**Getting Started - Chapter 2 - Mesh Placement**

**@@启程-第二章-网格放置@@**

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**Place and Scale a Mesh**

**@@放置和缩放网格@@**

**Size 尺寸**

Some meshes, such as box, have properties that you can set to change during their creation.

@@有一些网格，比如盒子网格，可以在建立它们时通过修改一些属性来设置尺寸@@

const box = BABYLON.MeshBuilder.CreateBox("box", {width: 2, height: 1.5, depth: 3})

After creation, and for meshes that do not have sizing options, changes in size are achieved by scaling the mesh.

@@而在建立完成后，或者对于那些没有尺寸选项的网格类型，就要通过缩放网格来改变尺寸了。@@

const box = BABYLON.MeshBuilder.CreateBox("box", {}); //unit cube 单位方块

box.scaling.x = 2;

box.scaling.y = 1.5;

box.scaling.z = 3;

const box = BABYLON.MeshBuilder.CreateBox("box", {}); //unit cube 单位方块

box.scaling = new BABYLON.Vector3(2, 1.5, 3);

As you can see, from the above codes, scaling is a vector object with properties x, y, and z.

@@如你从以上代码所见，“缩放”属性是一个具有x、y、z属性的向量对象。@@

All three of the above sets of codes will produce boxes of the same size

@@上面三种代码都会产生相同尺寸的盒子网格。@@

**Position**

**@@位置@@**

For the majority of meshes the [position](https://doc.babylonjs.com/divingDeeper/mesh/transforms/center_origin/position) property places the center of the mesh at that position. Position is also a vector object with properties x, y, and z, so that the following two sets of codes position the box in the same place.

@@对于大多数网格“位置属性”都表示这个网格的中心的位置。“位置”属性同样是一个具有x、y、z属性的向量对象，所以以下的两种代码都可以将盒子网格放在同一个位置。@@

box.position.x = -2;

box.position.y = 4.2;

box.position.z = 0.1;

box.position = new BABYLON.Vector3(-2, 4.2, 0.1);

We can now use positions to place the boxes sized in three different ways in one playground. In each case the height of a box is 1.5 and therefore for each box position.y = 0.75 to place it on the ground.

@@我们现在可以在训练场里用位置属性来放置盒子网格，而这些盒子网格则可以用三种方式来设置尺寸。在每一种情况下盒子网格的高度都是1.5，所以要把每个盒子的position.y 设为0.75，以使它立于地面之上。@@

Positioning Meshes

放置多个网格

https://playground.babylonjs.com/#KBS9I5#68

**Orientation**

**@@朝向@@**

As for scaling and position the [rotation](https://doc.babylonjs.com/divingDeeper/mesh/transforms/center_origin/rotation) property of a mesh is a vector object with properties x, y and z. However when building our first world we will only consider rotation about one axis since a setting a rotation about all three axes can be surprisingly confusing.

@@和缩放与位置属性一样，网格的“姿态”属性同样是一个具有x、y、z属性的向量对象。但是在我们建造我们的第一个世界时，我们将只考虑绕一个坐标轴的旋转，因为设置绕三个坐标轴的旋转非常容易让人困惑。@@

Rotations are given in radians. If you prefer working in degrees Babylon.js provides a conversion tool. Both these lines of code with produce the same rotation.

@@旋转是用弧度表示的。如果你更喜欢使用角度工作，Babylon.js也提供了一个转换工具。以下的两行代码能够产生相同的旋转效果。@@

box.rotation.y = Math.PI / 4;

box.rotation.y = BABYLON.Tools.ToRadians(45);

Rotating Meshes

旋转网格

https://playground.babylonjs.com/#KBS9I5#69

We can now change the size, position and orientate a mesh adding a little more variation to the box as a building. Before we place more boxes in the scene let us see if we can make them a little more building like.

@@我们现在已经可以修改网格的尺寸、位置和朝向，这为作为建筑的盒子网格添加了一点变化。在添加更多盒子到场景之前，让我们看看能否让它们看起来更像建筑物。@@

**Further reading**

**@@深入阅读@@**

Position A Mesh 放置网格

Learn about positioning meshes in Babylon.js. 学习在Babylon.js中放置网格

https://doc.babylonjs.com/divingDeeper/mesh/transforms/center\_origin/position