

# Rotations

Thursday, December 31, 2020 3:48 PM

**Quaternions:** Simply put, how Unity handles rotations.

**Euler Angles:** Amount of degrees an object is rotating along a particular axis.

**Always handle rotations through quaternions!!**

**Quaternion.Identity:** Identity rotation. No rotation. Set x, y, z rotation to 0.

**Quaternion.Euler:** Return a rotation that rotates z around the z axis, x degrees along the x axis, and y degrees along the y axis.

**Quaternion.LookAtRotation:** Set the rotation to aim towards a specified target.

```
[SerializeField] Transform aimTarget;  
// direction = destination - source  
Vector3 directionToFace = aimTarget.position - transform.position;  
// Draw out a ray towards the specified target.  
Debug.DrawRay(transform.position, directionToFace, Color.green);  
transform.rotation = Quaternion.LookAtRotation(directionToFace);
```

## Quaternion.Slerp

Linear interpolation but spherically. Helps to smooth out rotations.

Quaternion targetRotation = Quaternion.LookAtRotation(directionToFace);

transform.rotation = Quaternion.Slerp(transform.rotation, targetRotation, Time.deltaTime);

From rotation

To rotation

Time it takes to complete rotation