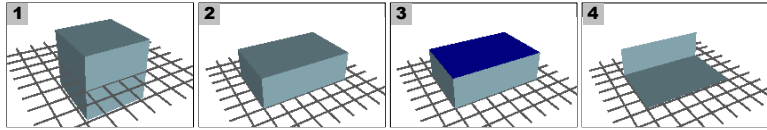


## Ab3d.PowerToys 3D Objects

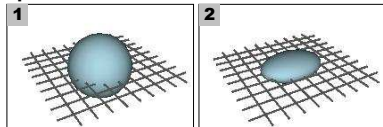
To create 3D objects in XAML, you need to add the following namespace declarations to the root xaml element:  
**xmlns:visuals="clr-namespace:Ab3d.Visuals;assembly=Ab3d.PowerToys"**  
**xmlns:uiElements="clr-namespace:Ab3d.UIElements;assembly=Ab3d.PowerToys"**

### Box



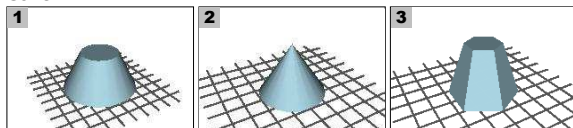
- ```
<visuals:BoxVisual3D CenterPosition="0 0 0" Size="40 40 40" Material="LightBlue"/>
<uiElements:BoxUIElement3D CenterPosition="0 0 0" Size="40 40 40" Material="LightBlue"/>
Ab3d.Models.Model3DFactory.CreateBox(new Point3D(0, 0, 0), new Size3D(40, 40, 40), material)
```
- ```
<visuals:BoxVisual3D CenterPosition="0 10 0" Size="60 20 40" Material="LightBlue"/>
<uiElements:BoxUIElement3D CenterPosition="0 10 0" Size="60 20 40" Material="LightBlue"/>
Ab3d.Models.Model3DFactory.CreateBox(new Point3D(0, 10, 0), new Size3D(60, 20, 40), material)
```
- ```
<visuals:MultiMaterialBoxVisual3D CenterPosition="0 10 0" Size="60 20 40" TopMaterial="Blue" FallbackMaterial="LightBlue"/>
<uiElements:MultiMaterialBoxUIElement3D CenterPosition="0 10 0" Size="60 20 40" TopMaterial="Blue" FallbackMaterial="LightBlue"/>
Ab3d.Models.Model3DFactory.CreateMultiMaterialBox(new Point3D(0, 10, 0), new Size3D(60, 20, 40), material, material, ...)
```
- ```
<visuals:MultiMaterialBoxVisual3D CenterPosition="0 11 0" Size="60 20 40"
    BottomMaterial="LightBlue" BackMaterial="LightBlue" IsTwoSidedMaterial="True"/>
<uiElements:MultiMaterialBoxUIElement3D CenterPosition="0 11 0" Size="60 20 40"
    BottomMaterial="LightBlue" BackMaterial="LightBlue" IsTwoSidedMaterial="True"/>
Ab3d.Models.Model3DFactory.CreateMultiMaterialBox(new Point3D(0, 11, 0), new Size3D(60, 20, 40), material, ...)
```

### Sphere



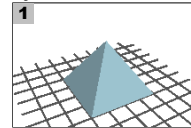
- ```
<visuals:BoxVisual3D CenterPosition="0 0 0" Size="50 50 50" Material="LightBlue"/>
<uiElements:BoxUIElement3D CenterPosition="0 0 0" Size="50 50 50" Material="LightBlue"/>
Ab3d.Models.Model3DFactory.CreateBox(new Point3D(0, 0, 0), new Size3D(50, 50, 50), material)
```
- ```
<visuals:SphereVisual3D Radius="25" Segments="20" Material="LightBlue">
  <visuals:SphereVisual3D.Transform>
    <ScaleTransform3D ScaleY="0.4" ScaleZ="0.7"/>
  </visuals:SphereVisual3D.Transform>
</visuals:SphereVisual3D>
<uiElements:SphereUIElement3D Radius="25" Segments="20" Material="LightBlue"/>
<uiElements:SphereUIElement3D.Transform>
  <ScaleTransform3D ScaleY="0.4" ScaleZ="0.7"/>
</uiElements:SphereUIElement3D.Transform>
Model3D sphere = Ab3d.Models.Model3DFactory.CreateSphere(25, 20, material);
sphere.Transform = new ScaleTransform3D(0, 0.4, 0.7);
```

### Cone



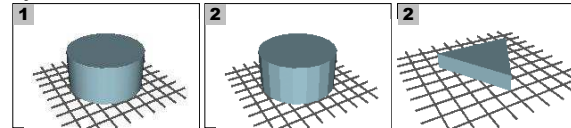
- ```
<visuals:ConeVisual3D BottomCenterPosition="0 0 0" TopRadius="15" BottomRadius="30" Height="30" Material="LightBlue"/>
<uiElements:ConeUIElement3D BottomCenterPosition="0 0 0" TopRadius="15" BottomRadius="30" Height="30" Material="LightBlue"/>
Ab3d.Models.Model3DFactory.CreateCone(new Point3D(0, 0, 0), 15, 30, 30, true, material)
```
- ```
<visuals:ConeVisual3D BottomCenterPosition="0 0 0" TopRadius="0" BottomRadius="20" Height="30" Material="LightBlue"/>
<uiElements:ConeUIElement3D BottomCenterPosition="0 0 0" TopRadius="0" BottomRadius="20" Height="30" Material="LightBlue"/>
Ab3d.Models.Model3DFactory.CreateCone(new Point3D(0, 0, 0), 0, 20, 30, 30, true, material)
```
- ```
<visuals:ConeVisual3D TopRadius="10" BottomRadius="20" Height="30" Segments="6" IsSmooth="False" Material="LightBlue"/>
<uiElements:ConeUIElement3D TopRadius="10" BottomRadius="20" Height="30" Segments="6" IsSmooth="False" Material="LightBlue"/>
Ab3d.Models.Model3DFactory.CreateCone(new Point3D(0, 0, 0), 10, 20, 30, 6, false, material)
```

### Pyramid



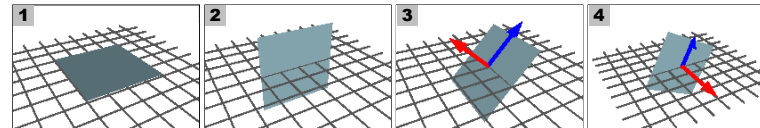
- ```
<visuals:PyramidVisual3D BottomCenterPosition="0 0 0" Size="40 30 40" Material="LightBlue"/>
<uiElements:PyramidUIElement3D BottomCenterPosition="0 0 0" Size="40 30 40" Material="LightBlue"/>
Ab3d.Models.Model3DFactory.CreatePyramid(new Point3D(0, 0, 0), new Size3D(40, 30, 40), material)
```

### Cylinder



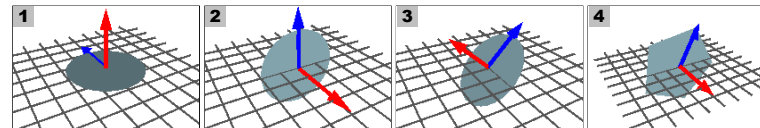
- ```
<visuals:CylinderVisual3D BottomCenterPosition="0 0 0" Radius="30" Height="30" Material="LightBlue"/>
<uiElements:CylinderUIElement3D BottomCenterPosition="0 0 0" Radius="30" Height="30" Material="LightBlue"/>
Ab3d.Models.Model3DFactory.CreateCylinder(new Point3D(0, 0, 0), 30, 30, 30, true, material)
```
- ```
<visuals:CylinderVisual3D BottomCenterPosition="0 0 0" Radius="30" Height="30" Segments="30" IsSmooth="False" Material="LightBlue"/>
<uiElements:CylinderUIElement3D BottomCenterPosition="0 0 0" Radius="30" Height="30" Segments="30" IsSmooth="False" Material="LightBlue"/>
Ab3d.Models.Model3DFactory.CreateCylinder(new Point3D(0, 0, 0), 30, 30, 30, false, material)
```
- ```
<visuals:CylinderVisual3D BottomCenterPosition="0 0 0" Radius="30" Height="10" Segments="3" IsSmooth="False" Material="LightBlue"/>
<uiElements:CylinderUIElement3D BottomCenterPosition="0 0 0" Radius="30" Height="10" Segments="3" IsSmooth="False" Material="LightBlue"/>
Ab3d.Models.Model3DFactory.CreateCylinder(new Point3D(0, 0, 0), 30, 10, 3, false, material)
```

### Plane



- ```
<visuals:HorizontalPlaneVisual3D CenterPosition="0 0 0" Size="40 40 40" Material="LightBlue"/>
<uiElements:HorizontalPlaneUIElement3D CenterPosition="0 0 0" Size="40 40 40" Material="LightBlue"/>
Ab3d.Models.Model3DFactory.CreateHorizontalPlane(new Point3D(0, 0, 0), new Size3D(40, 40, 40), material)
```
- ```
<visuals:VerticalPlaneVisual3D CenterPosition="0 0 0" Size="40 40 40" Material="LightBlue"/>
<uiElements:VerticalPlaneUIElement3D CenterPosition="0 0 0" Size="40 40 40" Material="LightBlue"/>
Ab3d.Models.Model3DFactory.CreateVerticalPlane(new Point3D(0, 0, 0), new Size3D(40, 40, 40), material)
```
- ```
<visuals:PlaneVisual3D CenterPosition="0 0 0" Size="40 40 40" Normal="-1 1 0" HeightDirection="1 1 0" Material="LightBlue"/>
<uiElements:PlaneUIElement3D CenterPosition="0 0 0" Size="40 40 40" Normal="-1 1 0" HeightDirection="1 1 0" Material="LightBlue"/>
Ab3d.Models.Model3DFactory.CreatePlane(new Point3D(0, 0, 0), new Size3D(40, 40, 40), new Vector3D(-1, 1, 0), new Vector3D(1, 1, 0), material)
```
- ```
<visuals:PlaneVisual3D CenterPosition="0 0 0" Size="40 40 40" Normal="0 0 1" HeightDirection="0.5 1 0" Material="LightBlue"/>
<uiElements:PlaneUIElement3D CenterPosition="0 0 0" Size="40 40 40" Normal="0 0 1" HeightDirection="0.5 1 0" Material="LightBlue"/>
Ab3d.Models.Model3DFactory.CreatePlane(new Point3D(0, 0, 0), new Size3D(40, 40, 40), new Vector3D(0, 0, 1), new Vector3D(0.5, 1, 0), material)
```

### Circle



- ```
<visuals:CircleVisual3D CenterPosition="0 0 0" Radius="20" Normal="0 1 0" UpDirection="0 0 -1" Material="LightBlue"/>
<uiElements:CircleUIElement3D CenterPosition="0 0 0" Radius="20" Normal="0 1 0" UpDirection="0 0 -1" Material="LightBlue"/>
Ab3d.Models.Model3DFactory.CreateCircle(new Point3D(0, 0, 0), new Vector3(0, 1, 0), new Vector3D(0, 0, -1), 20, 30, material)
```
- ```
<visuals:CircleVisual3D CenterPosition="0 0 0" Radius="20" Normal="0 0 1" UpDirection="0 1 0" Material="LightBlue"/>
<uiElements:CircleUIElement3D CenterPosition="0 0 0" Radius="20" Normal="0 0 1" UpDirection="0 1 0" Material="LightBlue"/>
Ab3d.Models.Model3DFactory.CreateCircle(new Point3D(0, 0, 0), new Vector3(0, 0, 1), new Vector3D(0, 1, 0), 20, 30, material)
```
- ```
<visuals:CircleVisual3D CenterPosition="0 0 0" Radius="20" Normal="-1 1 0" UpDirection="1 1 0" Material="LightBlue"/>
<uiElements:CircleUIElement3D CenterPosition="0 0 0" Radius="20" Normal="-1 1 0" UpDirection="1 1 0" Material="LightBlue"/>
Ab3d.Models.Model3DFactory.CreateCircle(new Point3D(0, 0, 0), new Vector3(-1, 1, 0), new Vector3D(1, 1, 0), 20, 30, material)
```
- ```
<visuals:CircleVisual3D CenterPosition="0 0 0" Radius="30" Normal="0 0 1" UpDirection="0.5 1 0" Segments="5" Material="LightBlue"/>
<uiElements:CircleUIElement3D CenterPosition="0 0 0" Radius="30" Normal="0 0 1" UpDirection="0.5 1 0" Segments="5" Material="LightBlue"/>
Ab3d.Models.Model3DFactory.CreateCircle(new Point3D(0, 0, 0), new Vector3(0, 0, 1), new Vector3D(0.5, 1, 0), 30, 5, material)
```