**Materi Extra Class**

## Sub Topics

* Camera, renderer, scene
* Objects
* Material
* Light
* Shadow

**Lighting**

For the lighting we will create two types of lights, here are the specifications.

|  |  |
| --- | --- |
| Point Light | |
| Color | #FFFFFF |
| Intensity | 1.5 |
| Distance | 1000 |
| Decay | 0 |
| Position | (100, 100, 100) |

|  |  |
| --- | --- |
| Ambient Light | |
| Color | #FFFFFF |
| Intensity | 0.2 |

**Materials**

1. **Plane**

|  |  |
| --- | --- |
| 1. Plane Geometry | |
| Width | 75 |
| Height | 75 |

|  |  |
| --- | --- |
| Mesh Standard Material | |
| Color | #FFFFFF |
| Texture | asset/moon\_texture.jpg |
| Normal Texture | Asset/normal\_moon\_texture.jpg |

|  |
| --- |
| Position |
| (0, 0, 0) |

|  |
| --- |
| Rotation |
| (Math.PI/2, 0, 0)  Or  (90o, 0, 0) |

1. **Fire**

|  |  |
| --- | --- |
| 1. Sphere Geometry | |
| Radius | 1 |
| Width Segment |  |
| Height Segment |  |

|  |  |
| --- | --- |
| Mesh Standard Material | |
| Color | #FDCF19 |
| Wireframe | true |
| Emissive | #911B1B |

|  |
| --- |
| Position |
| (0, 3, 0) |

1. **Thruster**

|  |  |
| --- | --- |
| 1. Cylinder Geometry | |
| Radius Top | 1 |
| Radius Bottom | 1.3 |
| Height | 2 |
| Radial Segments | 100 |
| Height Segments | 10 |
| Open Ended | false |

|  |  |
| --- | --- |
| Mesh Standard Material | |
| Color | #676B6F |
| Roughness | 0.2 |
| Metalness | 1 |

|  |
| --- |
| Position |
| (0, 4, 0) |

1. **Tail**

|  |  |
| --- | --- |
| Cylinder Geometry | |
| Radius Top | 3 |
| Radius Bottom | 2 |
| Height | 2 |
| Radial Segments | 15 |
| Height Segments | 10 |
| Open Ended | false |

|  |  |
| --- | --- |
| Mesh Standard Material | |
| Color | #FFFFFF |
| Roughness | 0.2 |
| Metalness | 1 |

|  |
| --- |
| Position |
| (0, 6, 0) |

1. **Body**

|  |  |
| --- | --- |
| Cylinder Geometry | |
| Radius Top | 3 |
| Radius Bottom | 3 |
| Height | 6 |
| Radial Segments | 100 |
| Height Segments | 10 |
| Open Ended | false |

|  |  |
| --- | --- |
| Mesh Standard Material | |
| Color | #FFFFFF |
| Roughness | 0.2 |
| Metalness | 1 |

|  |
| --- |
| Position |
| (0, 10, 0) |

1. **Head**

|  |  |
| --- | --- |
| Cylinder Geometry | |
| Radius Top | 2 |
| Radius Bottom | 3 |
| Height | 3 |
| Radial Segments | 100 |
| Height Segments | 10 |
| Open Ended | false |

|  |  |
| --- | --- |
| Mesh Standard Material | |
| Color | #FFFFFF |
| Roughness | 0.2 |
| Metalness | 1 |

|  |
| --- |
| Position |
| (0, 14.5, 0) |

1. **Window**

|  |  |
| --- | --- |
| 1. Sphere Geometry | |
| Radius | 1.5 |
| Width Segment | 20 |
| Height Segment | 20 |

|  |  |
| --- | --- |
| Mesh Lambert Material | |
| Color | #004E8A |
| Wireframe | false |
| Emissive | #FFEE00 |

|  |
| --- |
| Position |
| (0, 11, 2) |

1. **Nose**

|  |  |
| --- | --- |
| 1. Cone Geometry | |
| Radius | 2 |
| Height | 4.5 |
| Radial Segments | 100 |
| Height Segments | 5 |
| Open Ended | false |

|  |  |
| --- | --- |
| Mesh Phong Material | |
| Color | #AC443C |
| Shininess | 50 |

|  |
| --- |
| Position |
| (0, 18.25, 0) |

1. **Leg**

**Consists of 3D Objects: Box, Cylinder, Cone**

1. **Leg Bottom**

|  |  |
| --- | --- |
| Cylinder Geometry | |
| Radius Top | 0.8 |
| Radius Bottom | 0.5 |
| Height | 2 |
| Radial Segments | 100 |
| Height Segments | 1 |
| Open Ended | false |

|  |  |
| --- | --- |
| Mesh Standard Material | |
| Color | #AC443C |
| Roughness | 0.2 |
| Metalness | 1 |

|  |
| --- |
| Position |
| (0, 1, 0) |

1. **Leg Body**

|  |  |
| --- | --- |
| Cylinder Geometry | |
| Radius Top | 0.8 |
| Radius Bottom | 0.8 |
| Height | 6 |
| Radial Segments | 100 |
| Height Segments | 1 |
| Open Ended | false |

|  |  |
| --- | --- |
| Mesh Standard Material | |
| Color | #AC443C |
| Roughness | 0.2 |
| Metalness | 1 |

|  |
| --- |
| Position |
| (0, 5, 0) |

1. **Leg Top**

|  |  |
| --- | --- |
| 1. Cone Geometry | |
| Radius | 0.8 |
| Height | 2 |
| Radial Segments | 100 |
| Height Segments | 10 |
| Open Ended | false |

|  |  |
| --- | --- |
| Mesh Phong Material | |
| Color | #AC443C |
| Shininess | 0.5 |

|  |
| --- |
| Position |
| (0, 9, 0) |

1. **Connector**

|  |  |
| --- | --- |
| Box Geometry | |
| Width | 0.5 |
| Height | 1.5 |
| Depth | 4 |

|  |  |
| --- | --- |
| Mesh Phong Material | |
| Color | #AC443C |
| Shininess | 0.5 |

|  |
| --- |
| Position |
| (0, 0, 0) |

|  |
| --- |
| Rotation |
| (-Math.PI/6, 0, 0) |

**Position For Each Leg**

|  |  |
| --- | --- |
| Leg 1 | |
| Position | (-4, 0, 4) |
| Rotation | (0, (135 \* Math.PI) / 180, 0) |

|  |  |
| --- | --- |
| Leg 2 | |
| Position | (4, 0, 4) |
| Rotation | (0, (225 \* Math.PI) / 180, 0) |

|  |  |
| --- | --- |
| Leg 3 | |
| Position | (4, 0, -4) |
| Rotation | (0, (315 \* Math.PI) / 180, 0) |

|  |  |
| --- | --- |
| Leg 1 | |
| Position | (-4, 0, -4) |
| Rotation | (0, (45 \* Math.PI) / 180, 0) |

1. **Shadows**
2. **Shadow Caster**

* Every Rocket’s Part

1. **Shadow receiver**

* Plane