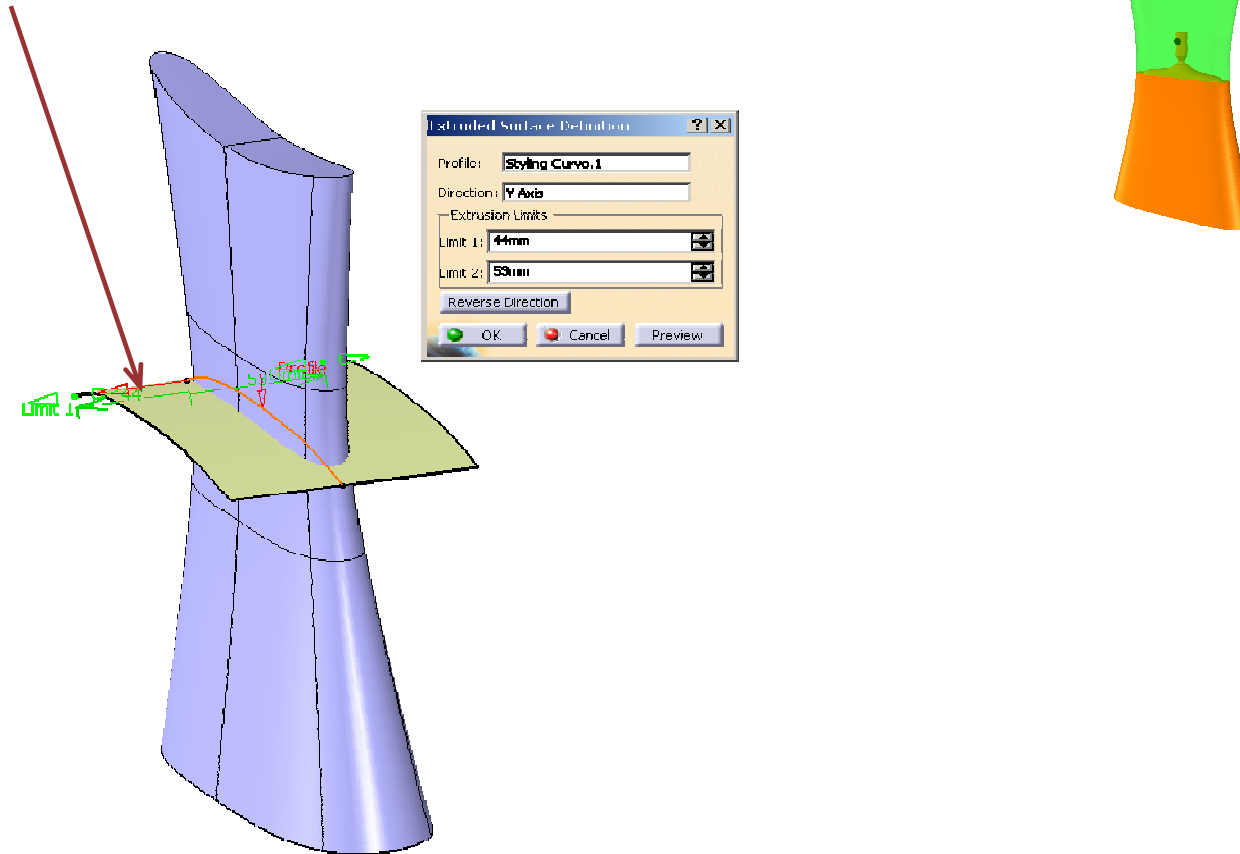
Do It Yourself (1/5)

- **Select the Sketch Curve icon.**
- **Draw a curve as shown.**
- **Use the different tools like Smoothing and Erasing to improve the curve.**
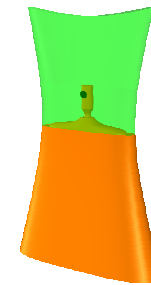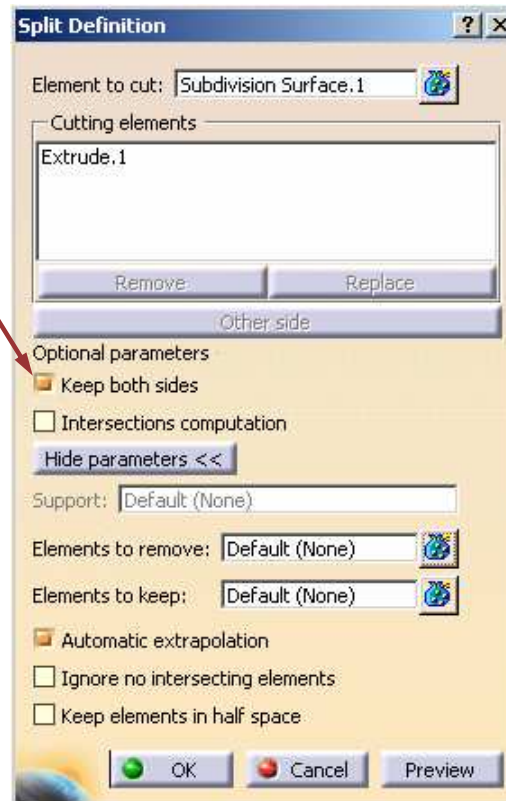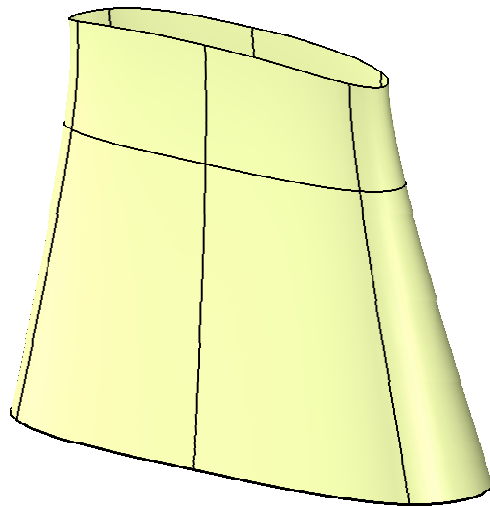
Do It Yourself (2/5)

- **Select the Extrude icon.**
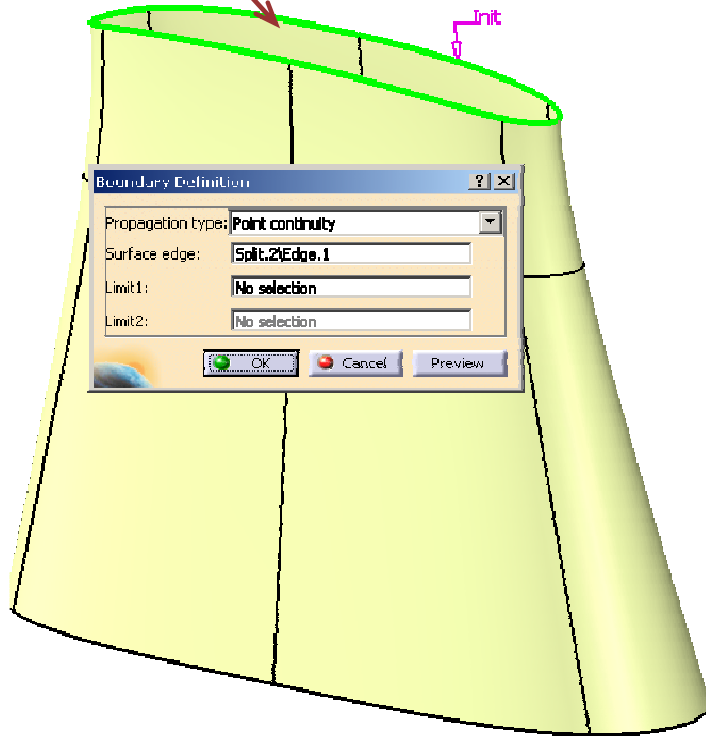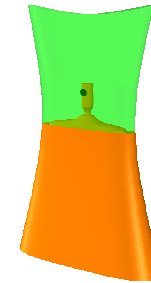- **Select the curve and Direction axis to extrude the curve as shown.**

Do It Yourself (3/5)

- **Select the Split icon.**
- **Select the Subdivision surface as the element to cut.**
- **Select the extruded surface as the cutting element.**
- **Check "Keep both sides" option.**
- **Hide the top surface.**

Split Definition

Element to cut: Subdivision Surface.1

Cutting elements

Extrude.1

Remove   Replace

Other side

Optional parameters

☐ Keep both sides

☐ Intersections computation

Hide parameters <<

Support: Default (None)

Elements to remove: Default (None)

Elements to keep: Default (None)

☐ Automatic extrapolation

☐ Ignore no intersecting elements

☐ Keep elements in half space

● OK   ● Cancel   Preview

Do It Yourself (4/5)

- **Select the Boundary icon.**
- **Select the top boundary.**
- **Click OK.**

Init

Boundary Definition

Propagation type:	Point continuity
Surface edge:	Split.2\Edge.1
Limit1 :	No selection
Limit2 :	No selection

OK   Cancel   Preview

Do It Yourself (5/5)

- **Go to GSD workbench**
- **Select the Fill icon.**
- **Select the boundary.**
- **Click OK.**

Fill Surface Definition

Boundary:

No	Curves	Supports
1	Boundary.1	

AddAfter   Replace   Remove
AddBefore   ReplaceSupport   RemoveSupport
Continuity: Point
Passing point: No selection
☐ Planar Boundary Only
☐ Deviation: 0.001mm

OK   Cancel   Preview
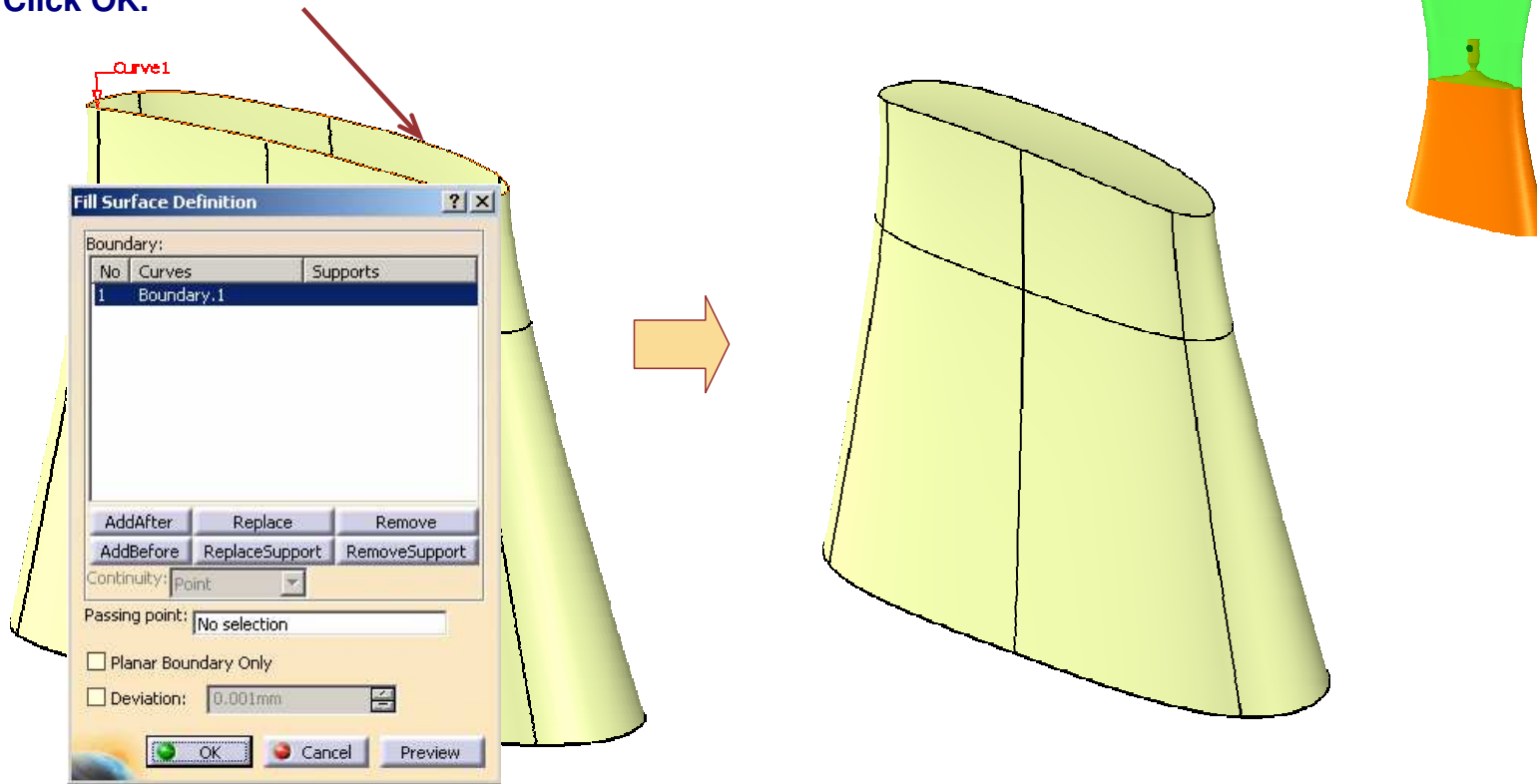
- **Switch to IMA Workbench.**

Perfume Bottle

Step 3 - Creating the Nozzle

30 min

In this step you will create the perfume bottle nozzle. For this you will start with a new closed surface. Try to obtain the shape of the nozzle similar to the one shown in the exercise.
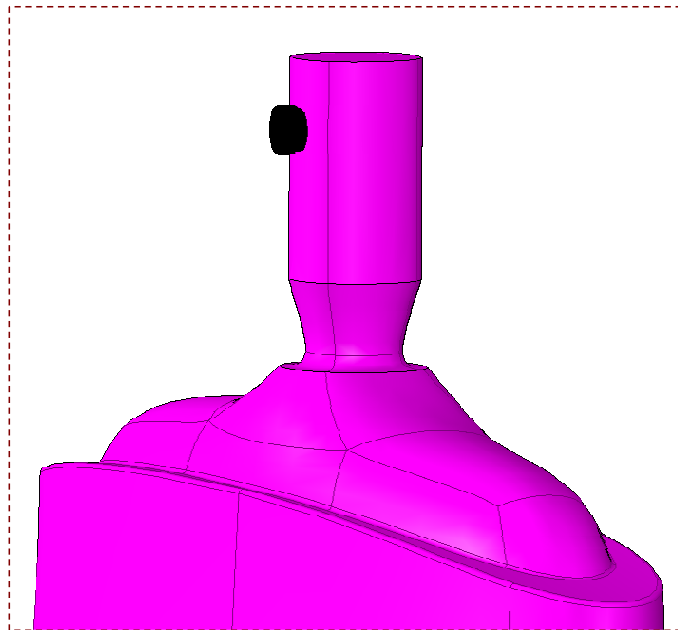
Do It Yourself (1/15)

- **Select the Sphere icon.**
- **Select the Face Erasing icon.**
- **Erase the bottom face**
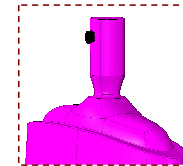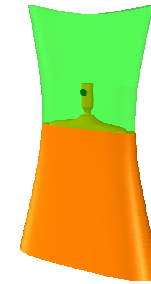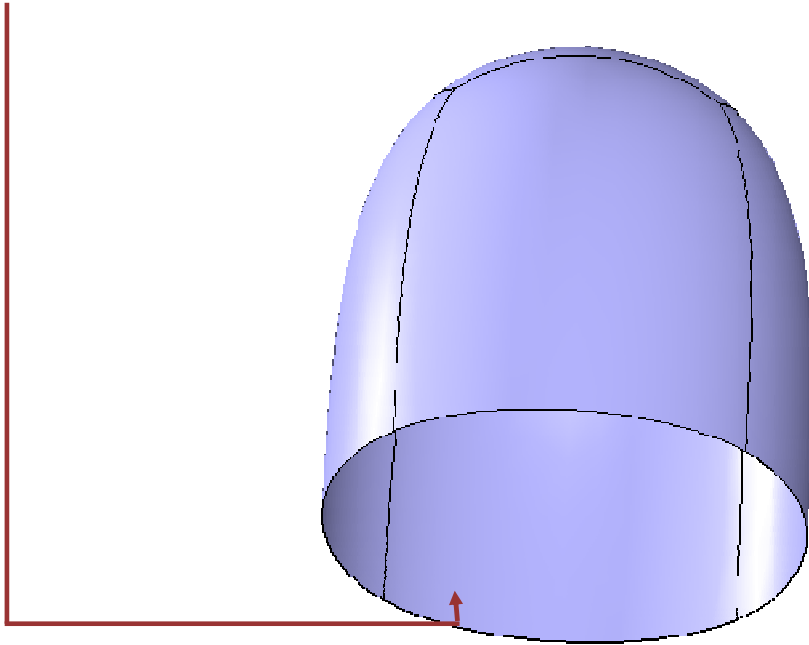
Do It Yourself (2/15)

- **Select the whole surface.**
- **Select the Affinity icon.**
- **Press the Ctrl Key.**
- **Resize the surface as shown.**
- **Position the surface as shown using Translation.**
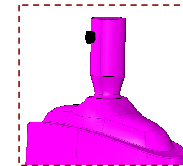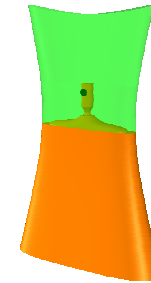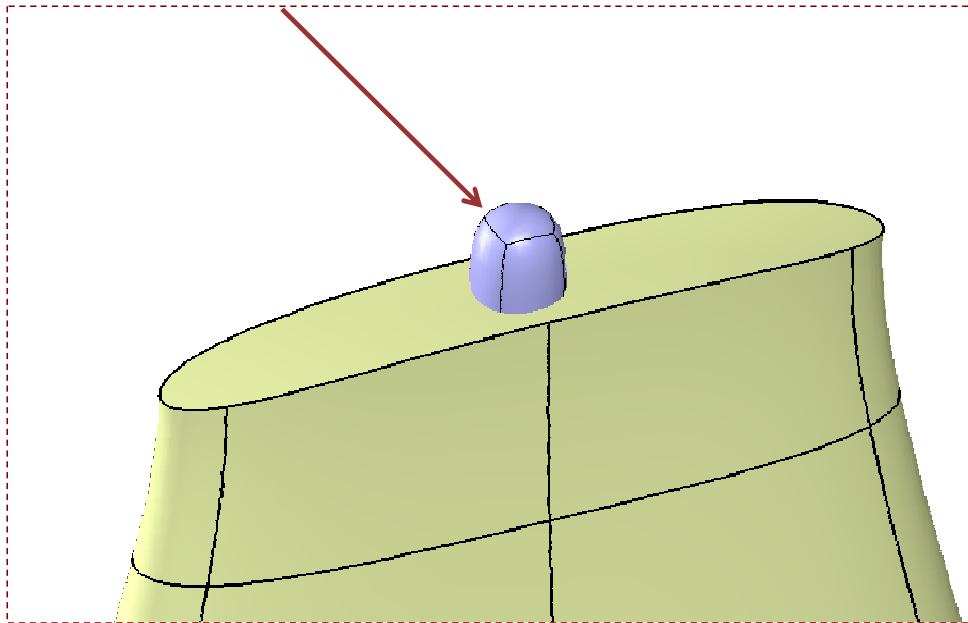
Do It Yourself (3/15)

- **Select the Extrusion icon.**
- **Extrude the surface as shown.**
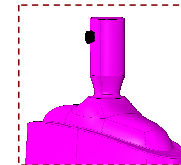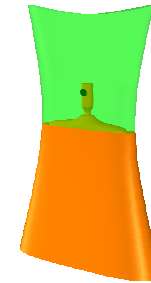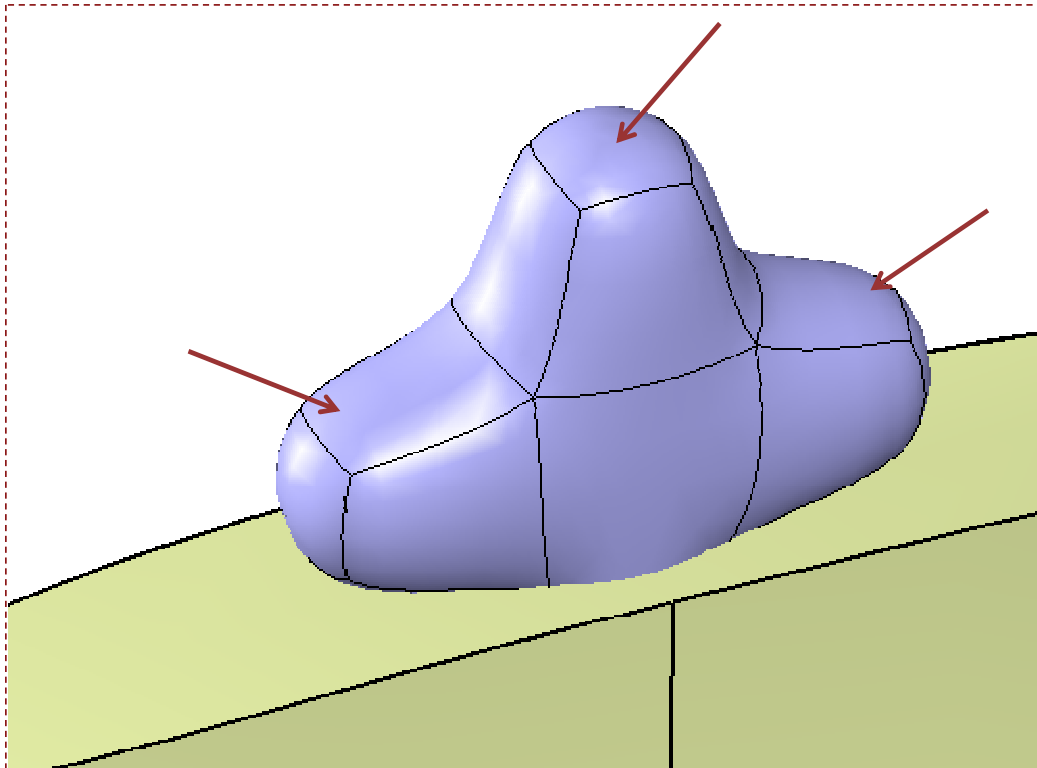
Do It Yourself (4/15)

- **Select the Working Zone Definition icon and select the 4 vertices as shown.**
- **Select Swap selection**
- **Select the Affinity icon.**
- **Select all**
- **Move the handles to extend the surface as shown.**
- **Select De/Activate icon to see entire mesh**
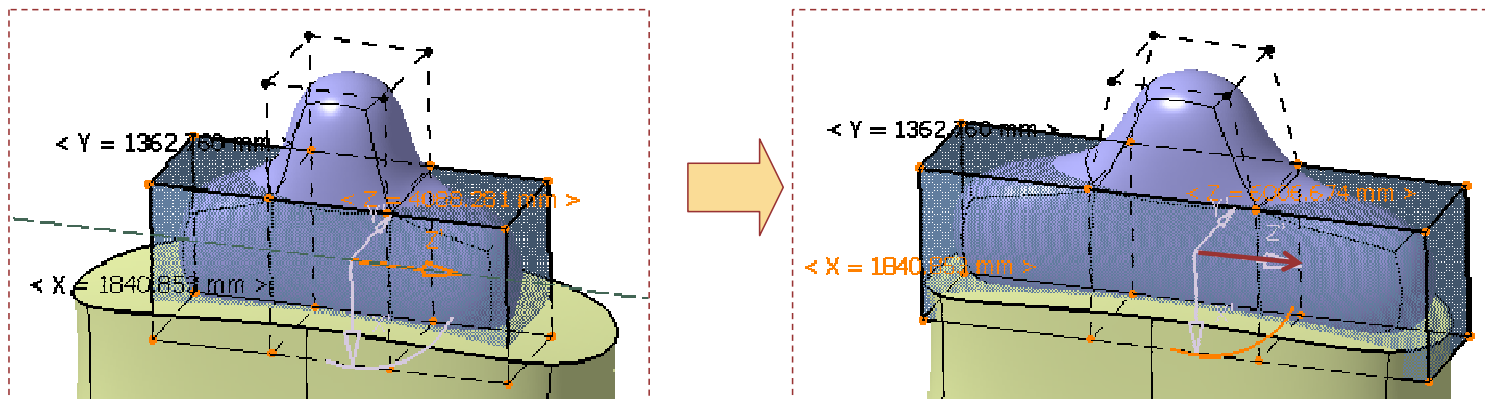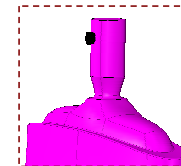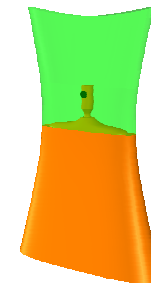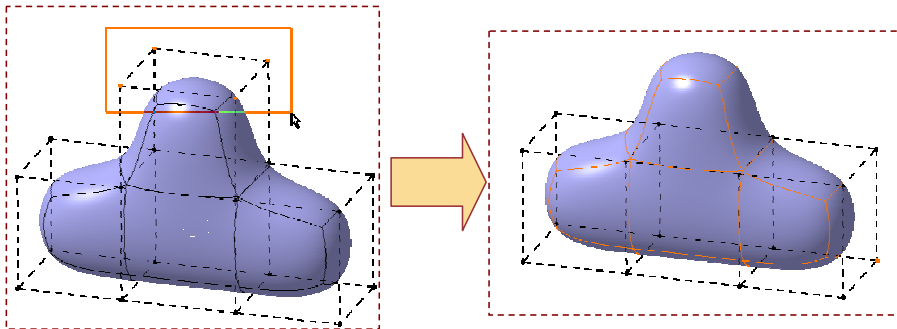
Do It Yourself (5/15)

- **Select the Erasing icon.**
- **Erase the two lower surfaces.**
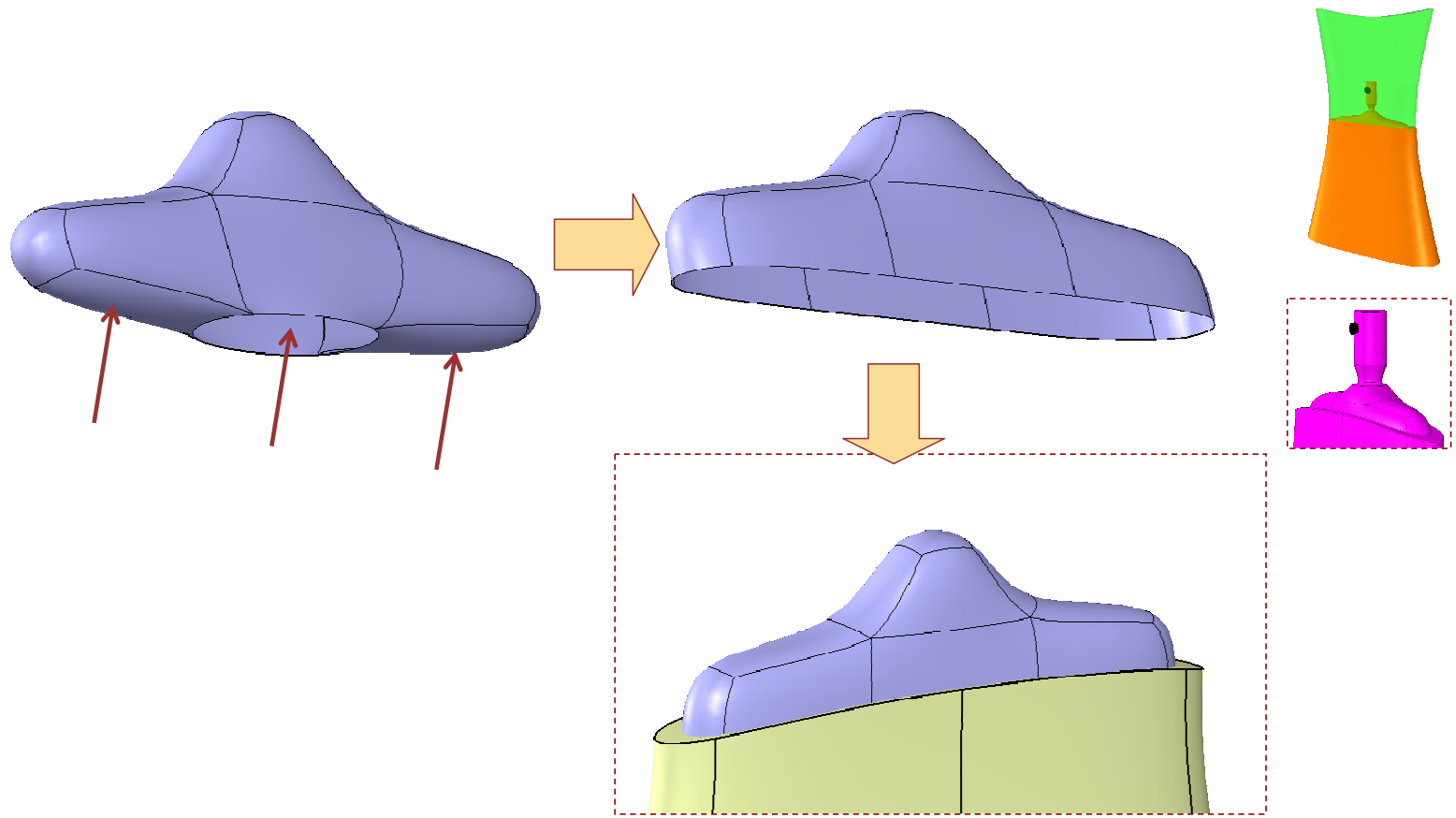
Do It Yourself (6/15)

- **Select the Vertex Selection icon.**
- **Press the shift key and select the 12 points as shown.**
- **Select the Affinity icon.**
- **Move the manipulator as shown.**
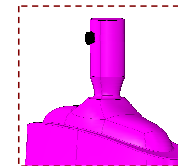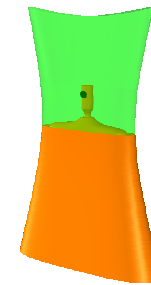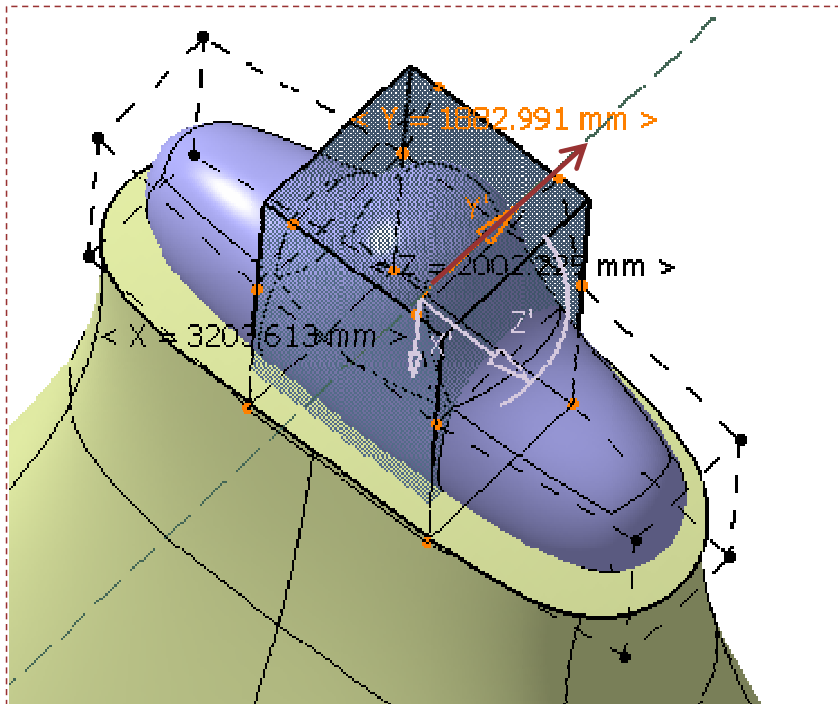
Do It Yourself (7/15)

- **Select the Face Selection icon.**
- **Select the top surface.**
- **Select the Attraction icon.**
- **Move the value to "100".**
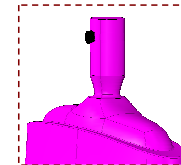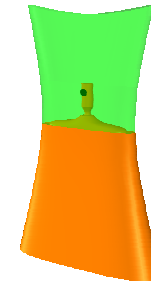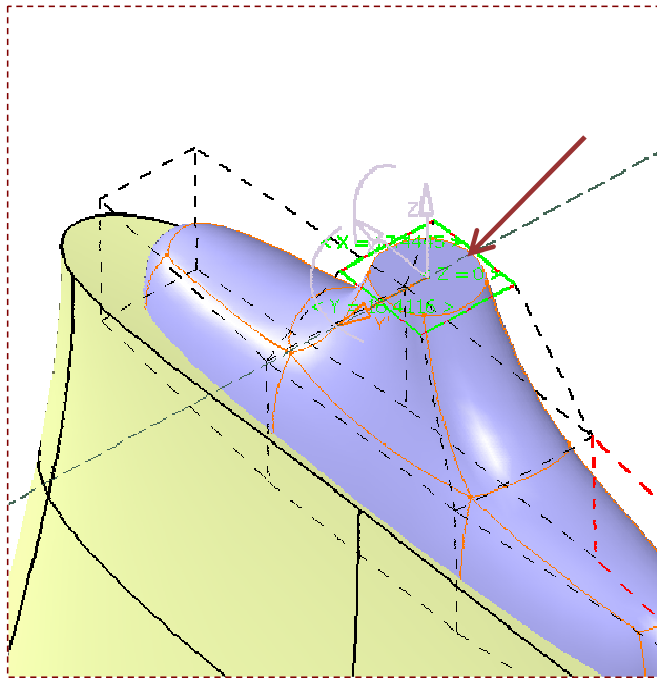
Do It Yourself (8/15)
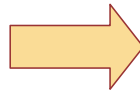
- **Select the Translation icon.**
- **Move down the Compass as shown.**
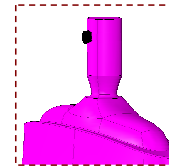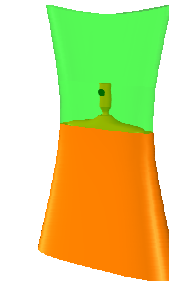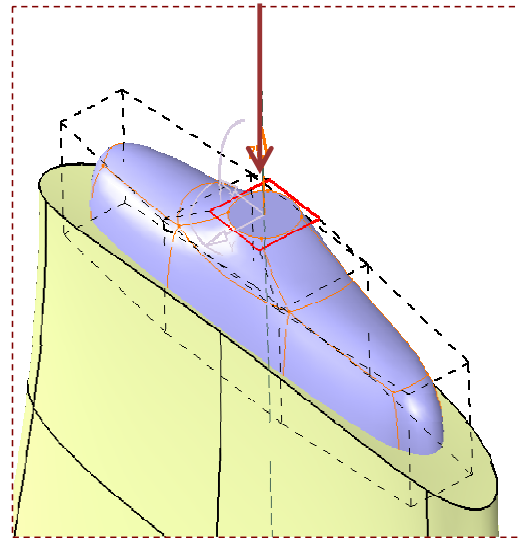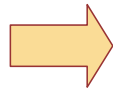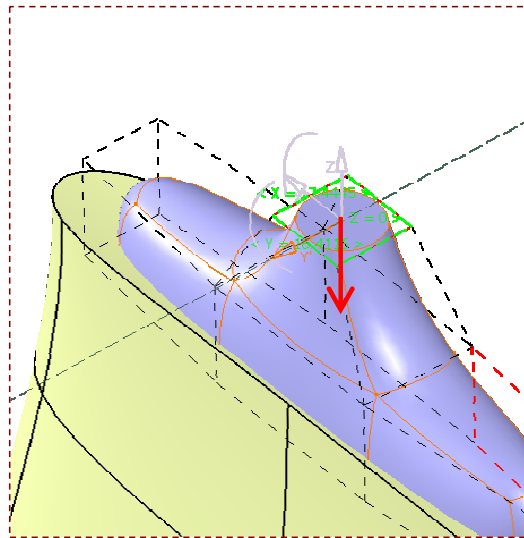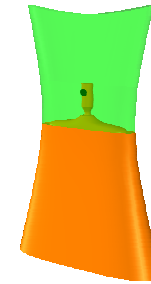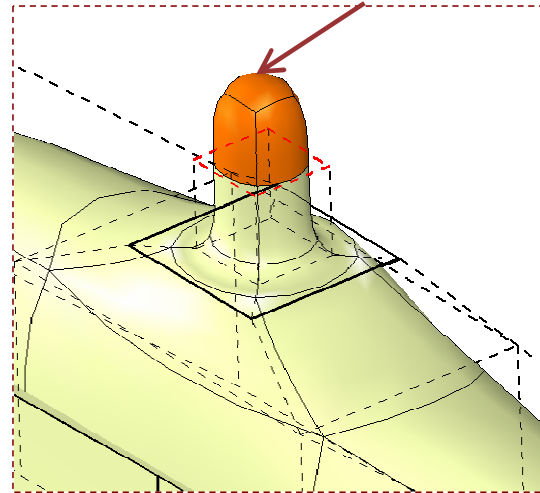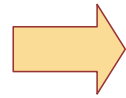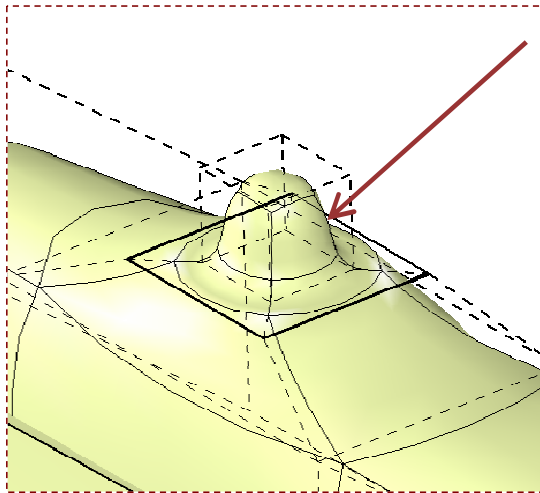
Do It Yourself (9/15)

- **Select the Face Subdivision icon. Keep the ratio 0.5**
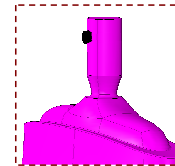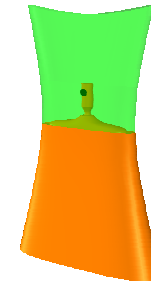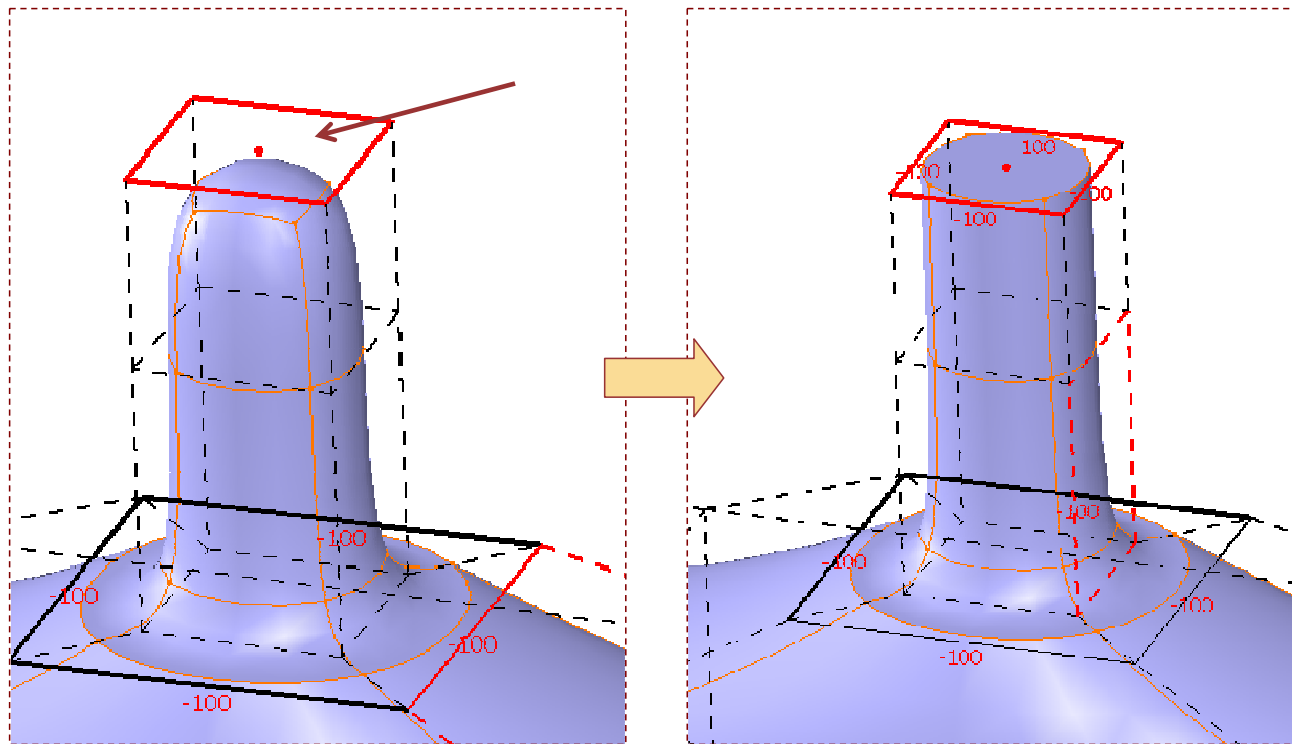- **Select the top surface to subdivide it.**
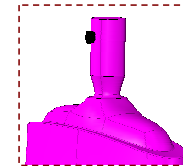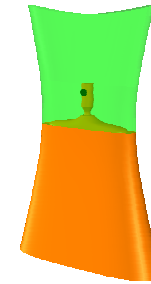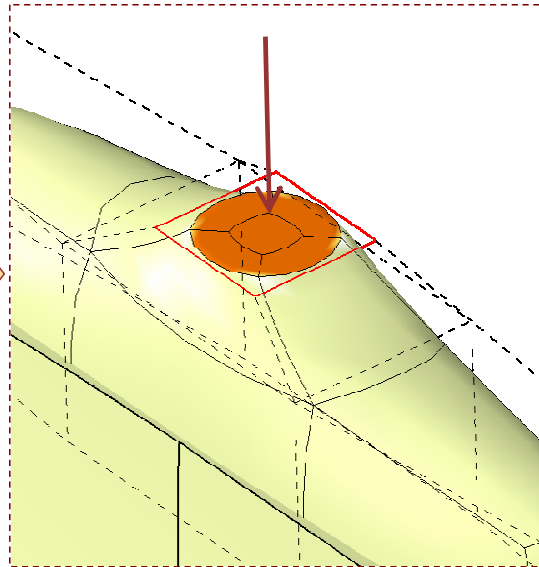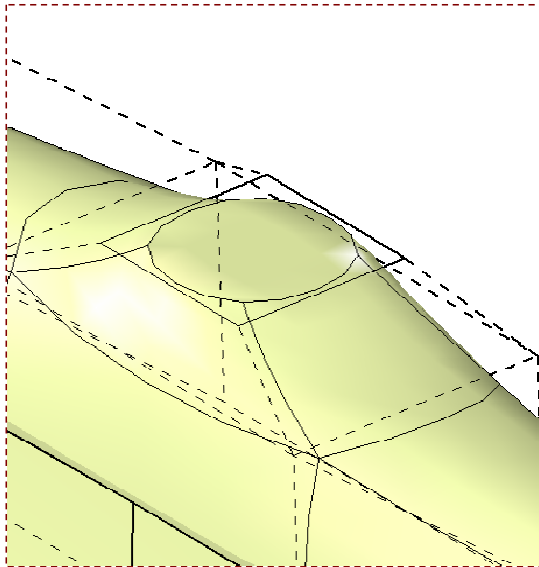
Do It Yourself (10/15)

- **Select the Extrusion icon.**
- **Extrude the surface as shown (2 times).**
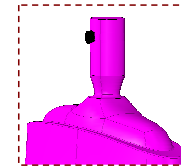
Do It Yourself (11/15)

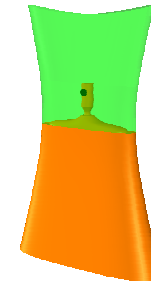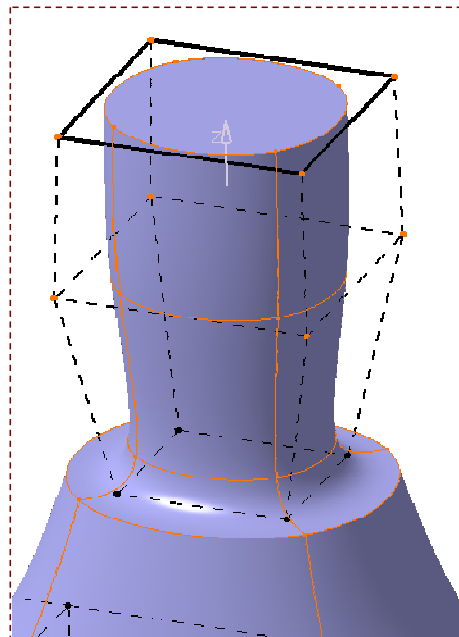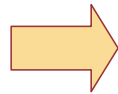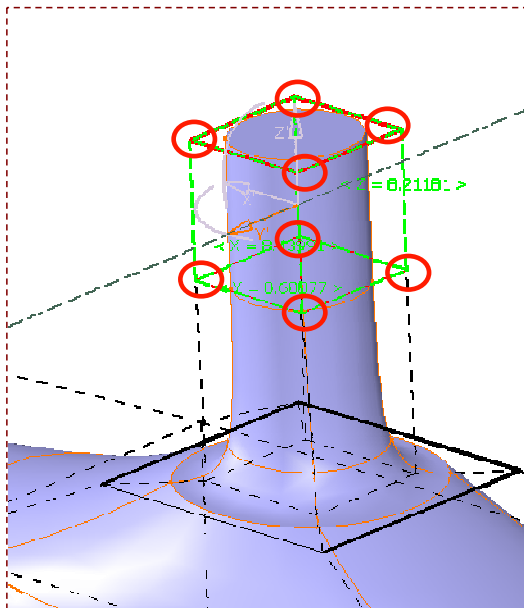- **Select the Face Selection icon.**
- **Select the top surface.**
- **Select the Attraction icon.**
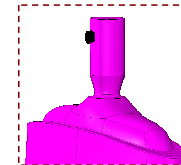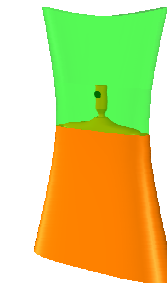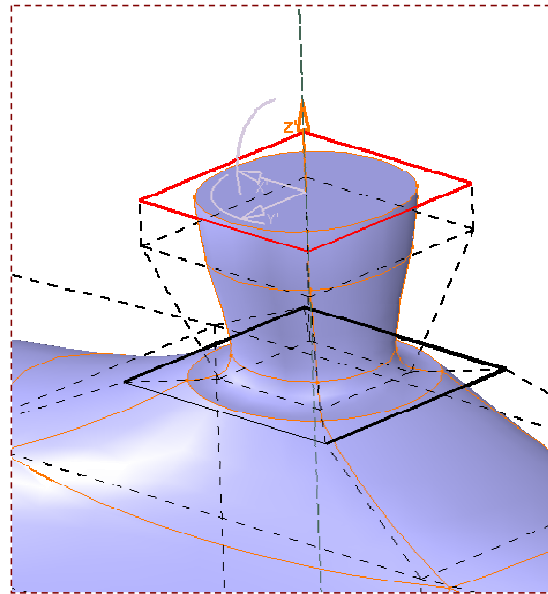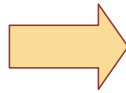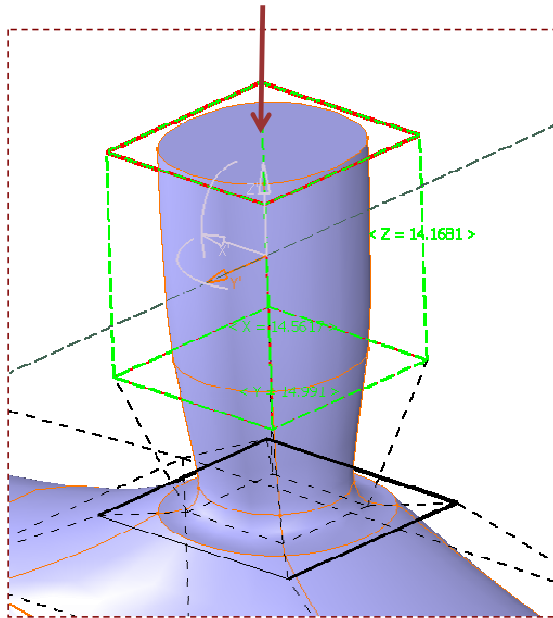- **Move the pointer to "100".**

Do It Yourself (12/15)

- **Select the Vertex Selection icon.**
- **Press the Shift key and select the 8 points as shown.**
- **Select the Local Normals icon.**
- **Move the Manipulator as shown.**
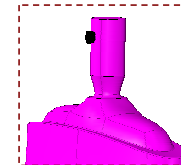
Do It Yourself (13/15)

- **Select the Face Selection icon.**
- **Select the Translation icon**
- **Select the top face.**
- **Move down the compass as shown.**

Do It Yourself (14/15)

- **Select the Edge Selection icon.**
- **Select the four edges as shown in picture.**
- **Select the Attraction of the surface by a vertex icon.**
- **Move the value to "100".**
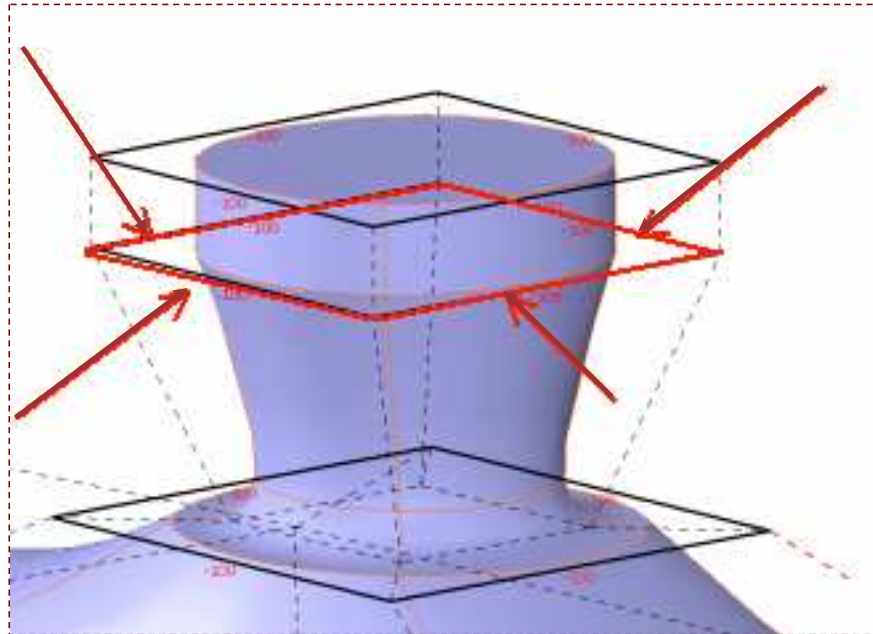
Do It Yourself (15/15)

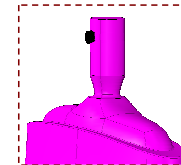- **Select the Face Selection icon.**
- **Select the top surface.**
- **Select the Translation icon.**
- **Move the Manipulator as shown.**
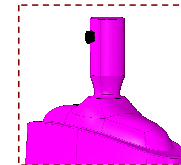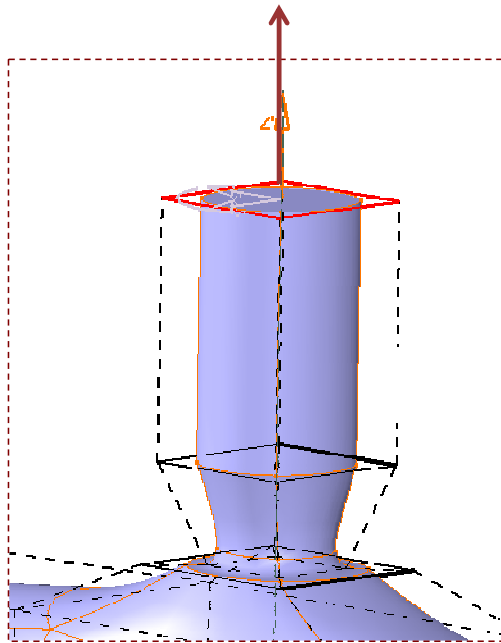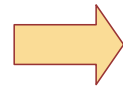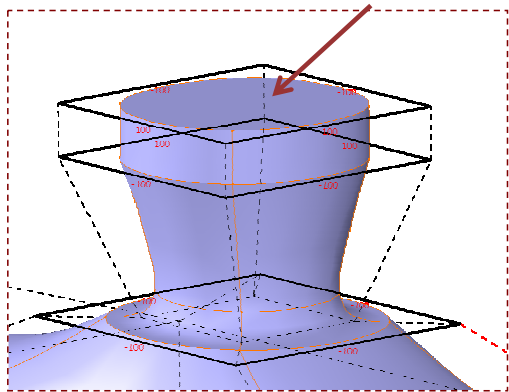
Perfume Bottle

Step 4 - Finishing the Perfume Bottle

10 min

In this step you will give the finishing touch to the Perfume bottle. For that you have to:

- **Create a solid from closed surfaces in Part Design workbench.**
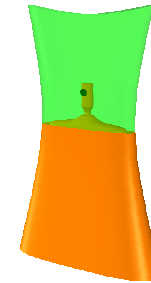- **Apply color to the faces.**
- **Apply transparency to the surfaces**

Do It Yourself

Change the color, transparency property and add some fillets to finish the part.

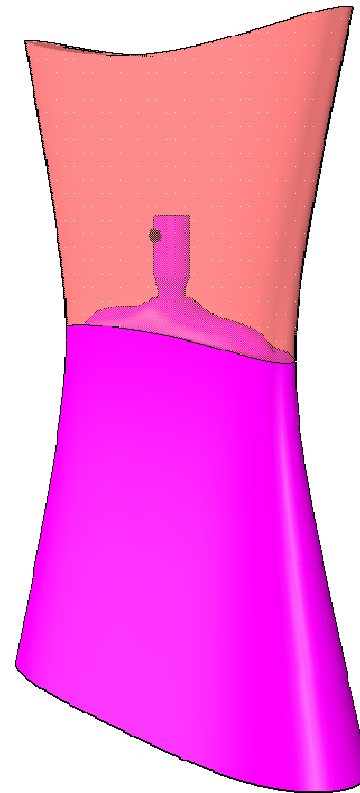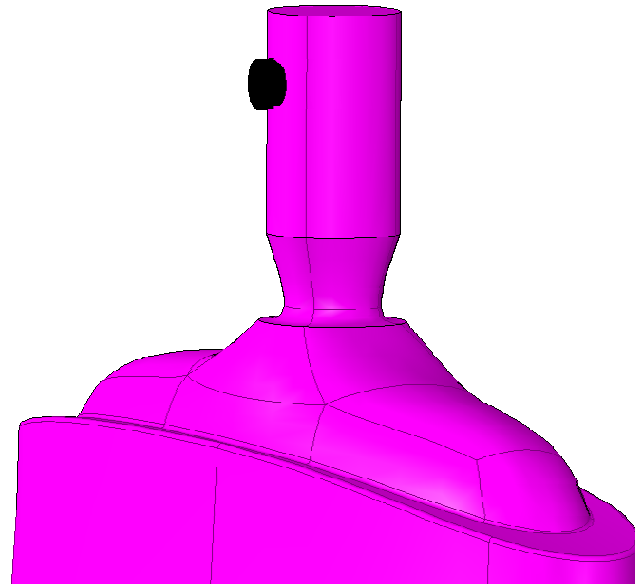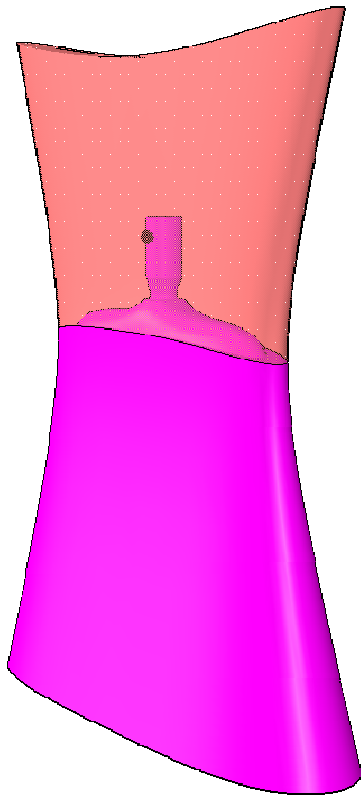# Added Exercise 1: Hair Dryer

You will complete the master exercise by performing the following steps.

- **Added Exercise Presentation: Hair Dryer**
- **Added Exercise Step (1): Creating the Main Shape**
- **Added Exercise Step (2): Creating the Nozzle**
- **Added Exercise Step (3): Creating the Top Shape**
- **Added Exercise Step (4): Creating the Handle**
- **Added Exercise Step (5): Creating the Buttons**
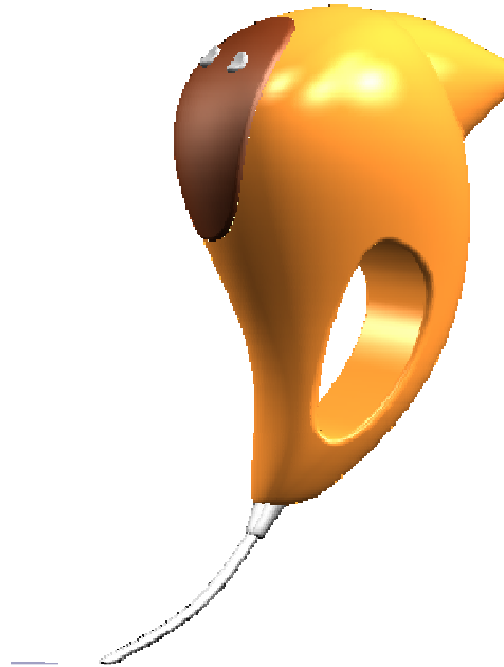- **Added Exercise Step (6): Creating the Wire**

Hair Dryer

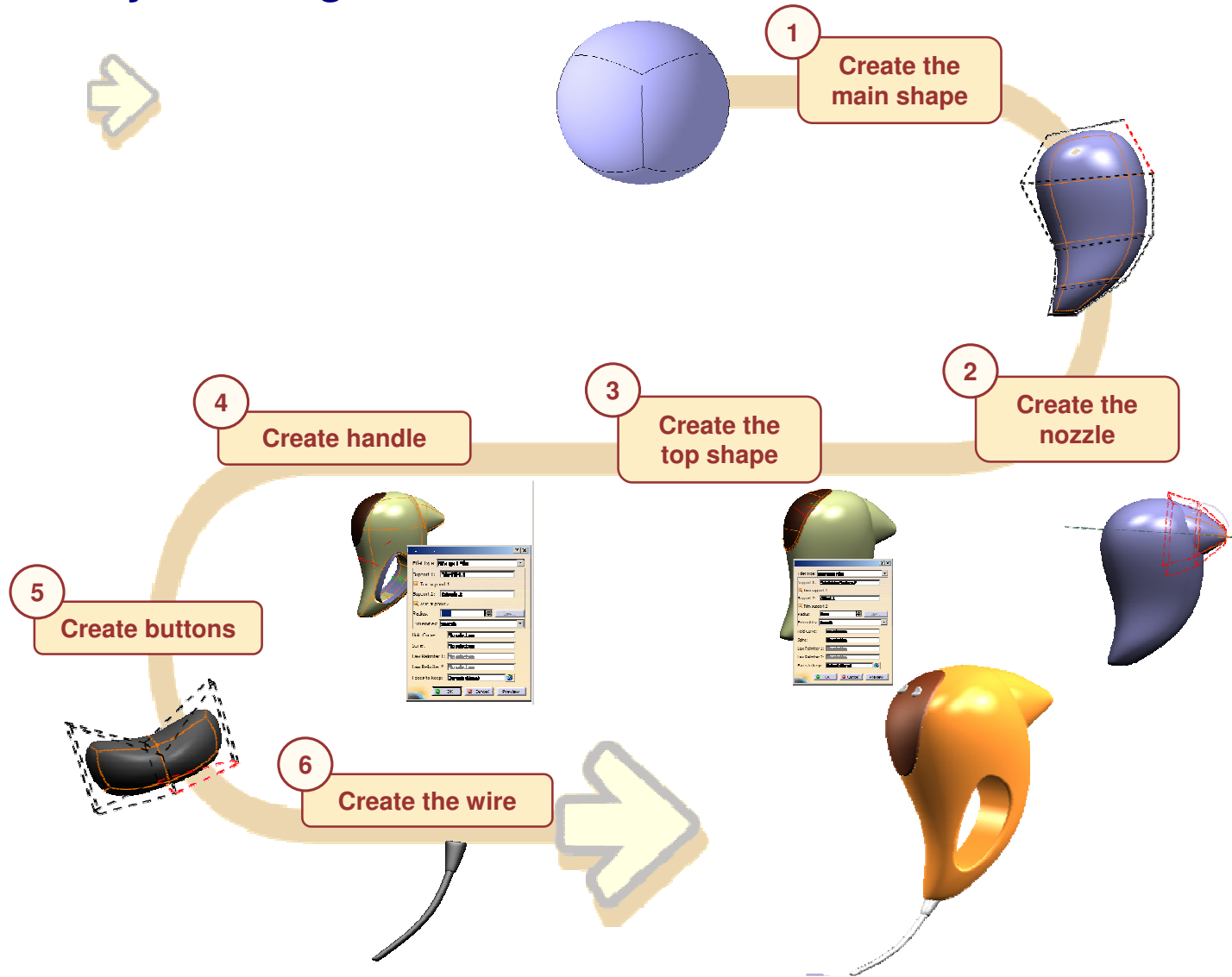## *Added Exercise Presentation*

1Hr 40 min

In this exercise you will create the styling surfaces of a Hair Dryer. You will design the shape of various parts such as the Main Body, Nozzle, Top shape and Buttons.

Hair Dryer - Design Process

1 Create the main shape

2 Create the nozzle

3 Create the top shape

4 Create handle

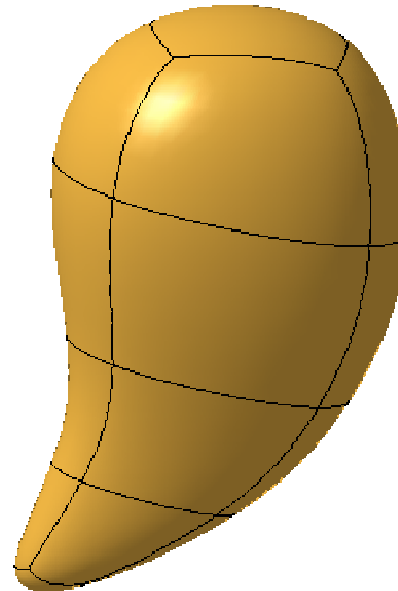**5** Create buttons

6 Create the wire

Hair Dryer

## *Step 1 - Creating the Main Shape*

15 min

In this step, you will design the main body shape of the Hair Dryer. You will start with a closed surface and deform it to obtain the final body shape.

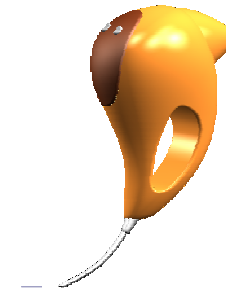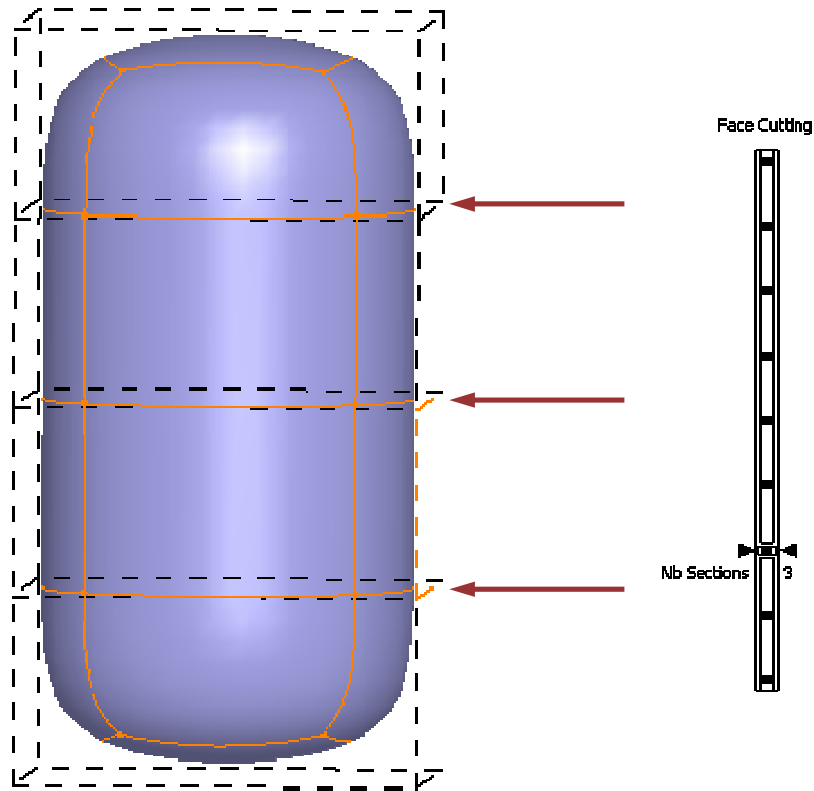**You might not get the exact shape, but try to get as close to the shape as possible.**

Do It Yourself (1/4)

- **Create the first Sphere.**
- **Select the Face Selection icon.**
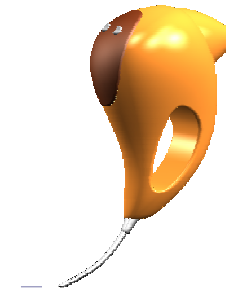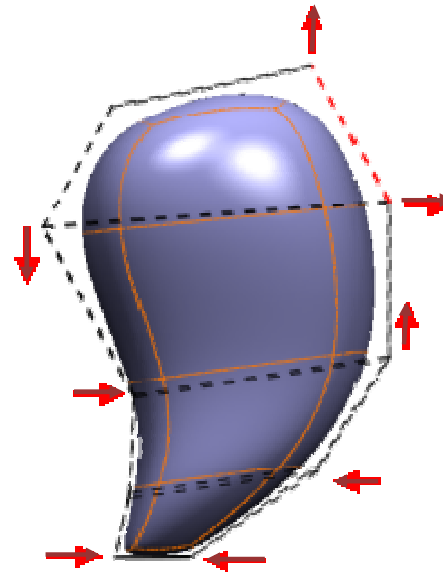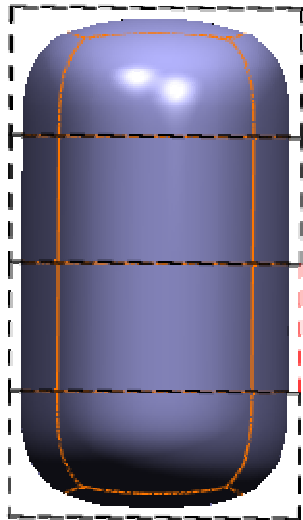- **Select the top face and move the pointer upwards to extend the closed surface.**
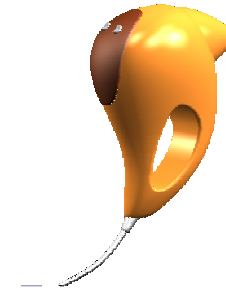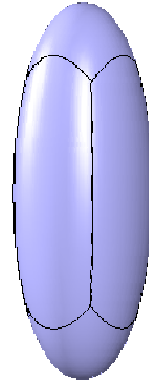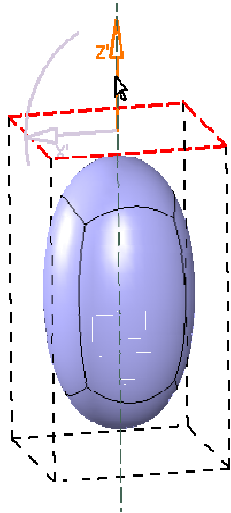
Do It Yourself (2/4)

● **Select the Face Cutting icon.**

● **Cut three times.**

Face Cutting

Nb Sections   3

Do It Yourself (3/4)

- Switch to the Front View.
- Select the Vertex Selection icon. Make use of Shift key and Trap for vertex selection.
- Select the Translation icon.
- Move the Vertices as shown.

Do It Yourself (4/4)

- **Select the Vertex Selection icon.**
- **Make use of Shift key and Trap for vertex selection.**
- **Select the Affinity icon.**
- **Refine the shape as shown.**
- **Press the Select all to select the whole surface.**
- **Move the compass to reduce the size.**

< Z = 229.970 mm >

< X = 145.556 mm >

< X = 113.852 mm >
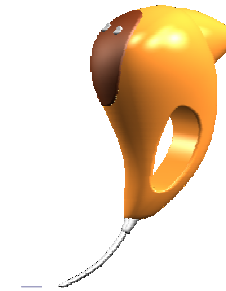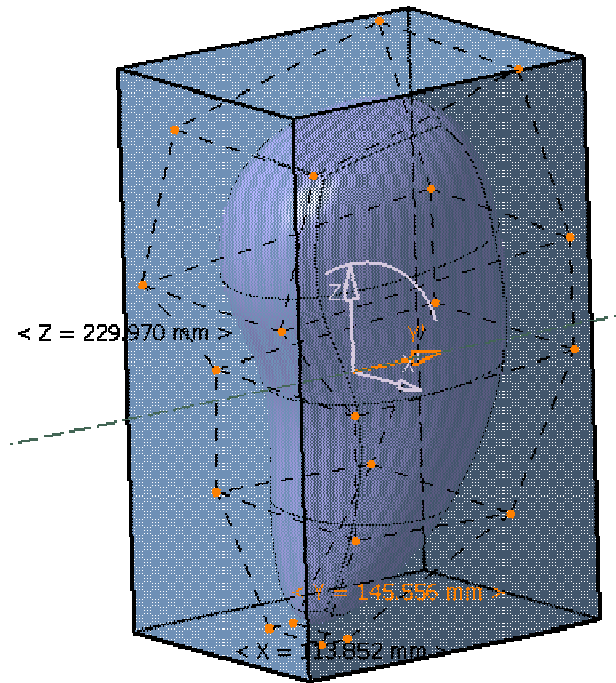
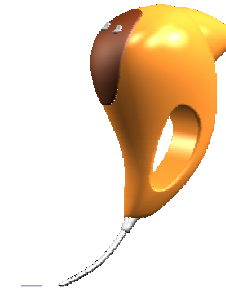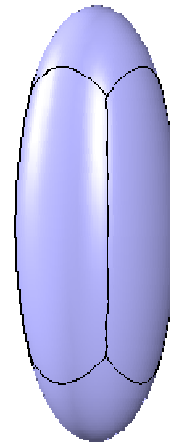# Hair Dryer

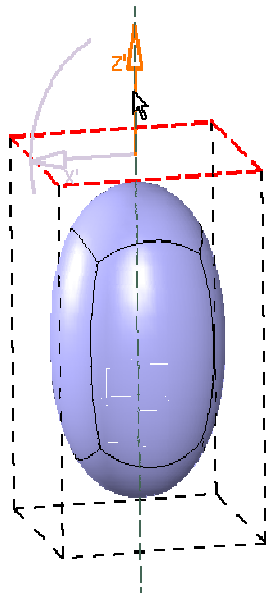## *Step 2 - Creating the Nozzle*

20 min

In this step, you will create the shape of the nozzle. You will start with a new Closed surface and after achieving a good style for the nozzle you will join it to the main body.
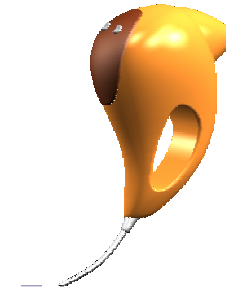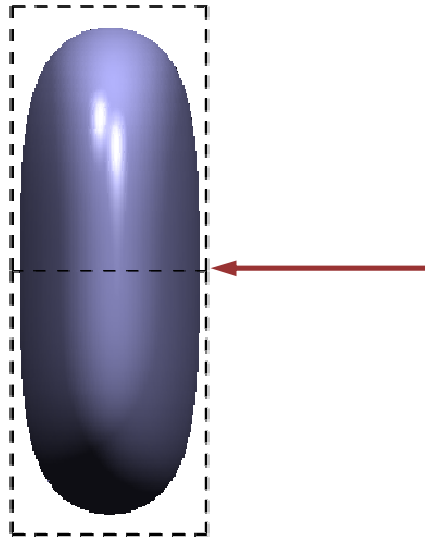
Do It Yourself (1/8)

- **Create the Sphere.**
- **Select the Face Selection icon.**
- **Select the top face and move the pointer upwards to extend the closed surface.**
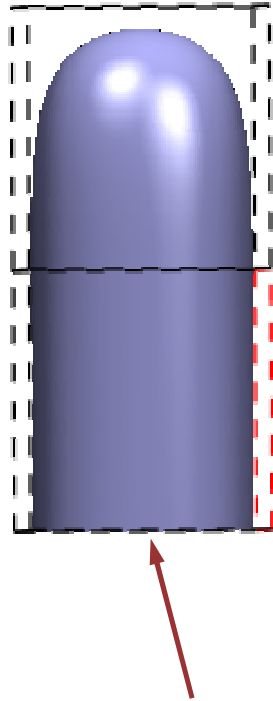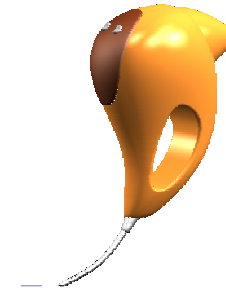
Do It Yourself (2/8)

- **Select the Front View.**
- **Select the Faces Cutting icon.**
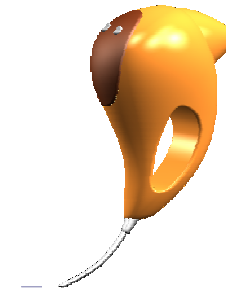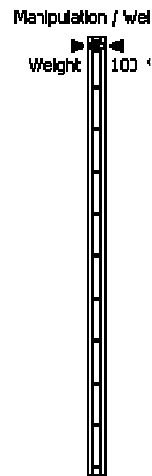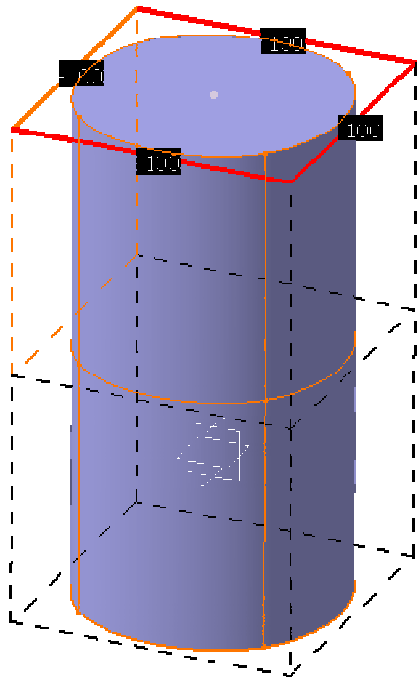- **Cut the vertical edge once.**

Do It Yourself (3/8)

- **Select the Erasing icon.**
- **Erase the face at the bottom of the surface.**

Do It Yourself (4/8)

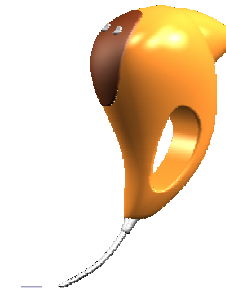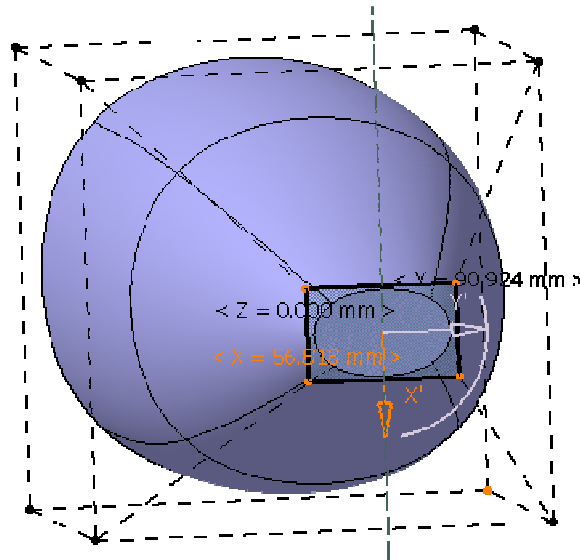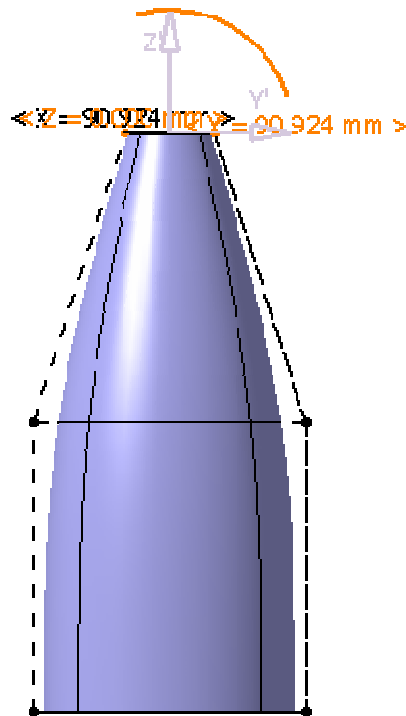- **Select the Attraction icon.**
- **Select the Face Selection icon (sharp edge option).**
- **Select the top face as shown.**
- **Move the pointer to value "100".**
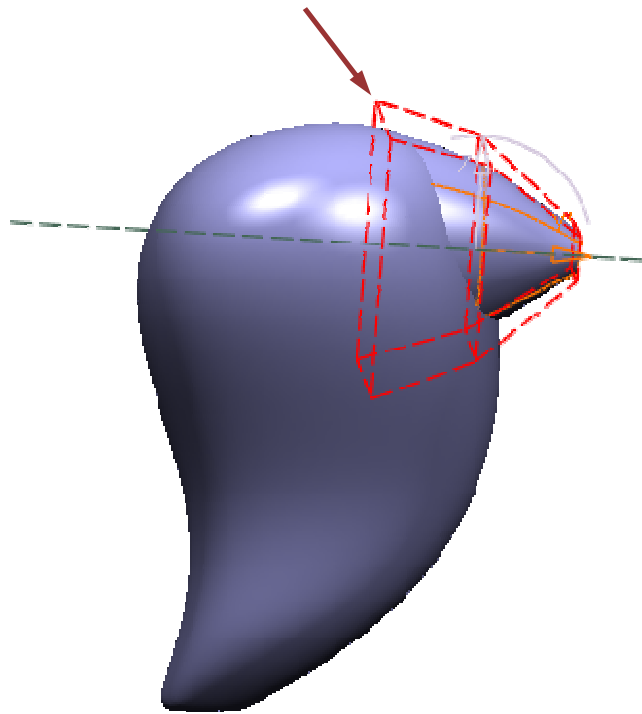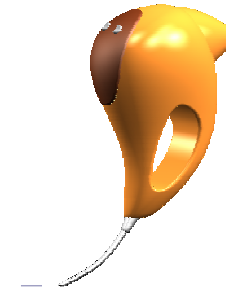
Manipulation / Wei

Weight   100

Do It Yourself (5/8)

- **Select the Vertex Selection icon.**
- **Press the Shift key and select the multiple vertices.**
- **Select the Affinity icon.**
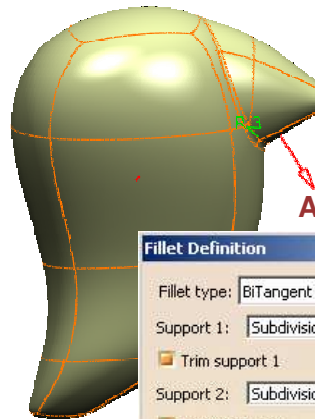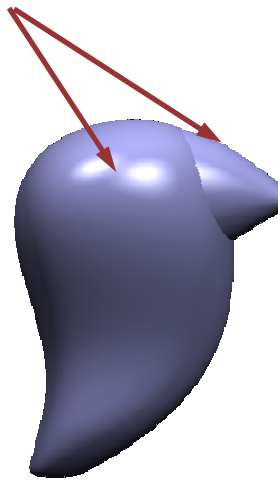- **Refine the shape.**

Do It Yourself (6/8)

- **Select the Vertex Selection icon.**
- **Press the Shift key and select the second subdivision surface.**
- **Move the surface to the right position using Translation and Rotation.**
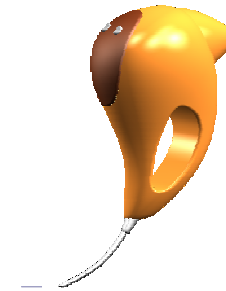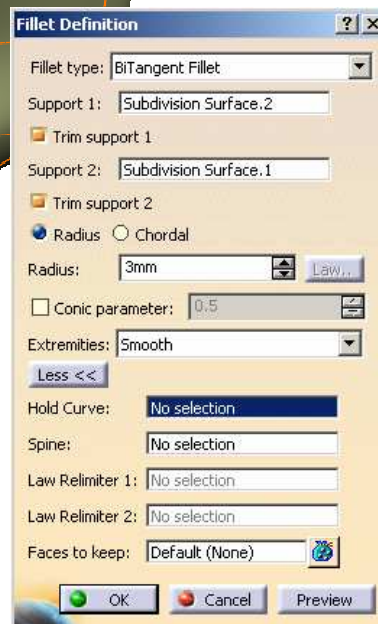
Do It Yourself (7/8)

- **Select the Shape Fillet icon.**
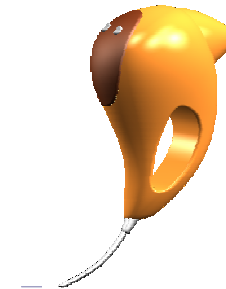- **Select the elements.**
- **Type the radius.**
- **Click OK.**

Arrows oriented outside.

Fillet Definition

Fillet type: BiTangent Fillet

Support 1: Subdivision Surface.2
Trim support 1

Support 2: Subdivision Surface.1
Trim support 2

Radius ○ Chordal

Radius: 3mm   Law..

Conic parameter: 0.5

Extremities: Smooth

Less <<

Hold Curve: No selection

Spine: No selection

Law Relimiter 1: No selection

Law Relimiter 2: No selection

Faces to keep: Default (None)

OK   Cancel   Preview

Do It Yourself (8/8)

- **Select the Edge Fillet icon.**
- **Select the face as shown.**
- **Type the radius.**
- **Click OK.**

Edge Fillet Definition

Support:	Fillet.1
Extremities:	Smooth
Radius:	1mm
Object(s) to fillet:	No selection
Propagation:	Tangency

Options

- ☐ Conic parameter: 0.5
- ☐ Trim ribbons
- ☐ Trim support

More>>

● OK   ● Cancel   Preview
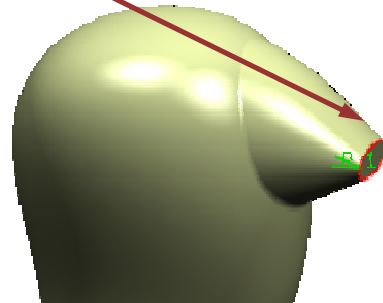
Hair Dryer

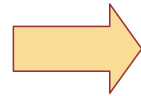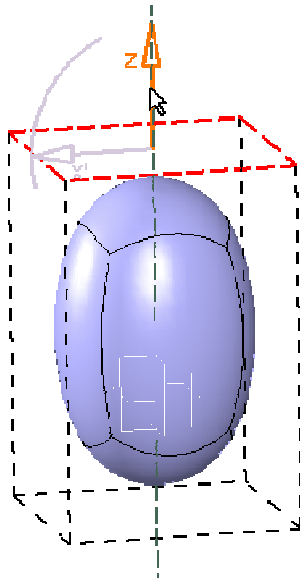## *Step 3 - Creating the Top Shape*

20 min

In this step you will create the Top Shape. For this you will start with a new closed surface and create a styled shape similar to the example shown. Then you will join it with the main body.
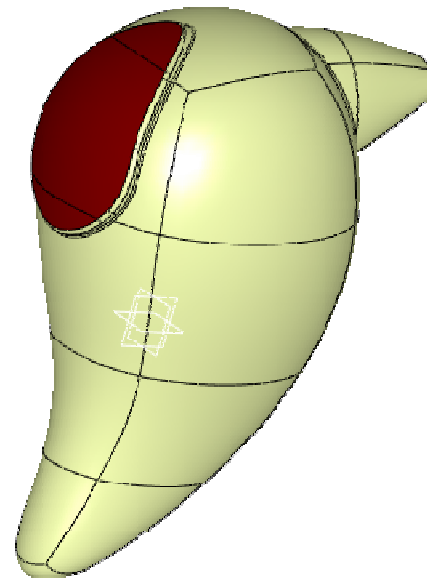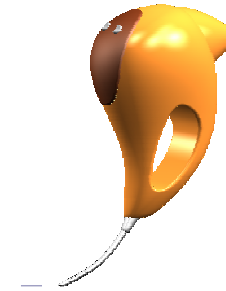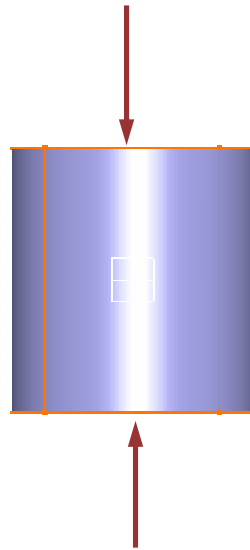
Do It Yourself (1/8)

🔹 **Create the Sphere.**

🔹 **Select the Face Selection icon.**

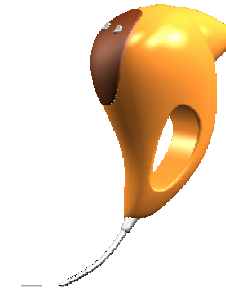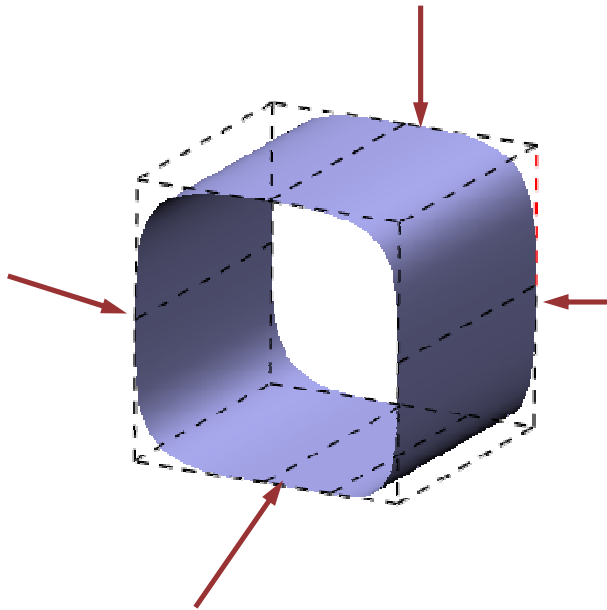🔹 **Select the top face and move the pointer upwards to extend the closed surface.**

Do It Yourself (2/8)

- **Select the Erasing icon.**
- **Cut the two faces as shown.**

Do It Yourself (3/8)

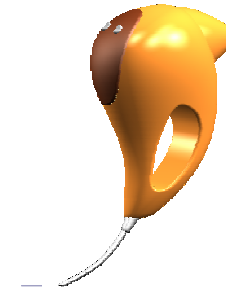- **Select the Face Cutting icon.**
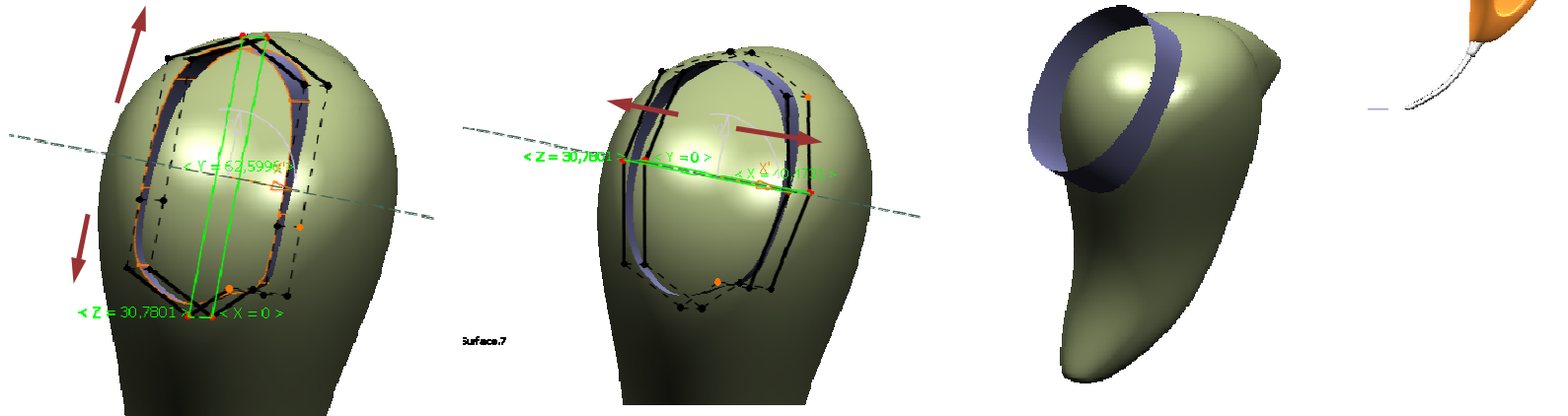- **Cut the four faces as shown.**

Do It Yourself (4/8)

- **Select all points.**
- **Select the Translation and Rotation icons.**
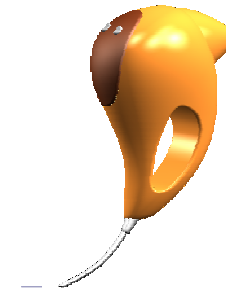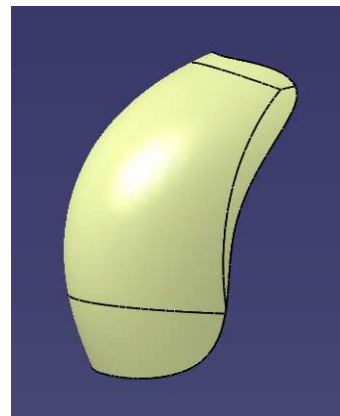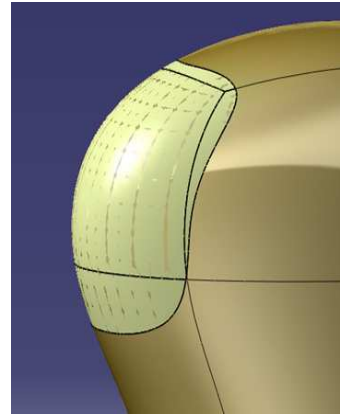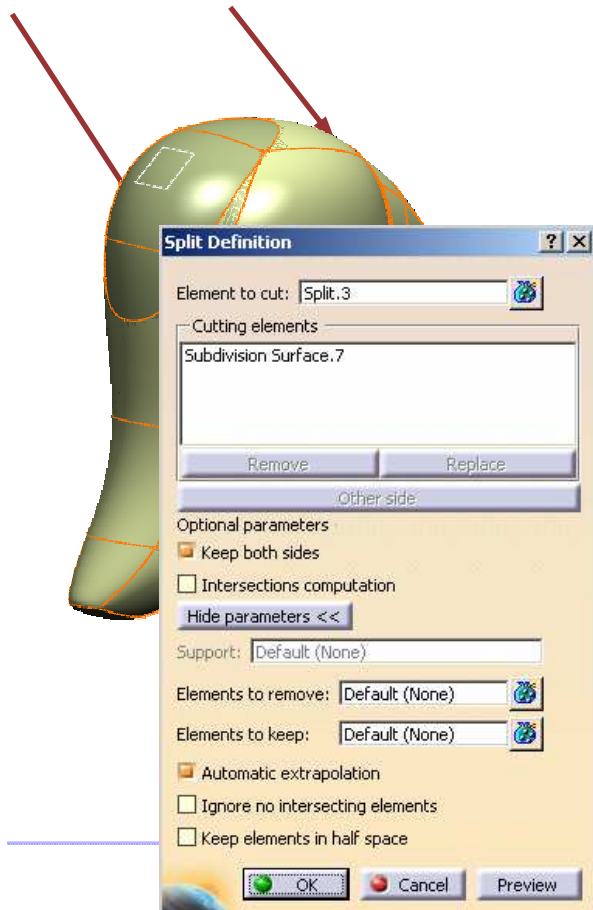- **Move the surface just created to the position shown.**

Do It Yourself (5/8)

- Select the Affinity icon.
- Press the Control key.
- Select opposite points.
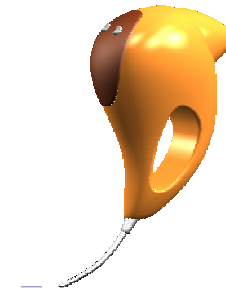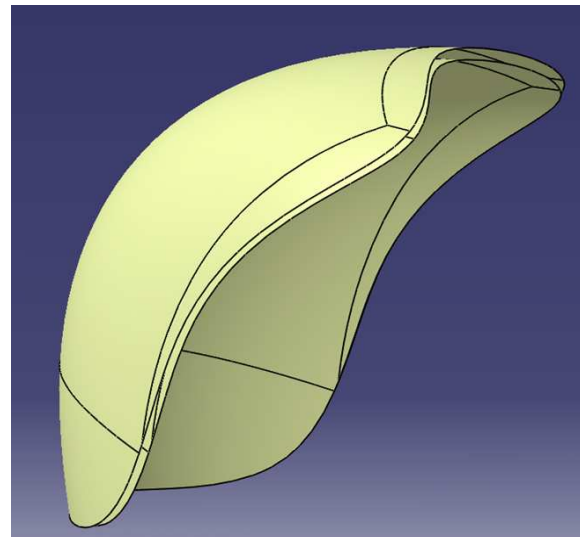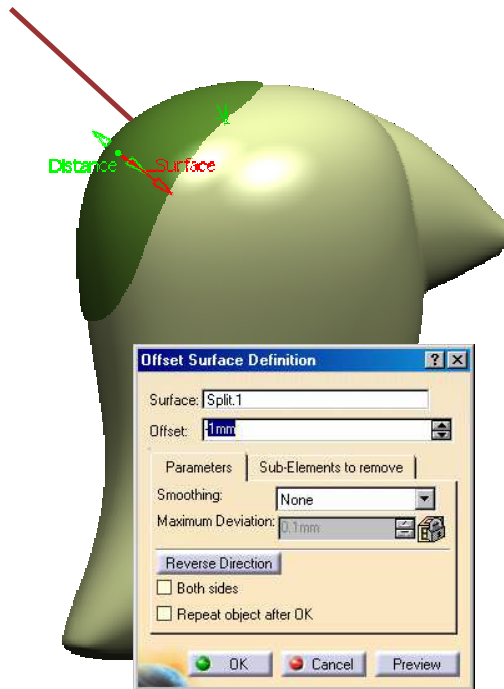- Move the compass to obtain the required shape as shown.

Do It Yourself (6/8)

- **Create a new geometrical set.**
- **Select the Split icon.**
- **Select two surfaces as shown.**
- **Click OK.**

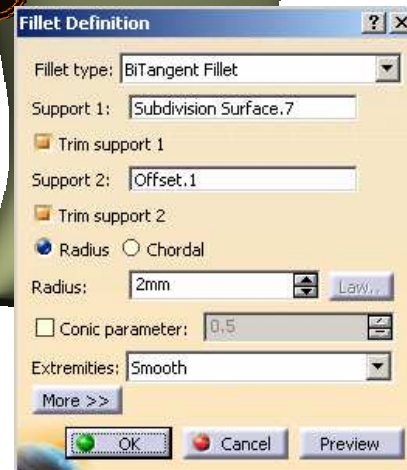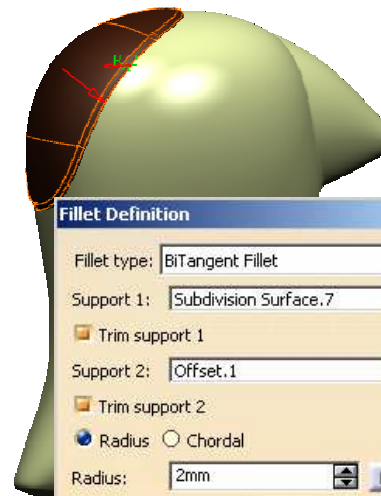**Split Definition**

Element to cut: Split.3

Cutting elements

Subdivision Surface.7

Remove | Replace

Other side

Optional parameters

☑ Keep both sides

☐ Intersections computation

Hide parameters <<

Support: Default (None)

Elements to remove: Default (None)

Elements to keep: Default (None)

☑ Automatic extrapolation

☐ Ignore no intersecting elements

☐ Keep elements in half space
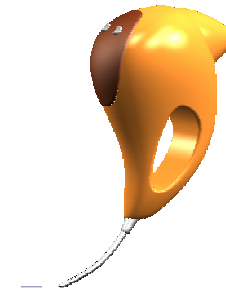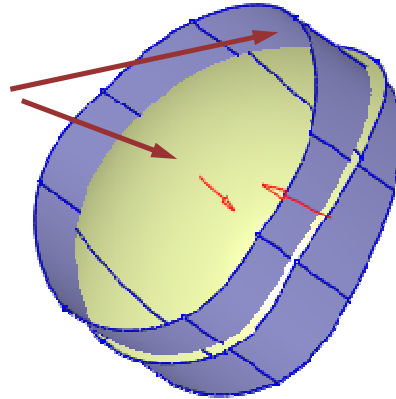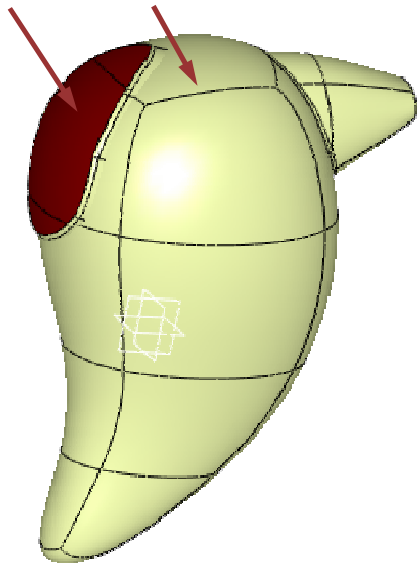
OK | Cancel | Preview

Do It Yourself (7/8)

- **Select the Offset icon.**
- **Select the surface.**
- **Type the offset value**

Do It Yourself (8/8)

- **Select the Shape Fillet icon.**
- **Select the offset surface and the subdivision surface just created.**
- **Type the radius. Click OK.**
- **Select the Shape Fillet icon.**
- **Select filleted and main body surface.**
- **Give the radius. Click OK.**

Fillet Definition

Fillet type: BiTangent Fillet

Support 1: Subdivision Surface.7

☐ Trim support 1

Support 2: Offset.1

☐ Trim support 2

● Radius ○ Chordal

Radius: 2mm

☐ Conic parameter: 0,5

Extremities: Smooth

More >>

OK   Cancel   Preview

Hair Dryer

Step 4 - Creating the Handle

15 min

In this step you will create the handle shape. For this you will start with a new closed surface and modify it. You will then trim the main body with the newly created surface.
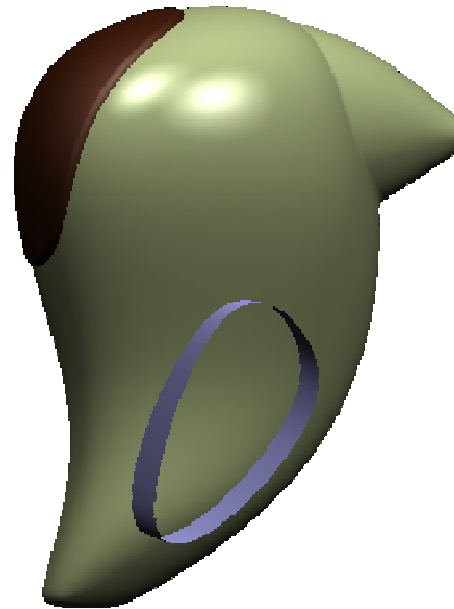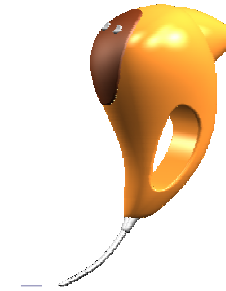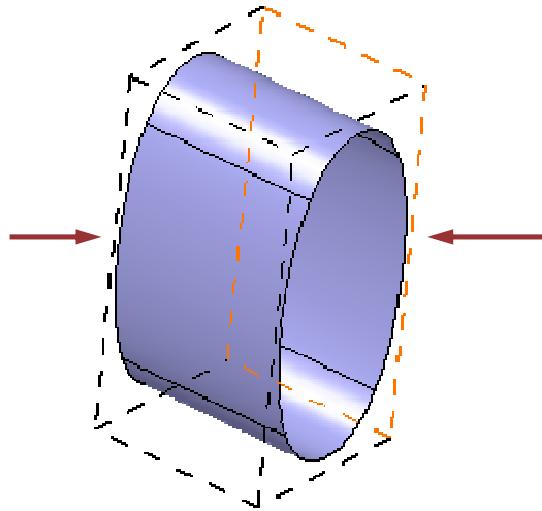
Do It Yourself (1/6)

- **Create the Sphere.**
- **Select the Face Selection icon.**
- **Select the top face and move the pointer upwards to extend the closed surface.**
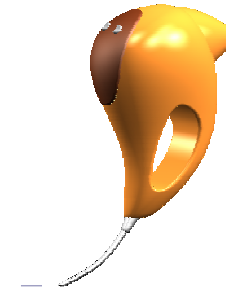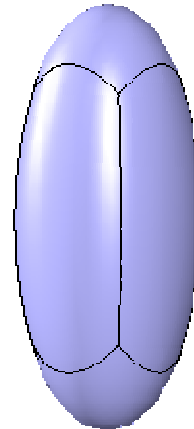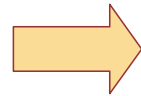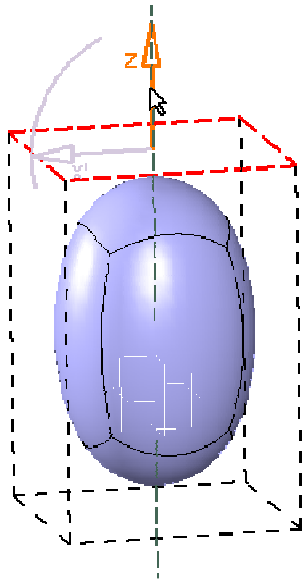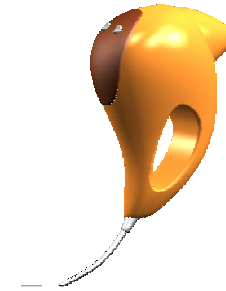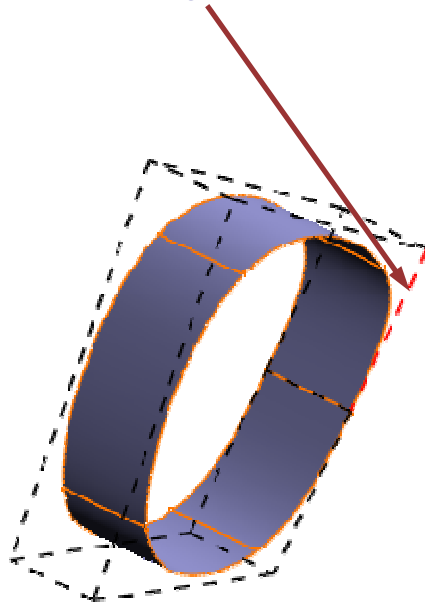
Do It Yourself (2/6)

- **Select the Face Erasing icon.**
- **Erase the two faces as shown.**

Do It Yourself (3/6)

- **Select the Face Cutting icon.**
- **Cut along the vertical edge.**

Do It Yourself (4/6)

- **Select the Edge Selection icon.**
- **Press the Shift key and select edge as shown as one goes along.**
- **Select the Translation icon.**
- **Find the good style.**
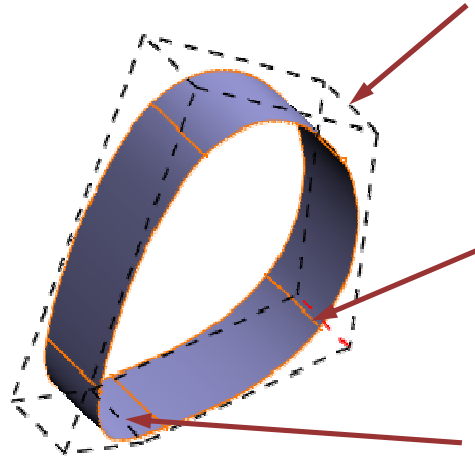
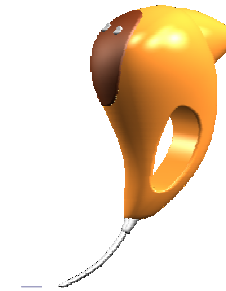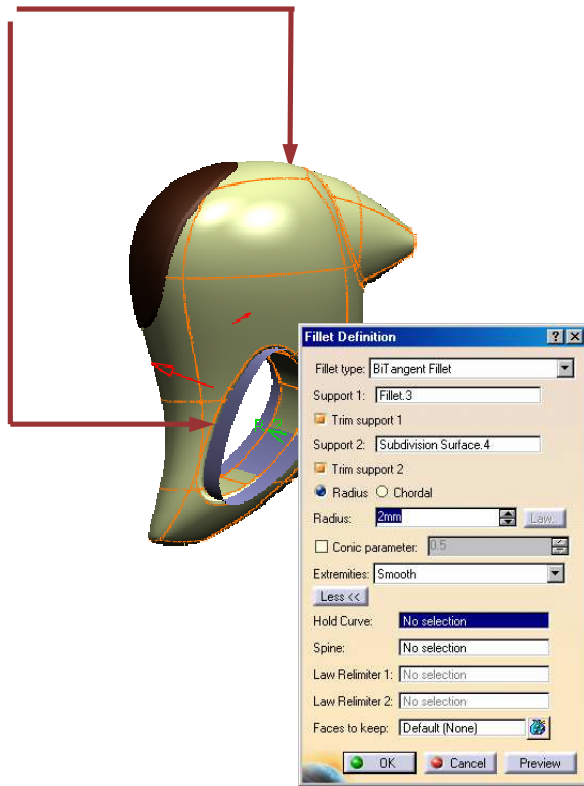# Do It Yourself (5/6)

- **Select the Vertex Selection icon.**
- **Press the Shift key and select all points.**
- **Select the Translation and Rotation icons.**
- **Move up as shown.**
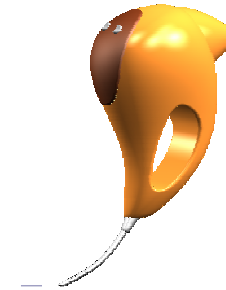
Do It Yourself (6/6)

- **Select the Shape Fillet icon.**
- **Select the surfaces.**
- **Type the radius.**
- **Click OK.**

Hair Dryer

Step 5 – Creating the Buttons

15 min

In this step you will create two buttons on the top shape. For this you will deform a closed surface to get the required size and shape, and then you will move the buttons to the right position.
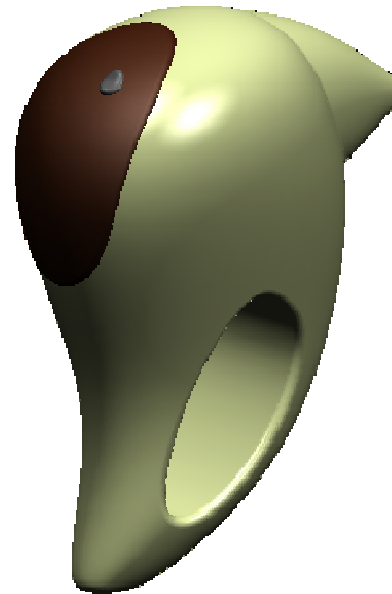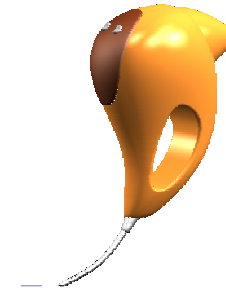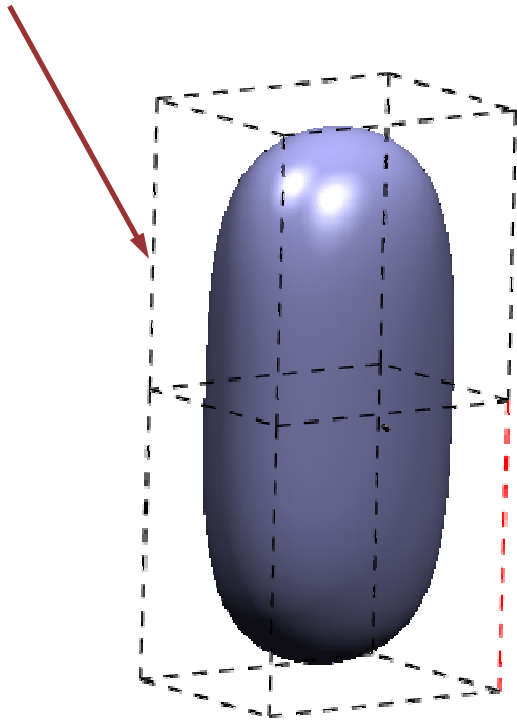
Do It Yourself (1/4)

- **Create the Sphere.**
- **Select the Face Selection icon.**
- **Select the top face and move the pointer upwards to extend the closed surface.**
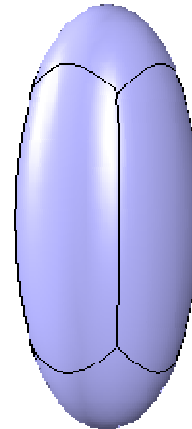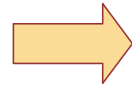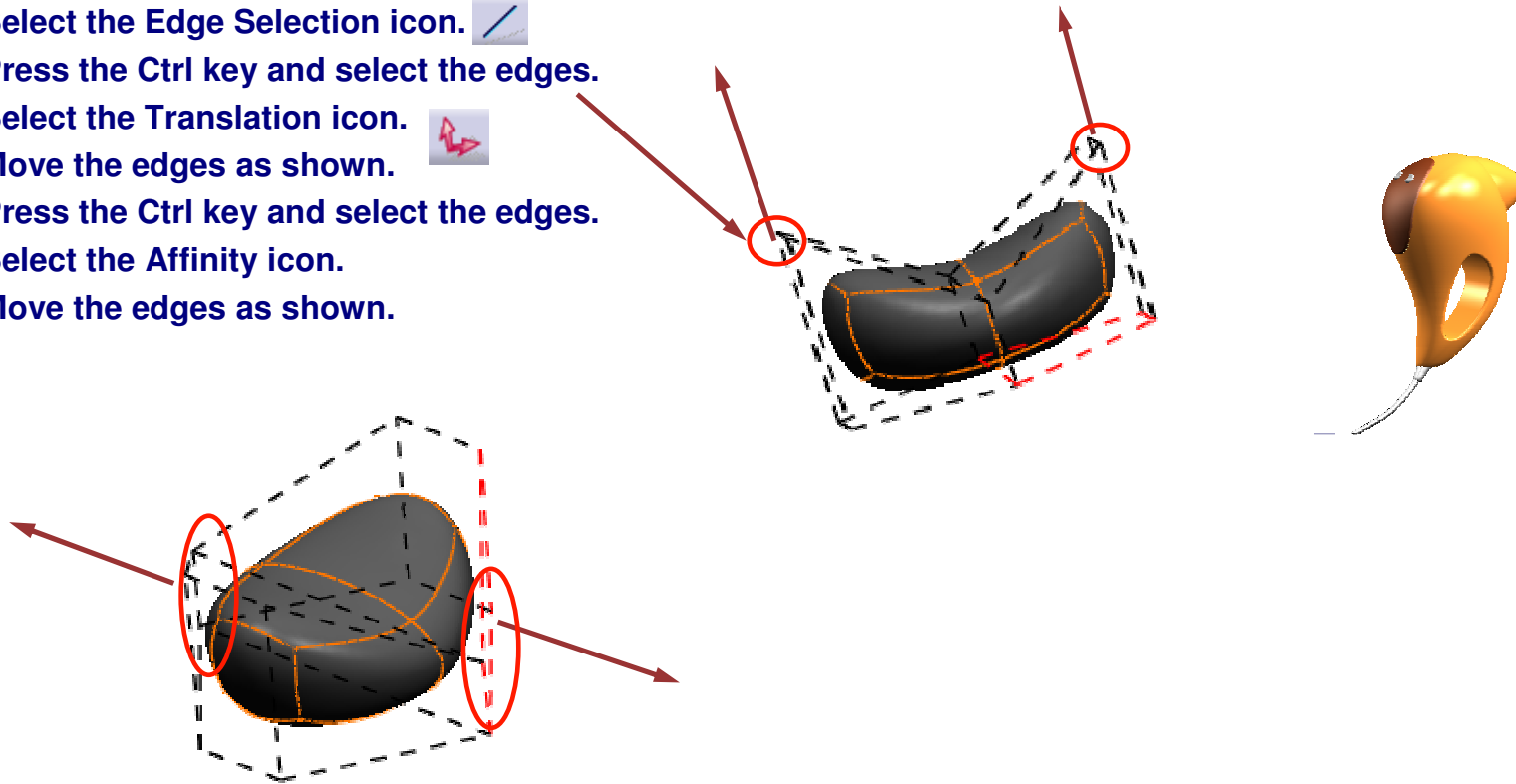
Do It Yourself (2/4)

- **Select the Face Cutting icon.**
- **Cut along the vertical edge.**

Do It Yourself (3/4)

- **Select the Edge Selection icon.**
- **Press the Ctrl key and select the edges.**
- **Select the Translation icon.**
- **Move the edges as shown.**
- **Press the Ctrl key and select the edges.**
- **Select the Affinity icon.**
- **Move the edges as shown.**

Do It Yourself (4/4)

- **Select the Vertex Selection icon.**
- **Press the Shift key and select all points.**
- **Select the Translation and Rotation icons.**
- **Move the button as shown.**
- **Create the second Button.**
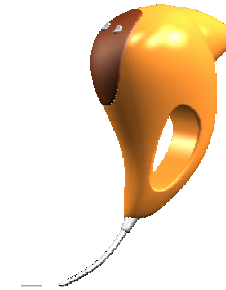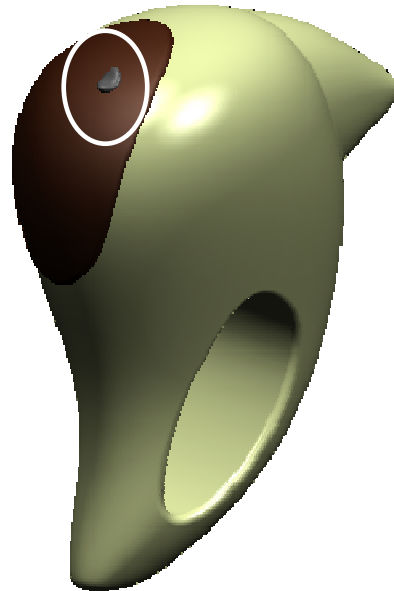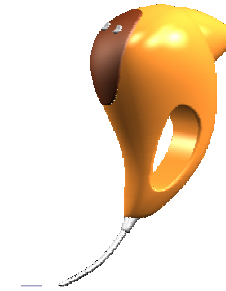
Hair Dryer

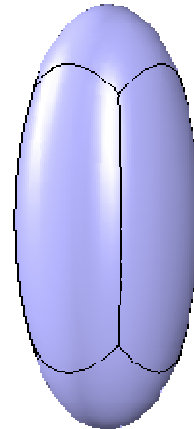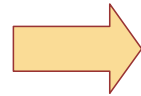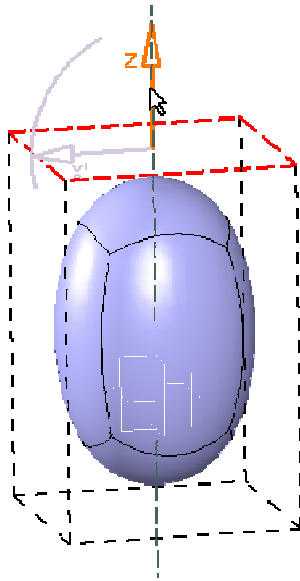## Step 6 – Creating the Wire

15 min

In this step, you will create the shape of the wire. Try to get a style for the wire close to the one shown in the example.
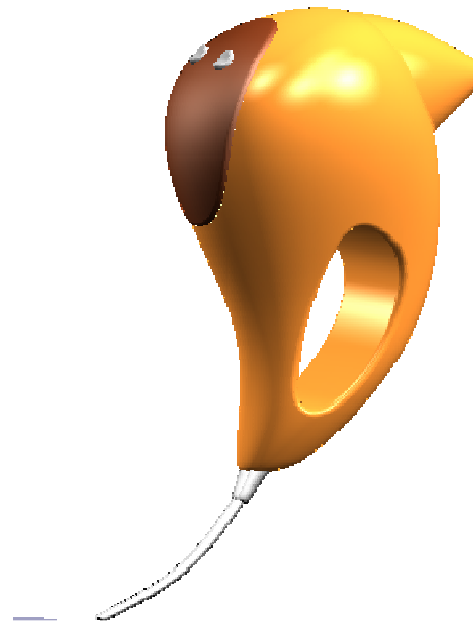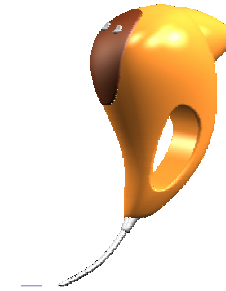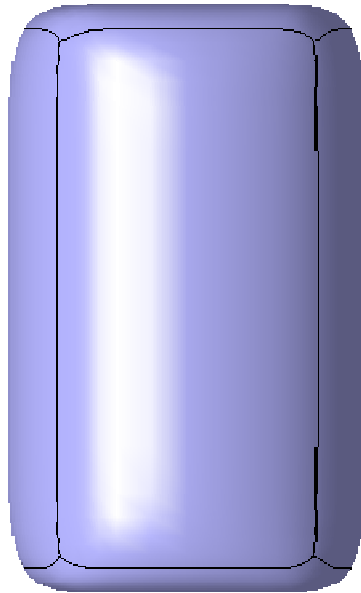
Do It Yourself (1/6)

- **Create the Sphere.**
- **Select the Face Selection icon.**
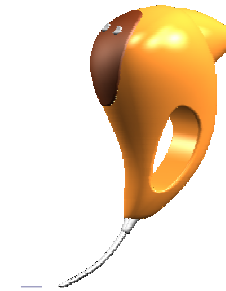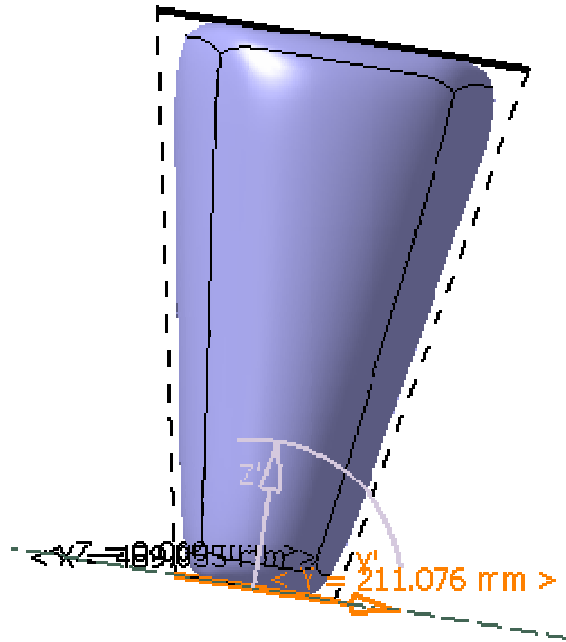- **Select the top face and move the pointer upwards to extend the closed surface.**

Do It Yourself (2/6)

- **Select the top and bottom face.**
- **Select the Attraction icon (smooth option).**
- **Set the value to "100".**

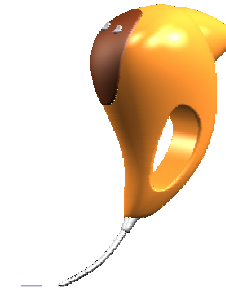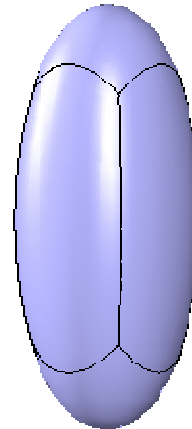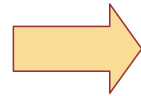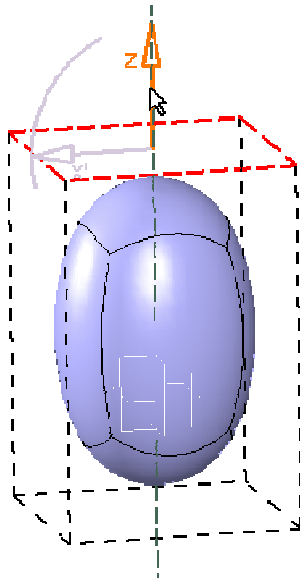# Do It Yourself (3/6)

- Select the Affinity icon.
- Press the Ctrl key.
- Select the points at the bottom of the surface.
- Move the compass as shown.
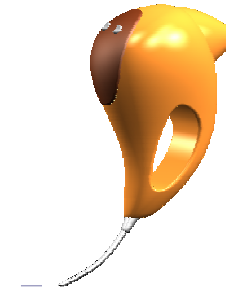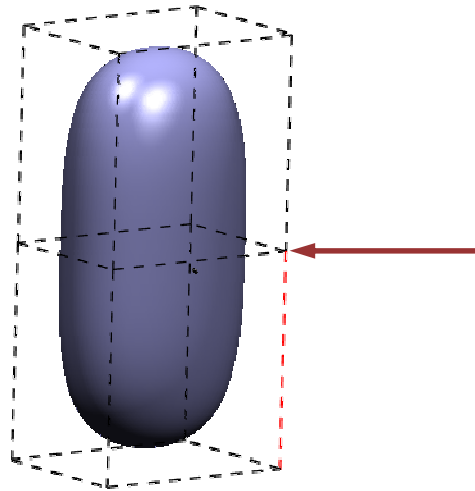
< Y = 211.076 mm >

Do It Yourself (4/6)

🔹 **Create the Sphere.**

🔹 **Select the Face Selection icon.**

🔹 **Select the top face and move the pointer upwards to extend the closed surface.**

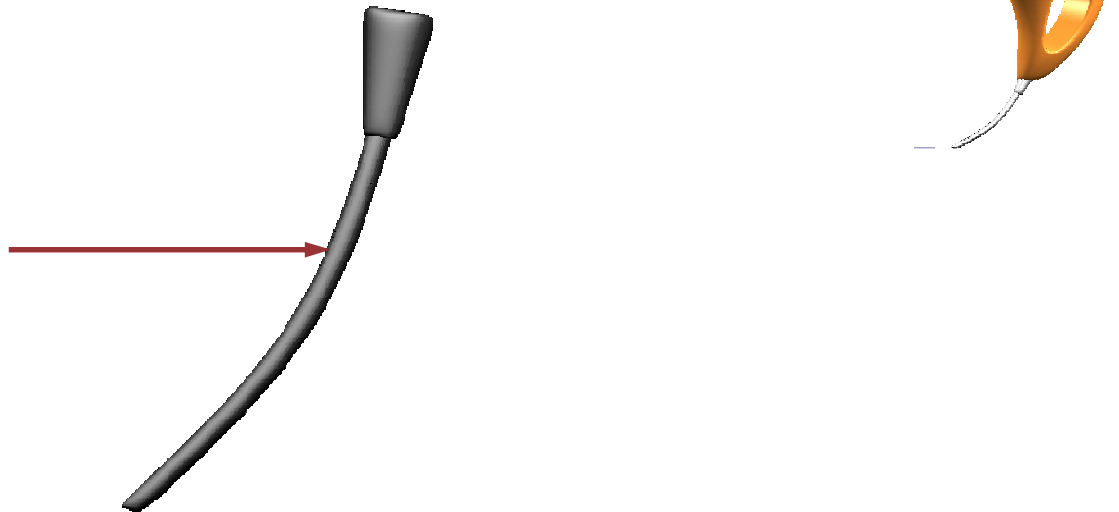# Do It Yourself (5/6)

- **Select the Face Cutting icon.**
- **Cut once.**

Do It Yourself (6/6)

- **Select the Vertex Selection icon.**
- **Press the Shift key and select all points.**
- **Select the Translation and Affinity icons.**
- **Refine the shape.**

Added Exercise 2: Video Projector

You will complete the exercise by performing following steps.

- **Added Exercise Presentation: Video Projector**
- **Added Exercise Step (1): Creating the Main Shape**
- **Added Exercise Step (2): Creating the First Part of the Lens**
- **Added Exercise Step (3): Creating the Second Part of the Lens**
- **Added Exercise Step (4): Creating the Button**
- **Added Exercise Step (5): Splitting the Shape**
- **Added Exercise Step (6): Finishing the Video Projector**
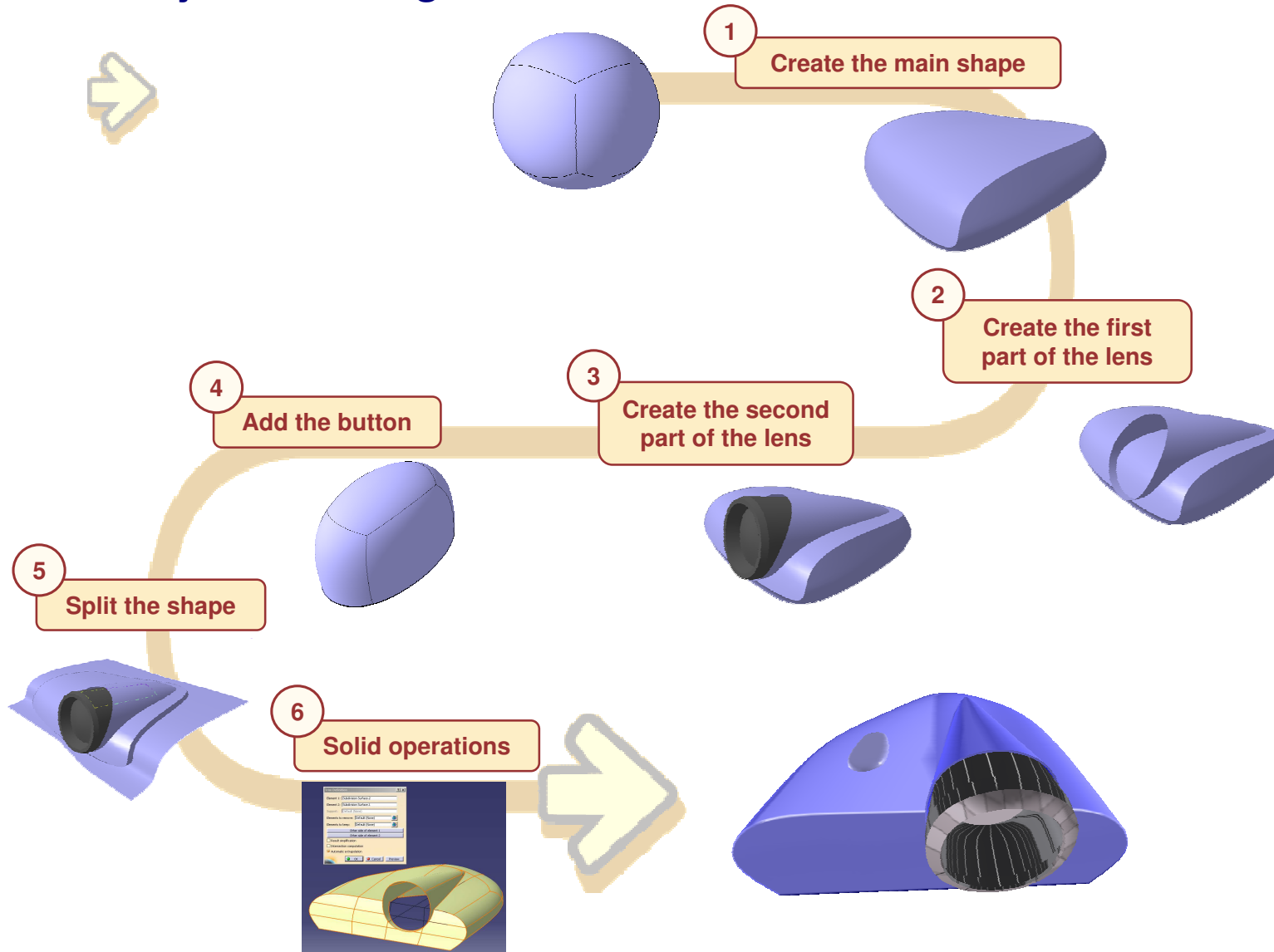
Video Projector

Added Exercise Presentation

80 min

In this exercise you will design the style surfaces for a Video Projector.
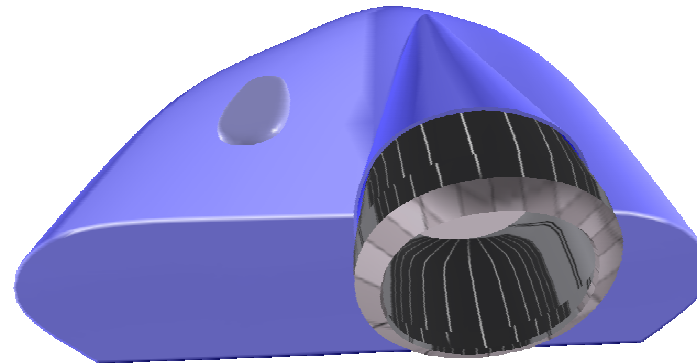
Video Projector - Design Process

1 Create the main shape

2 Create the first part of the lens

3 Create the second part of the lens

4 Add the button

5 Split the shape

6 Solid operations

Video Projector

Step 1 - Creating the Main Shape

15 min

In this step you will create the main shape of the Video Projector. The shape obtained will not be exactly the same but try to get a style near to the one shown in example.
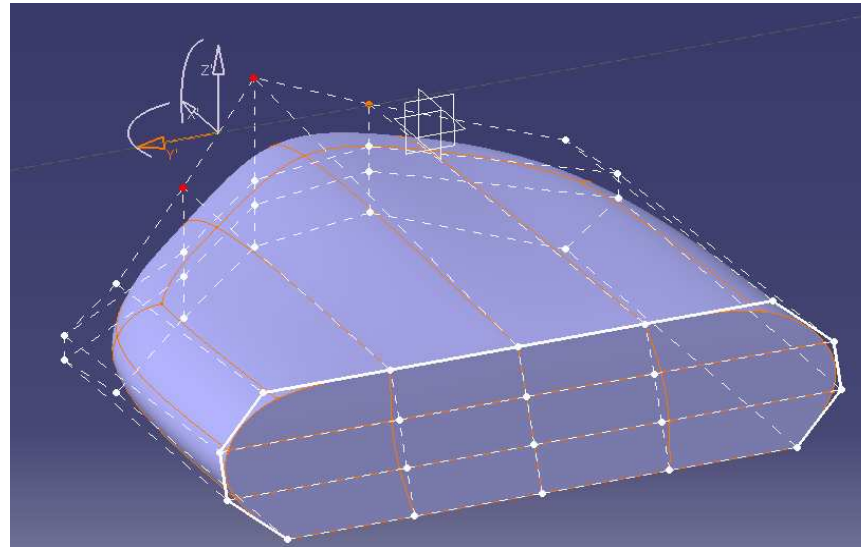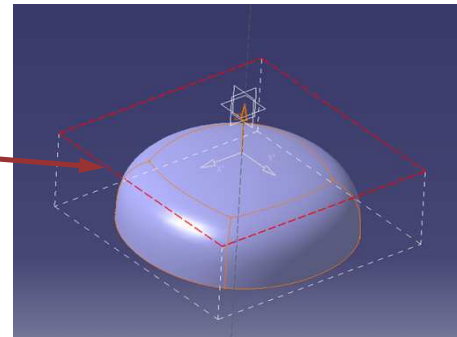
Do It Yourself (1/8)

- **Create the first closed surface**
- **Click the Affinity icon**
- **Click the Data Definition icon**
- **Key 200, 200, 200**
- **Erase the bottom face**

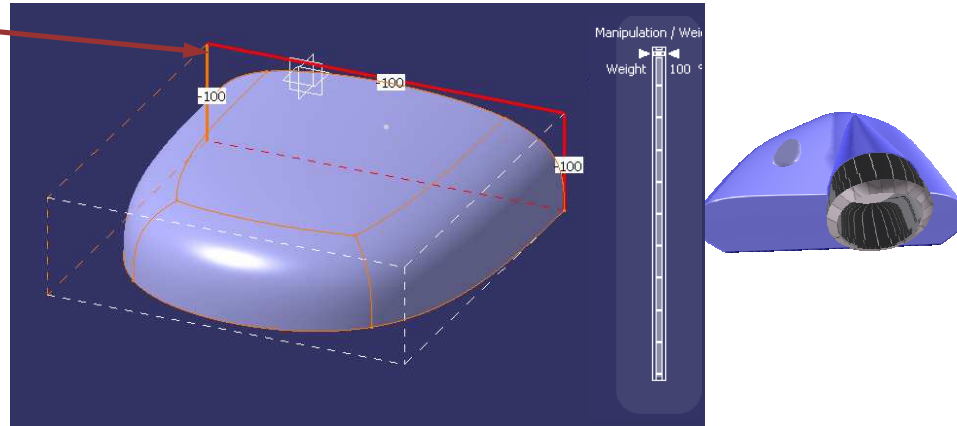**Affinity**

Fx = 200mm
Fy = 200mm
Fz = 200mm

OK   Cancel
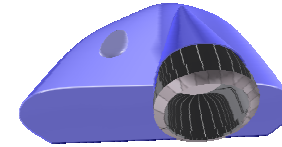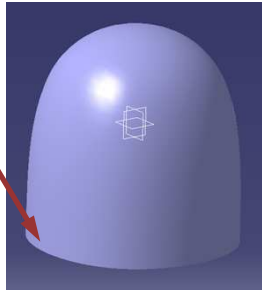
- **Select the top face**
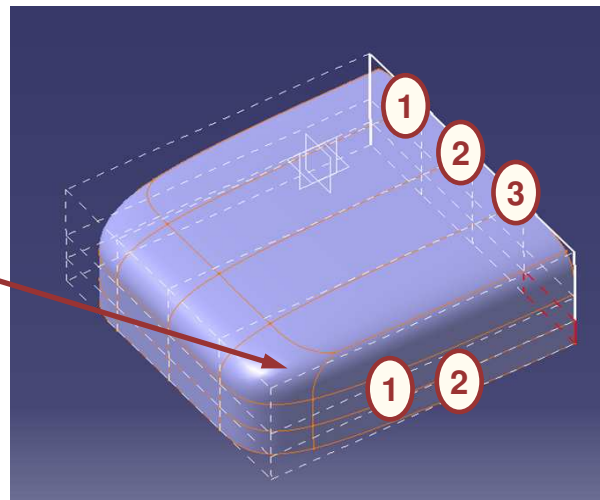- **Select the Translation icon**
- **Reduce the size of the Subdivision Surface as shown**

Do It Yourself (2/8)

- Select the back face
- Select the Attraction icon
- Select the sharp edge option
- Drag the pointer to 100

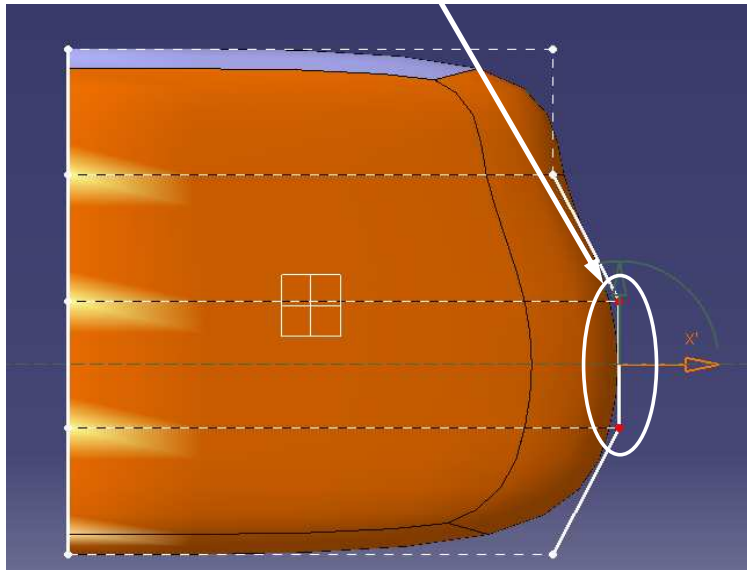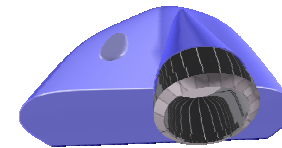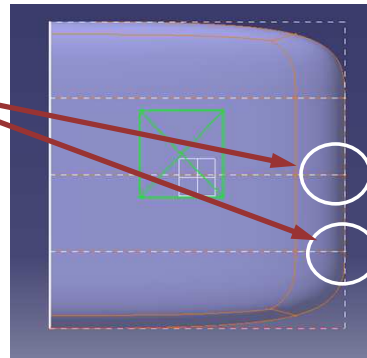- Select the Face Cutting icon
- Create three cuts on the top surface.
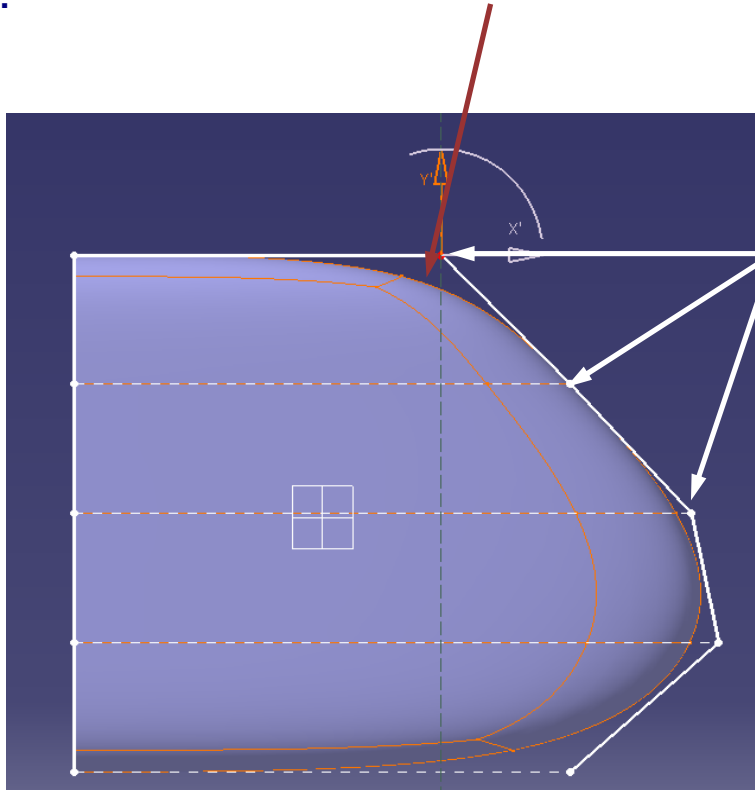- Create two cuts on the lateral surface.

Do It Yourself (3/8)

- **Press F4 key and select the top face**
- **Select 8 points (Shift-Trap)**
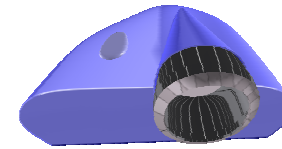- **Select the Translation icon**
- **Move the 8 points as shown**

Do It Yourself (4/8)

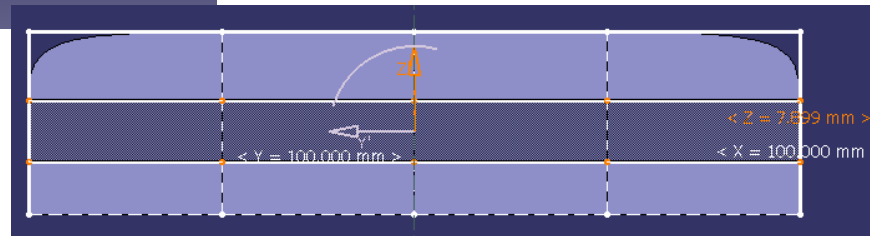**Using the Translation icon on the other points, refine the shape as shown.**
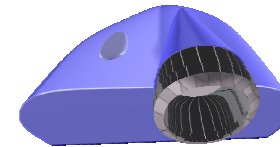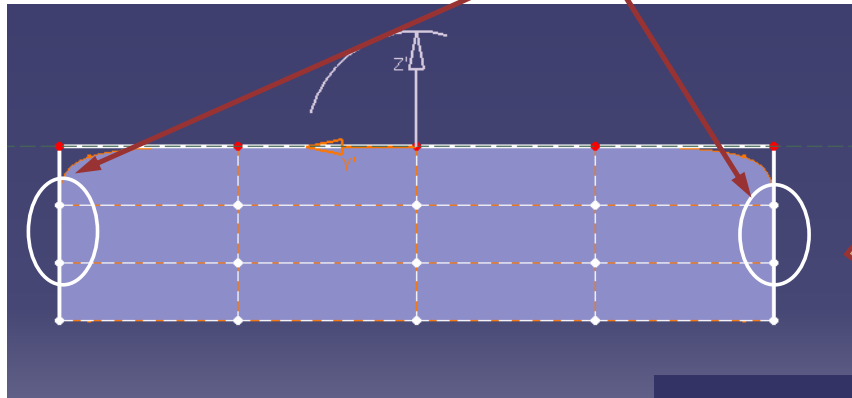
Tips:
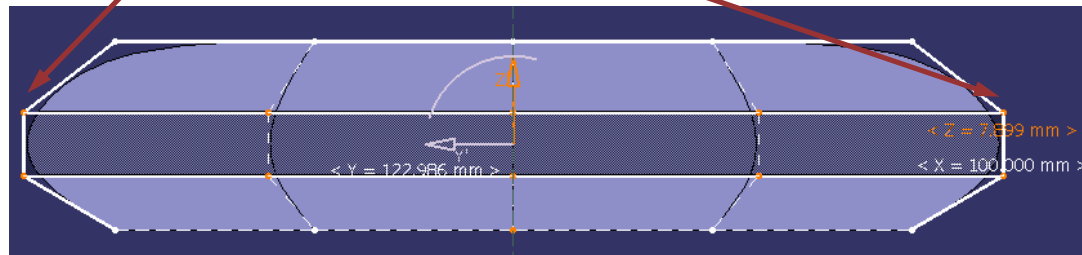
You can align the points by projecting the points onto a plane.

Do It Yourself (5/8)

- **Using Shift-trap and Ctrl select 8 points**
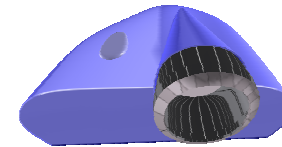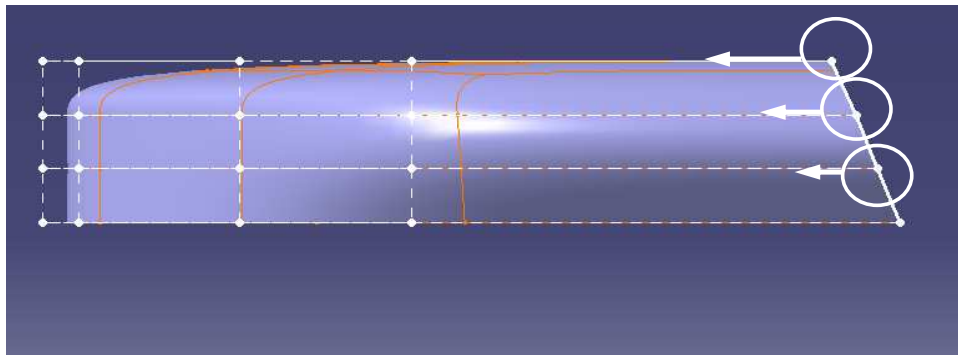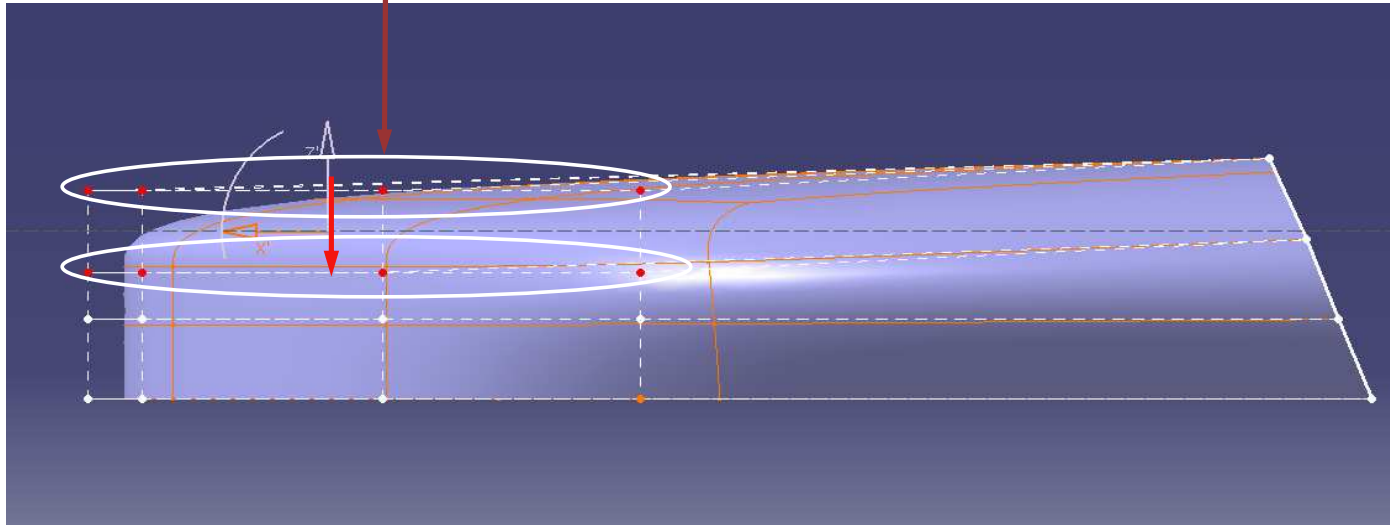- **Select the Affinity icon**

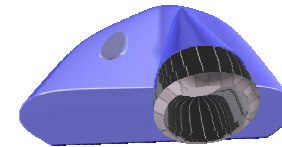- **Refine the shape as shown**

Do It Yourself (6/8)

- **Press F4 and select the lateral View**
- **Using Shift-trap select the points shown and refine the shape as shown using the Translation function**
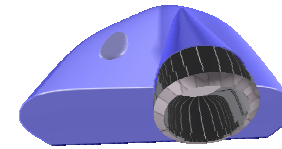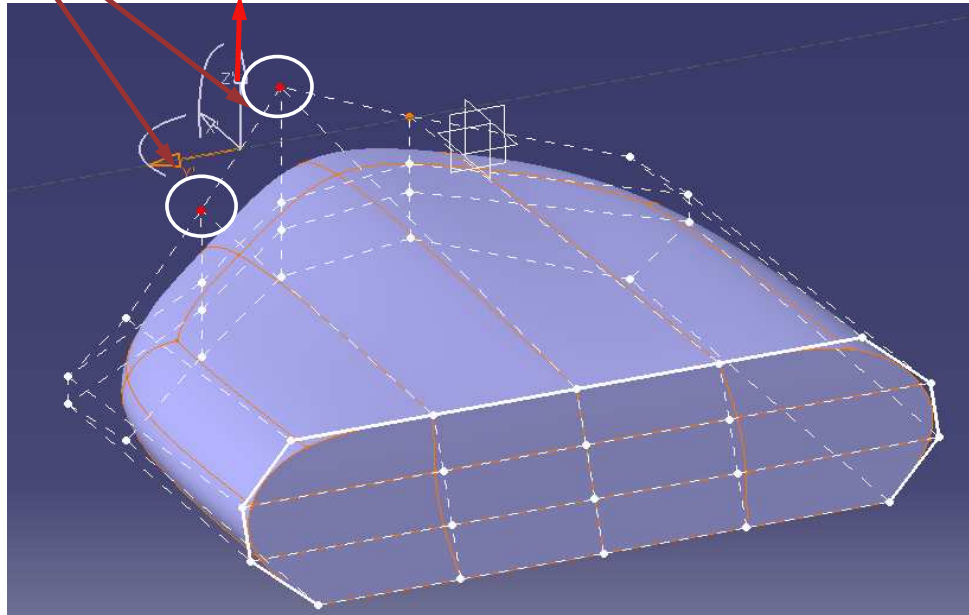
Do It Yourself (7/8)

Using Shift-trap select the points and refine the shape as shown using Translation function.

Do It Yourself (8/8)

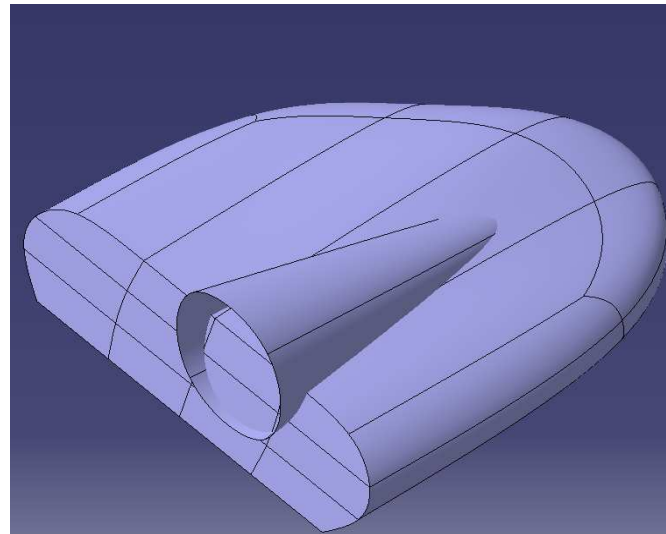**Using Shift-trap select 2 points and refine the shape as shown using the Translation function.**

Video Projector

Step 2 - Creating the First Part of the Lens

10 min

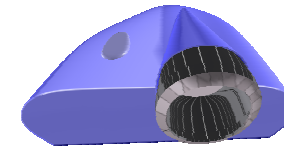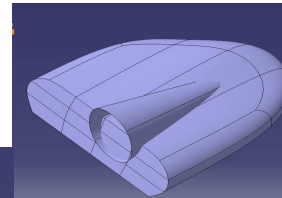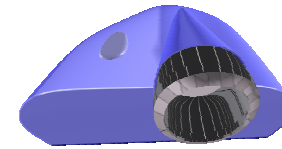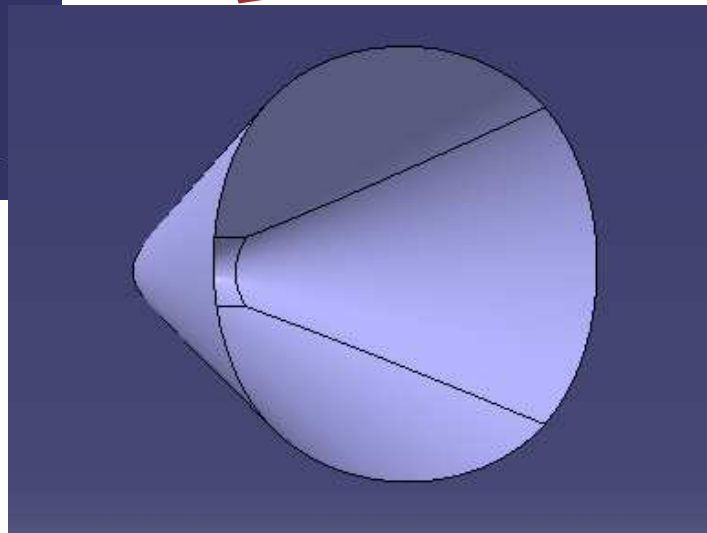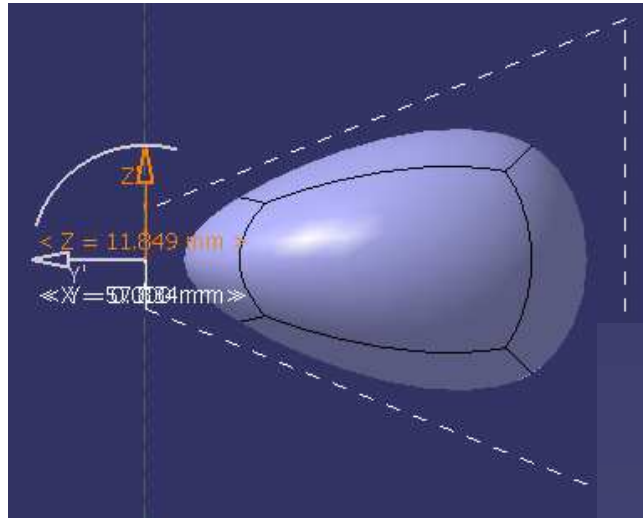**In this step, you will create the main shape of the lens.**

Do It Yourself (1/3)

- **Press F4 key and select the lateral view.**
- **Add a new closed surface.** 🔵
- **Select the back face and the Affinity ic** 🔴
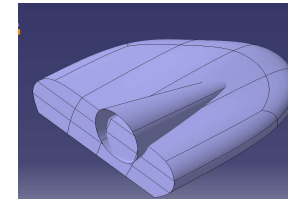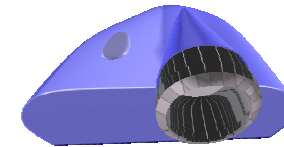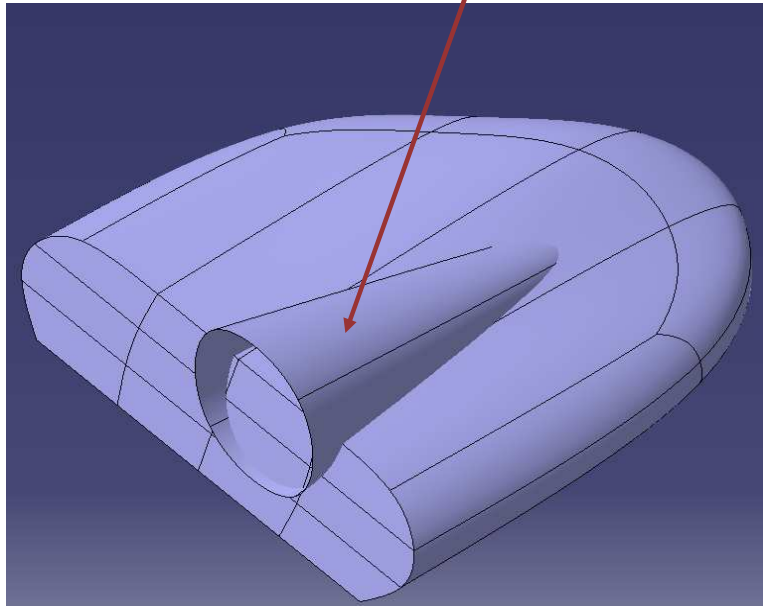- **Create a cone with this closed surface.**
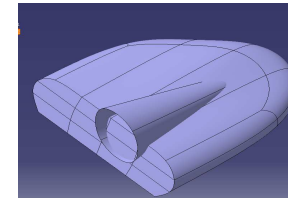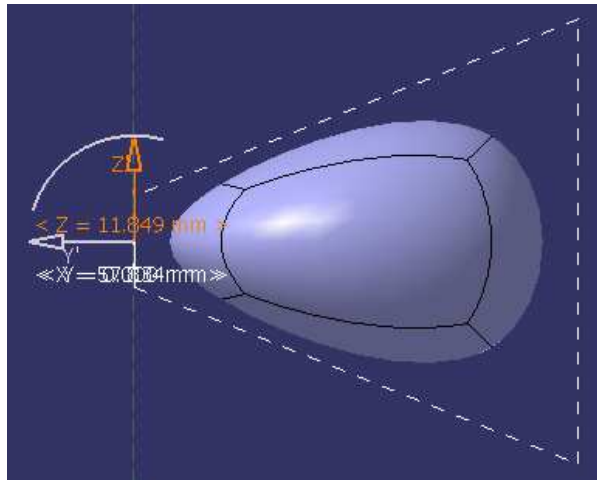
Do It Yourself (2/3)

- **Erase the front face.**
- **Refine the shape with Translation and Affinity**

Do It Yourself (3/3)

- **Using the Translation icon and by selecting the entire subdivision surface drag the cone on its correct position as shown.**
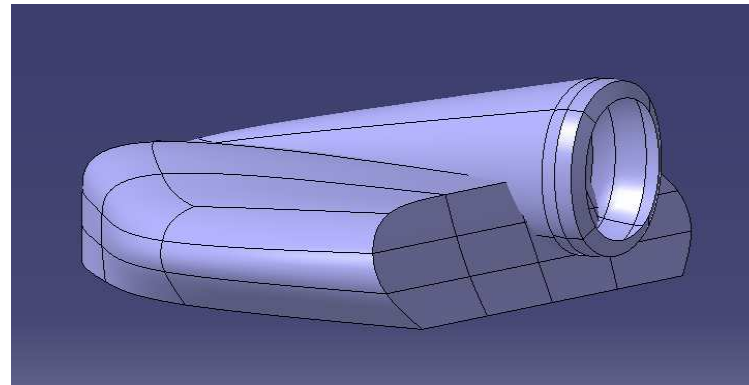

- **Using the Affinity icon refine it to get to the correct size.**

Video Projector

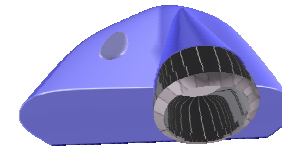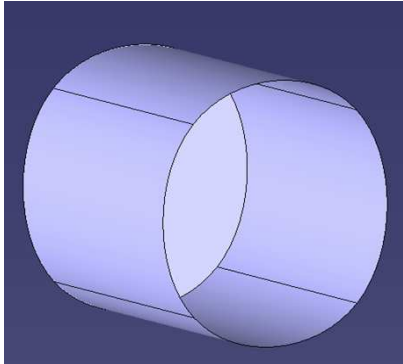## Step 3 - Creating the Second Part of Lens

15 min

In this step, you will create the front portion of the lens. The shape obtained will not be exactly the same but try to get the style close to the example shown.
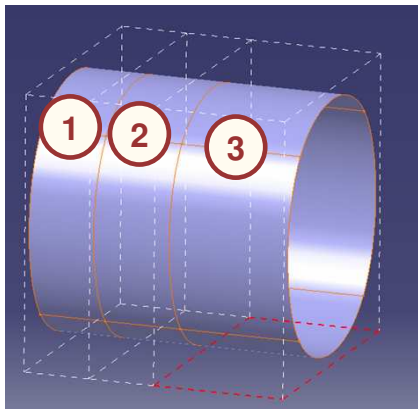
Do It Yourself (1/4)

- **Add a new closed surface.**
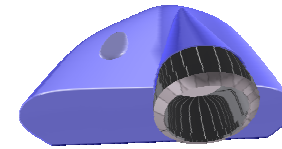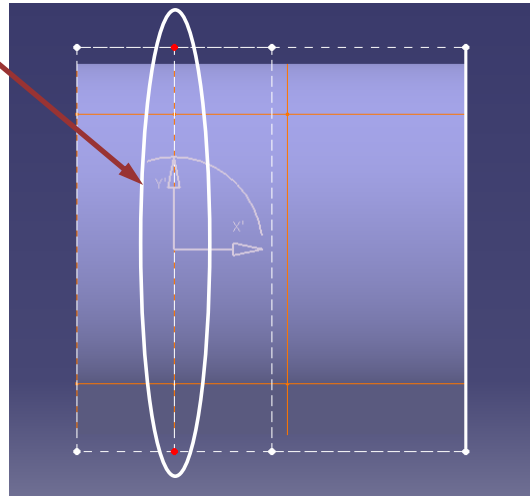- **Create a cylinder.**
- **Erase the front face of the cylinder.**
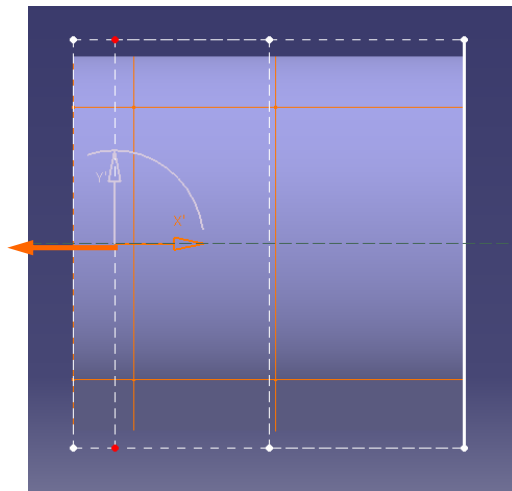
- **Cut the cylinder into three parts.**

1 2 3

Do It Yourself (2/4)

- **With Shift-trap select the points.**
- **Select the Translation icon.**

Front

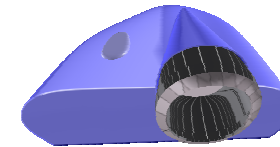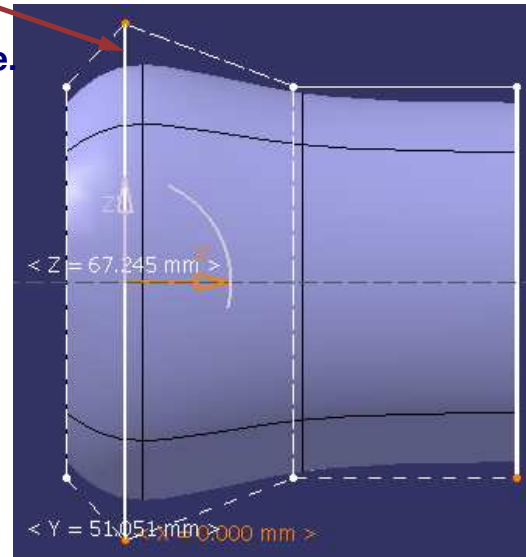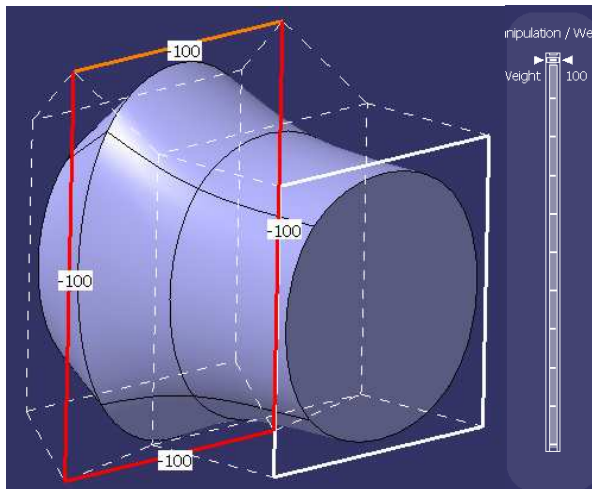**Back**

Move the compass as shown

Do It Yourself (3/4)

- **Select the Affinity icon.**
- **Select the four edges of the face, use edge selection and Propagation icon.**
- **Press Ctrl key.**
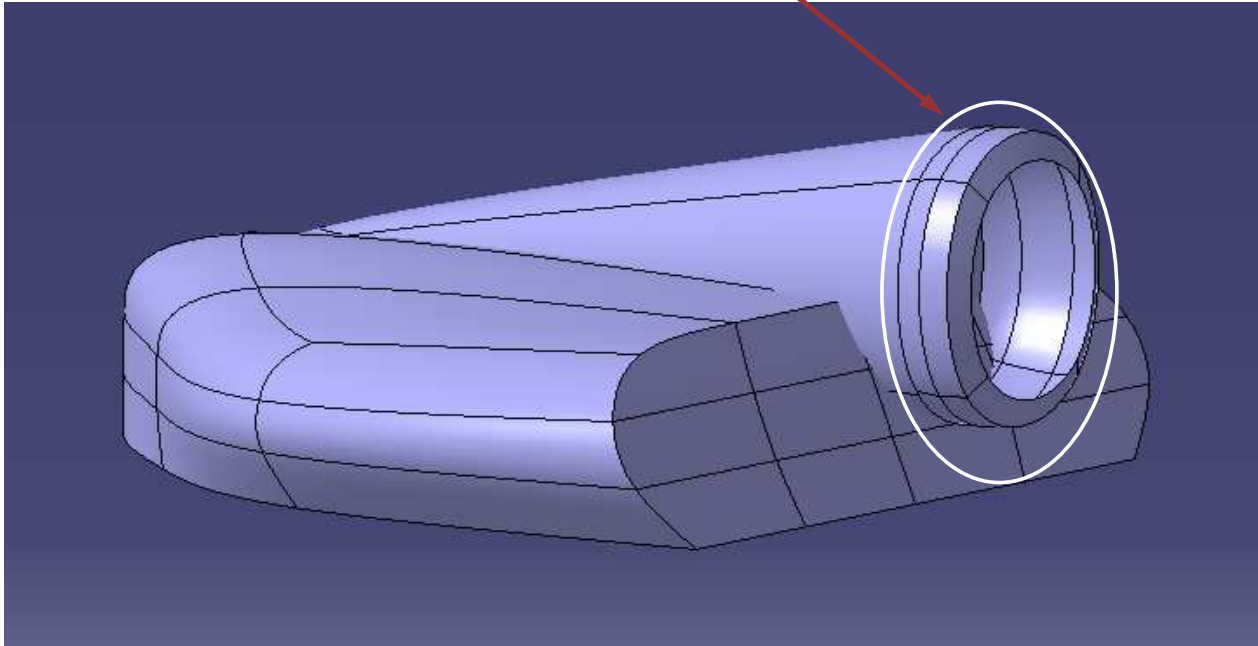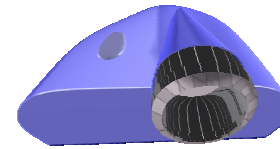- **Drag the pointer to increase the size of the face.**

< Z = 67.245 mm >

< Y = 51.051 mm 0.000 mm >

- **Select the Attraction icon and set the value to 100.**

Manipulation / Weig

Weight   100

-100

-100

-100

-100

Do It Yourself (4/4)

Using the Translation and Rotation icons move the lens to the correct position.

Video Projector

Step 4 – Creating the Button

🕐 *10 min*

In this step you will create the shape of the button.
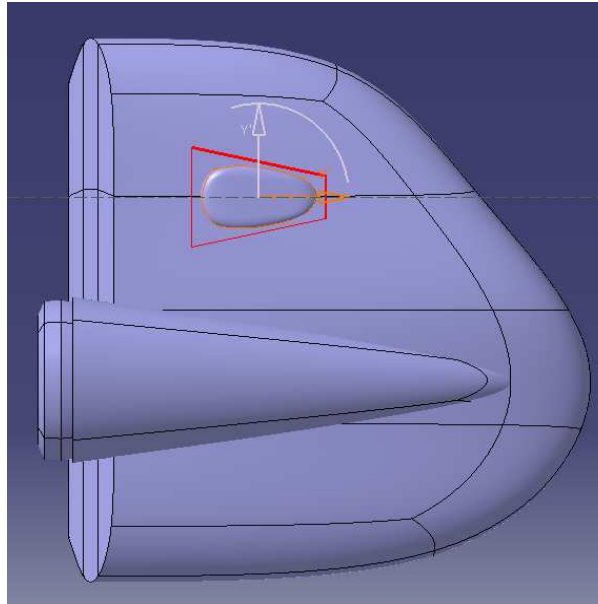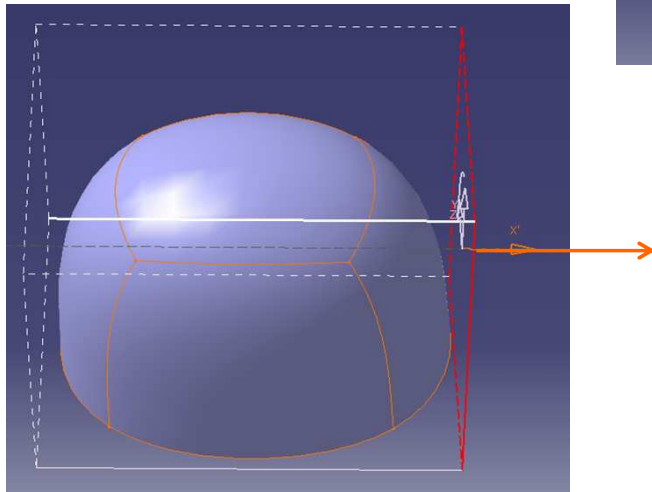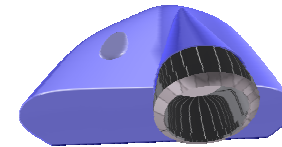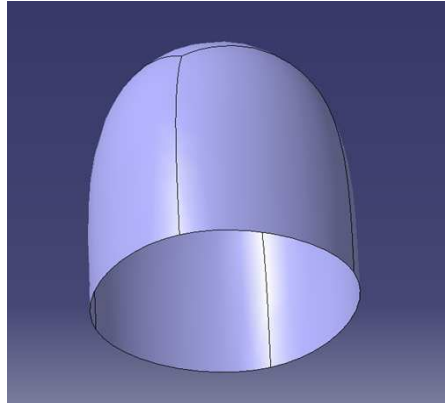
Do It Yourself (1/3)

- Add a new closed surface.
- Erase the bottom face.
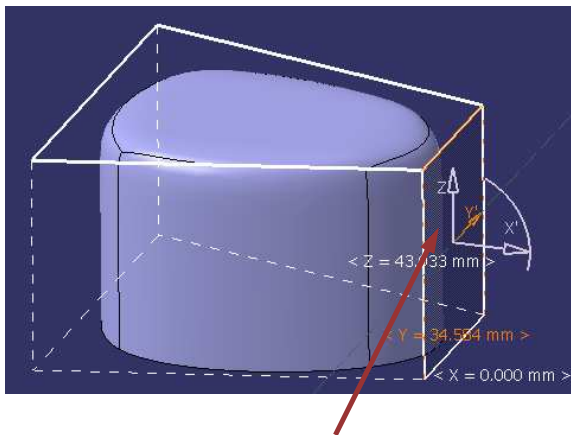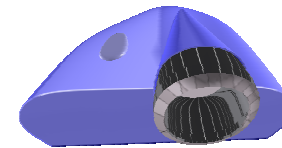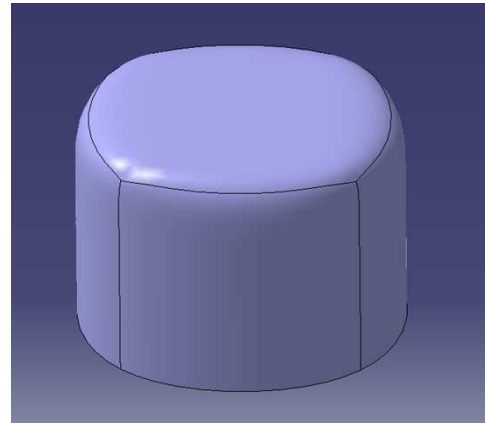
- Select a lateral face and the Translation icon.
- Move the face to create a shape as shown.
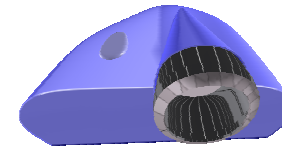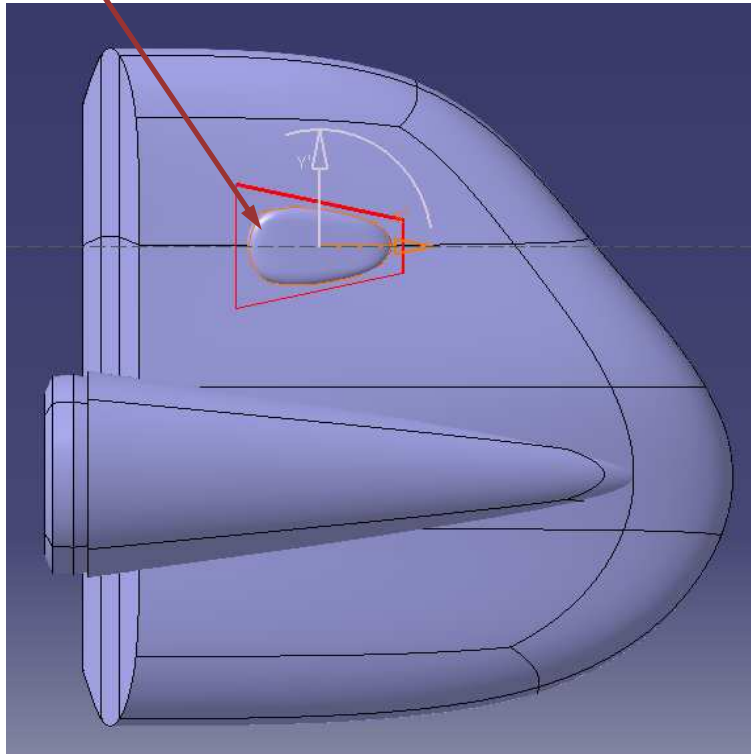
Do It Yourself (2/3)

- **Select the top face.**
- **Select the Attraction icon with the Smooth Attraction option.**
- **Set the value to "100".**

- **Select the back face and the Affinity icon.**
- **Refine the shape as shown.**

Do It Yourself (3/3)

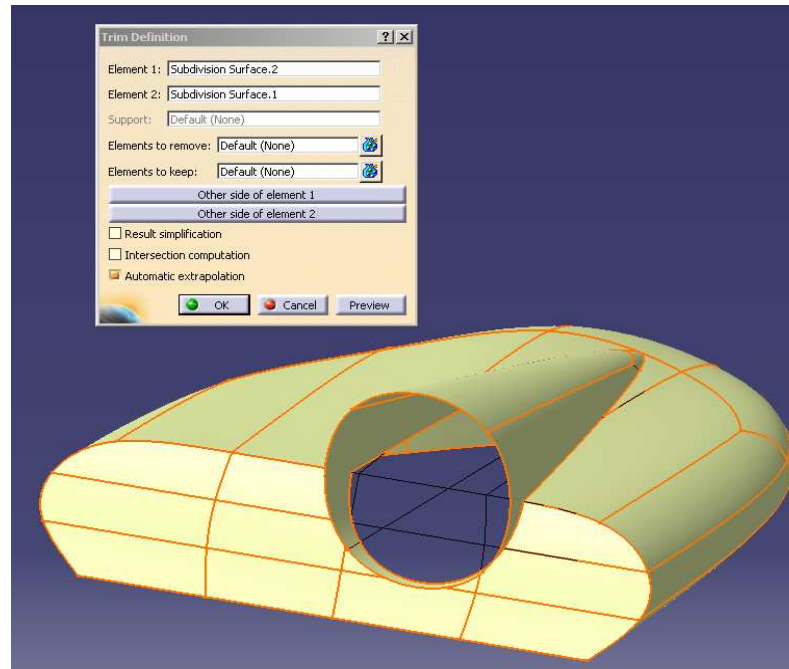**Using the Translation icon, translate the button to its correct position**

Video Projector
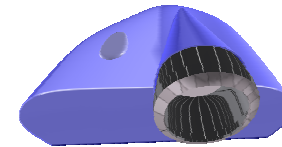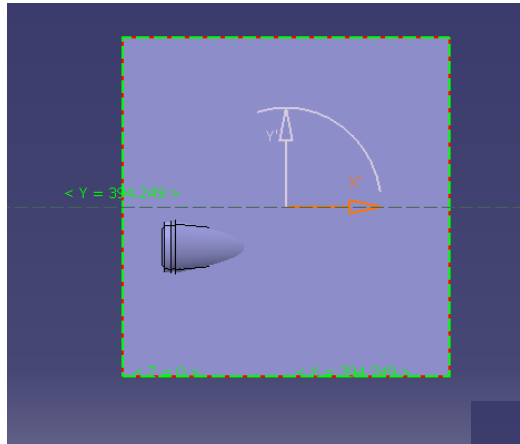
Step 5 – Splitting the Shape

🕐 *15 min*

In this step you will create an Open surface. This will be used to trim the main body of the Video Projector.
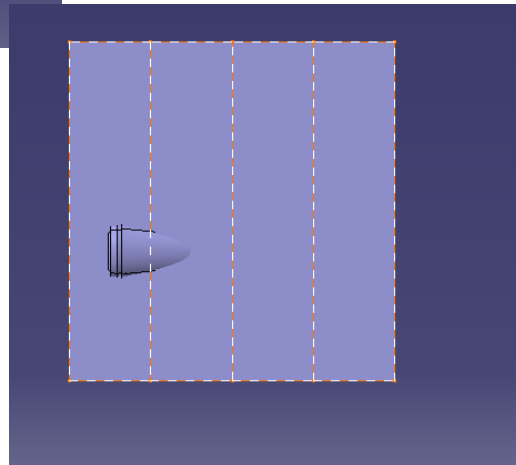
Do It Yourself (1/3)

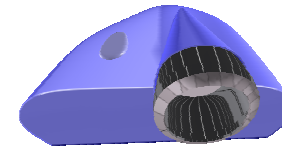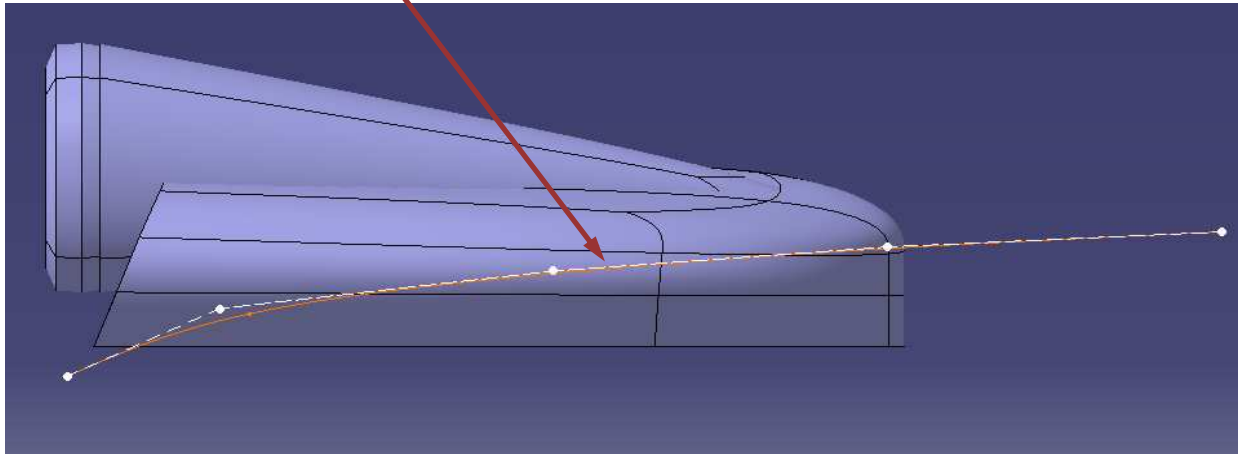🔹 **Press the F4 key and select the top view.**

🔹 **Add an open surface.**

🔹 **Select the Faces cutting icon.**
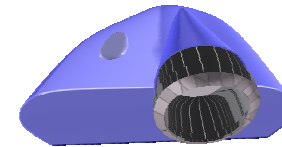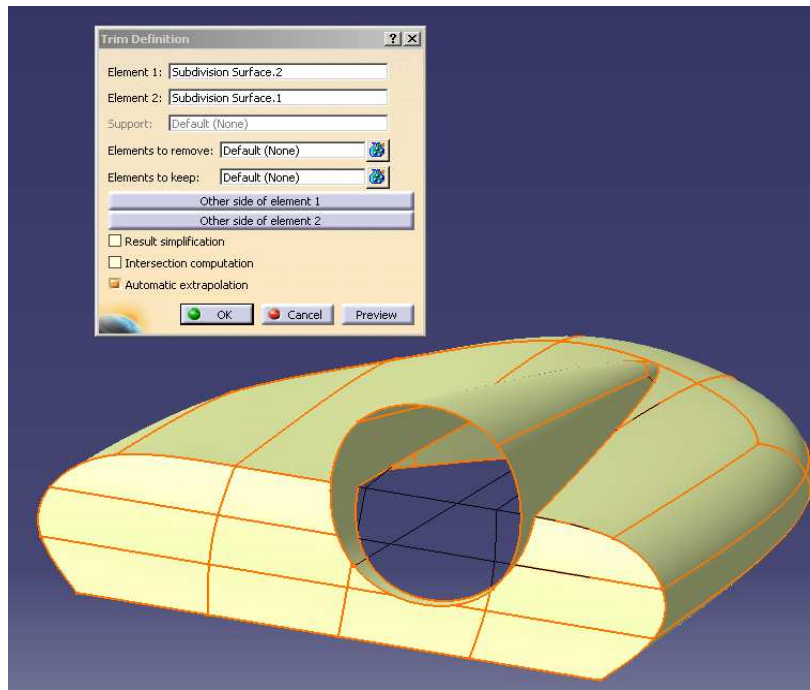
🔹 **Cut the face into four steps.**

Do It Yourself (2/3)

- **Press the F4 key and select the lateral view.**
- **Using the Translation icon refine the shape as shown.**

Do It Yourself (3/3)

- **Trim the 2 first created surfaces.**
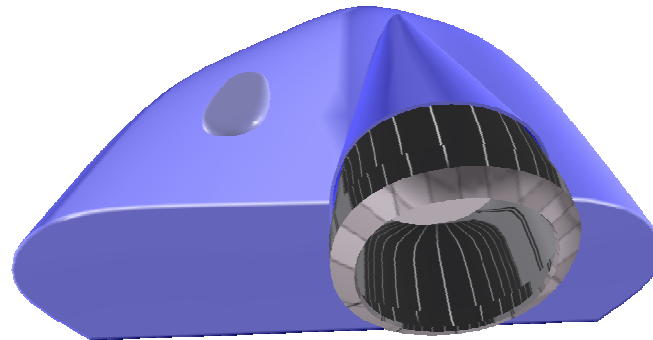- **Split the trim with the open surface.**

Video Projector

Step 6 – Finishing the Video Projector

15 min

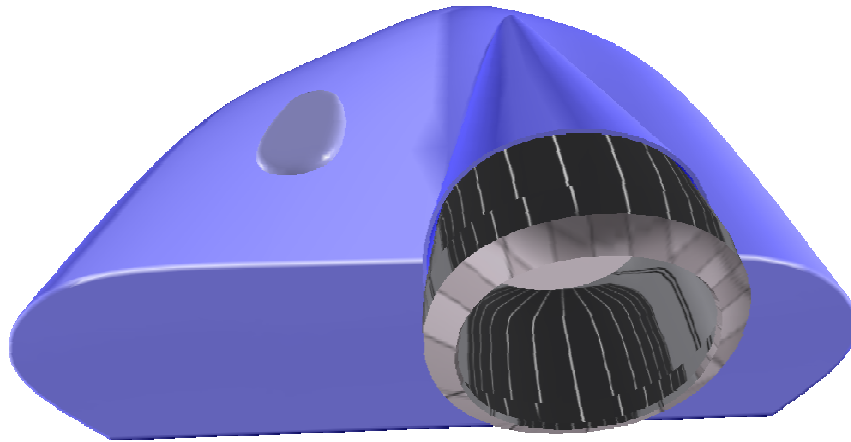**In this step, you will give finishing touches to the Video Projector by applying fillets.**
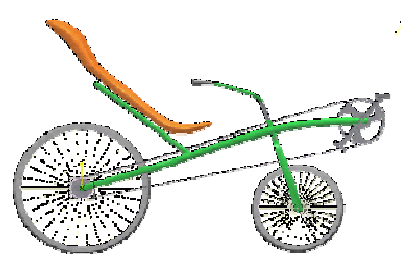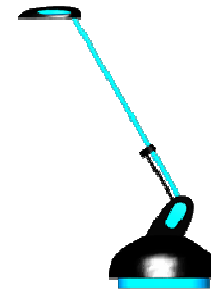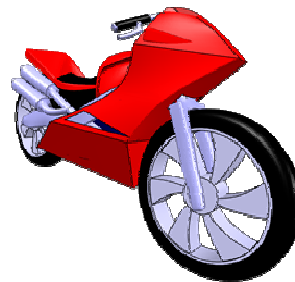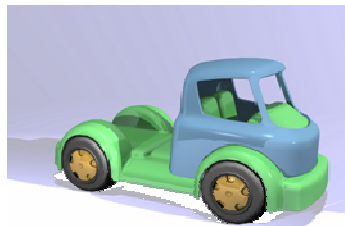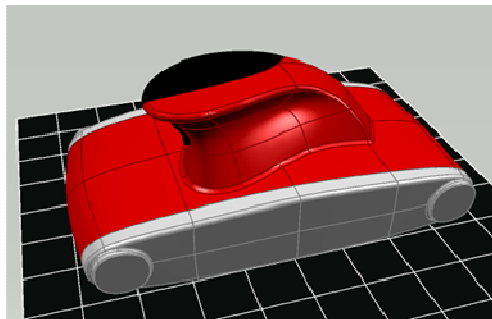
Do It Yourself

- **Switch to the Part Design Workbench.**
- **Create the thick surfaces.**
- **Add the fillets.**

More Exercises for Practice

Practice the following exercises.

9 Hrs 40 min

Design a Lamp (1/2)

Recommendations:

1 closed surface

1 closed surface

1 closed surface

1 closed surface

1 closed surface

1 closed surface

1 closed surface

1 closed surface

1 closed surface

1 closed surface

1 closed surface

1 closed surface
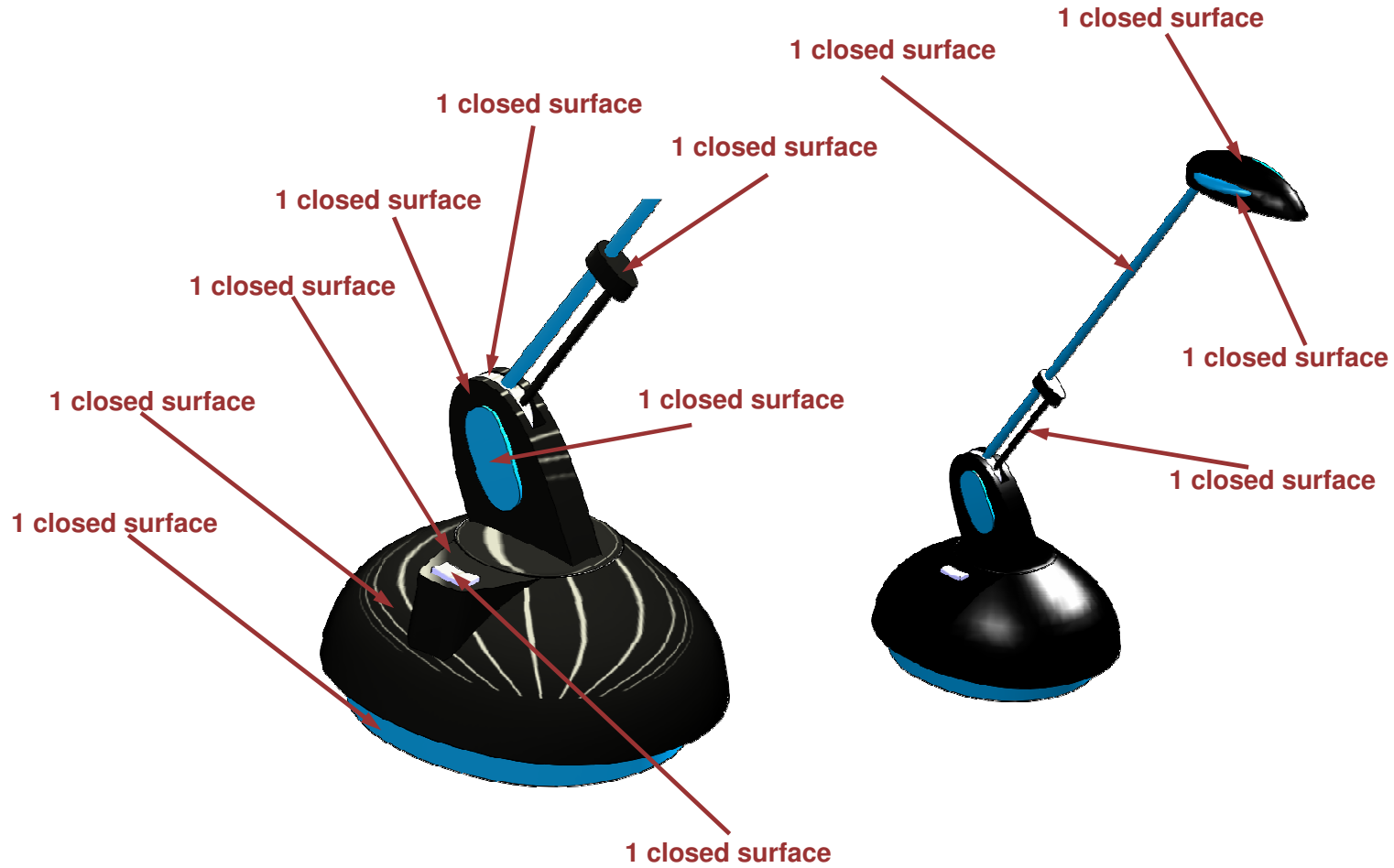
Design a Lamp (2/2)

Level of difficulty	Beginner
Time	1h

Design a Bicycle

Level of difficulty	Beginner+
Time	2h
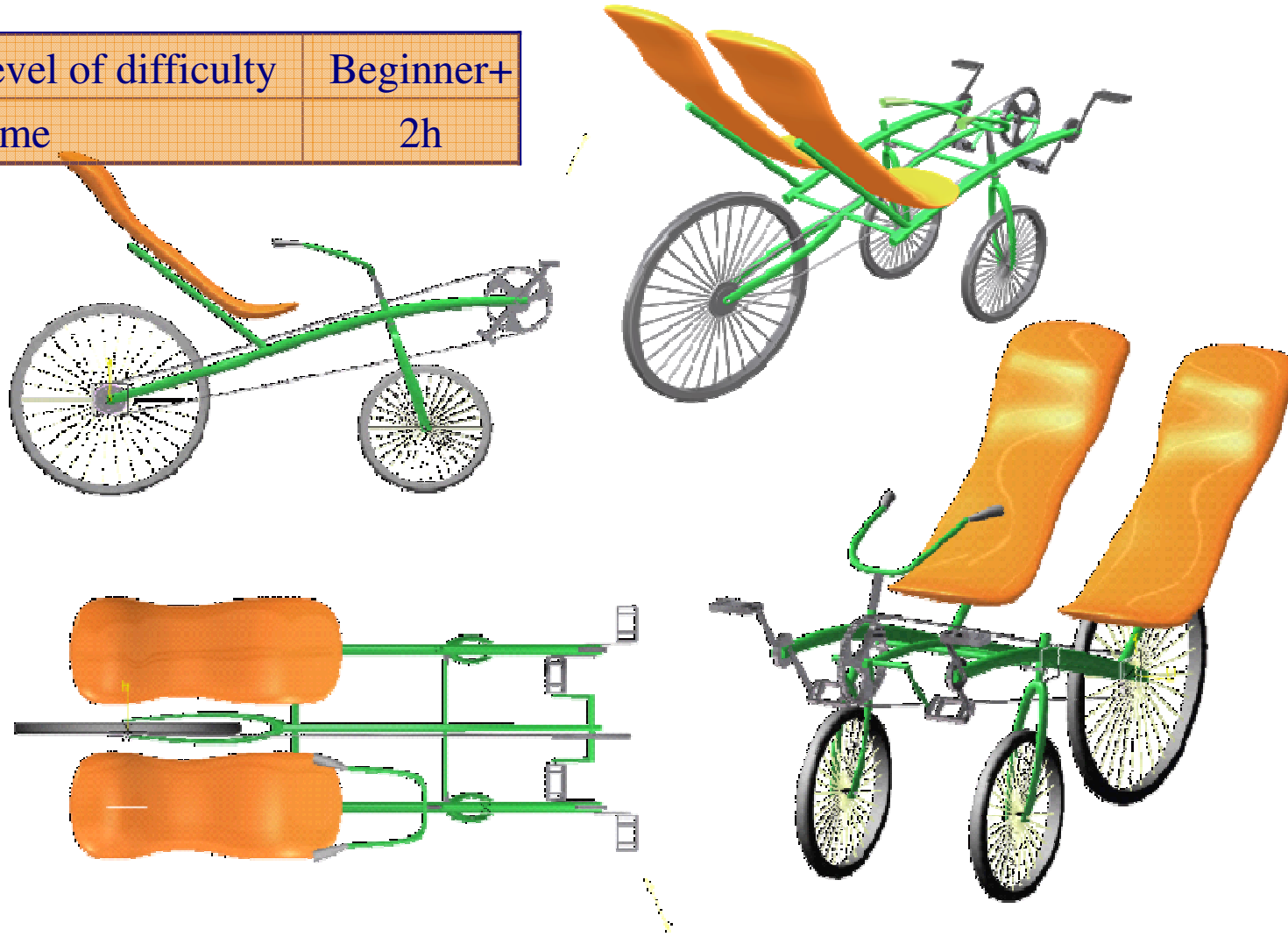
Design a Power Hand Tool

Level of difficulty	Beginner+
Time	1h
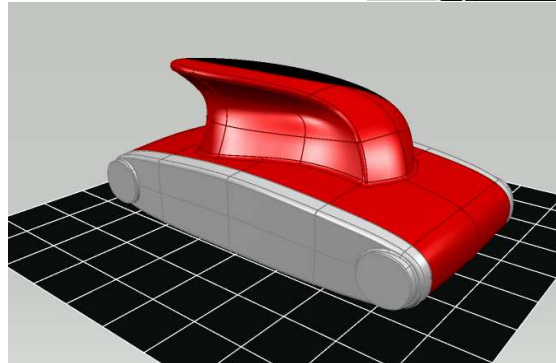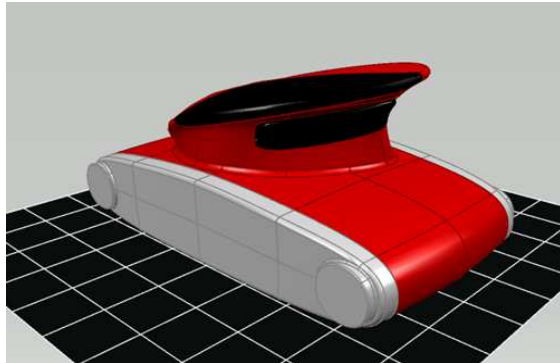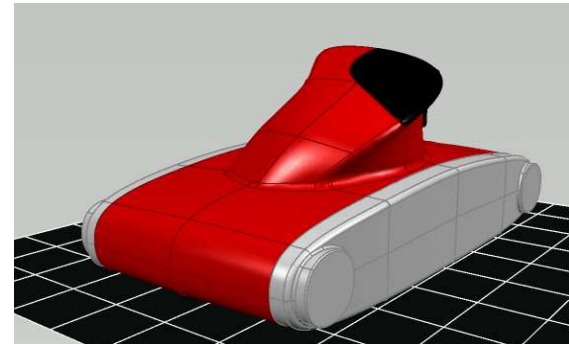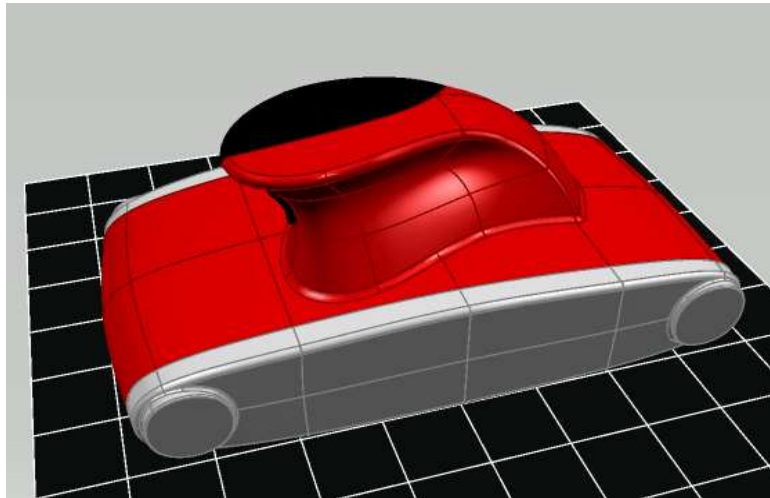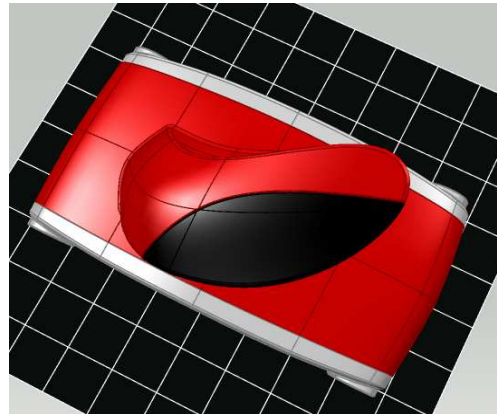
Design a Camera

Level of difficulty	Beginner
Time	40Min
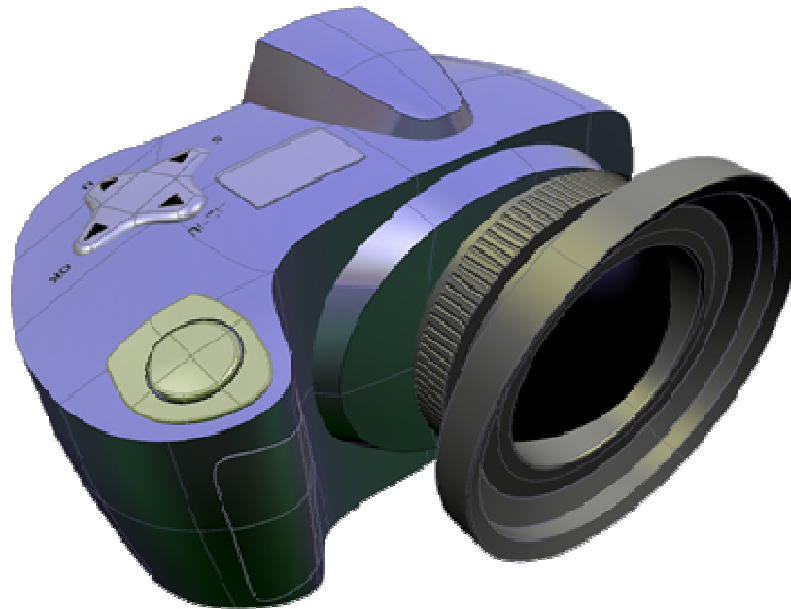
Design a Toy

Level of difficulty	Beginner
Time	2h

Design a Motorcycle

Level of difficulty	Beginner+
Time	3h