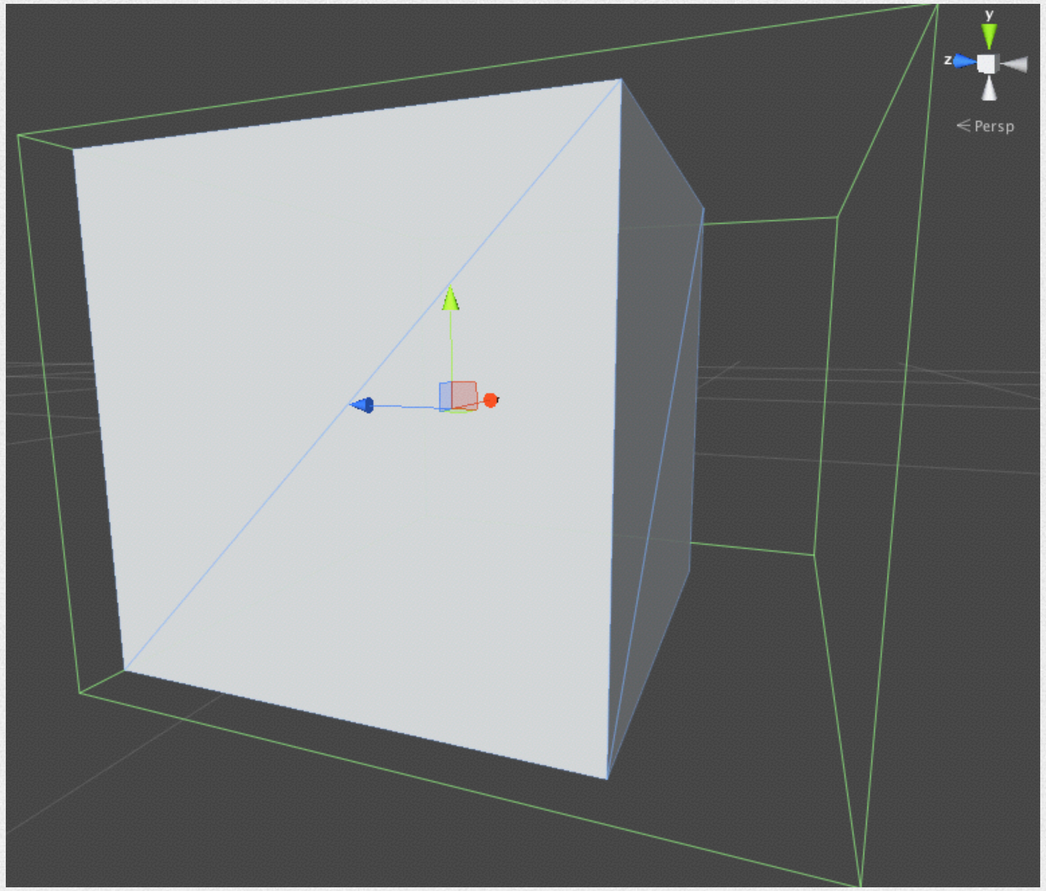
# Intro to Unity

## Physics

# Colliders

- Informs when a collision has occurred.
- Can be a trigger custom code as well.
- There are several primitive shapes available.
- Several colliders can be combined to create compound shapes.
- In order to register collisions, one object must be a rigidbody

# Colliders (cont'd)




# Rigidbodies

- Rigidbodies allows a GameObject to react to physics.
- Can receive both force and torque.
- Can "opt-out" to reacting to gravity.
- Three levels of collision detection:
  - Discrete
  - Continuous
  - Continuous Dynamic

# Raycasting

- Used to determine if a collider is intersecting a ray from a source.
- Raycasts can be used to simulate bullets fired from guns.
- Provide the source, direction, and distance to determine if a collision will occur.

# Joints

- Can create dynamic reactions with your physics objects.
- Joints can collapsed based upon the amount force it receives.
- Three types of joints available:
  - Fixed Joint
  - Hinge Joint
  - Spring Joint

# Physic Material

- Used to adjust friction and bouncing of objects
- Can be used to simulate the reaction against different types of surfaces: ice, concrete, rubber, etc.
- Can be applied to individual models or applied as the default throughout the entire project.

# Demo

# Challenge