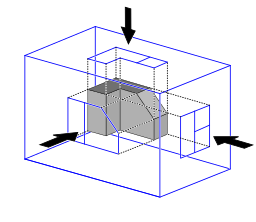
**iCREAT I: Module 8 - Final Project Part Engineering Drawing**horizontal line

# Objectives

* Understand Engineering Drawing concepts
* Use Orthographic Projection rules to create an Engineering Drawing
* Use dimensioning rules to appropriately describe drawn object
* Coordinate design of your model with your teammate

# Background / Scenario

You have created rough sketches of a unique part that you are planning to include in your Micromouse project. Before you design the part in SolidWorks, you will discuss and coordinate your design with your teammate. Once your team is settled on the design, you will create a dimensioned orthographic projection sketch of your part on paper.

# Required Resources:

* Your teammate
* Access to the Internet
* Word Processing software
* Graph Paper (you can print graph paper from <http://incompetech.com/graphpaper/>)
* Pencil, eraser, and straightedge (you can use a ruler or any other straightedge)

# Part 1: Finalizing your design

### Step 1: Team Discussion

# Arrange a time to discuss your design with your teammate. You can discuss this virtually using any method that works for you.

# For the discussion, you will need:

# Yours and your teammate’s idea sketches

# Chassis size and shape

# Idea of other components that will need to be arranged on the chassis

# Open mind

# As you discuss and settle on the design remember:

# Consider where each part will fit in the overall design of the Micromouse

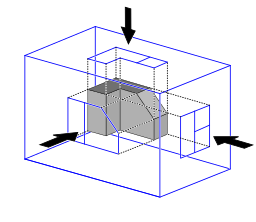
# Each part must complement each other - both teammates cannot design the same part

# Consider how your designed part will fit on the chassis along with other necessary components

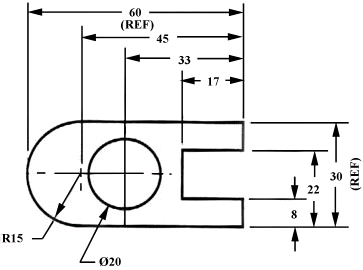
# Note: You must complete Part 1 before starting on part 2 of this assignment

# Part 2: Orthographic Projection and Dimensions guidelines

### Step 1: Orthographic Projection

1. Orthographic Projection is a method of representing 3 dimensional objects on paper in 2 dimensions preserving their true size and shape.  
     
   Watch the following videos to review what we discussed in class:
   1. Orthographic Projection in Engineering Drawings: <https://www.youtube.com/watch?v=2YtdGVzDFkw>
   2. Third Angle Projection vs. First Angle Projection: <https://www.youtube.com/watch?v=bk2E8P33Ztc>
   3. Third Angle Projection vs. First Angle Projection with a Mechanical Component: <https://www.youtube.com/watch?v=yGjVnXgUpQM>  
      Remember, in the United States, we use **Third Angle Projection**

### Step 2: Dimensions

1. Dimensions are necessary to ensure that the part is created to an appropriate size.
   1. Watch the videos on dimensioning guidelines to review what we discussed in class: <http://www.youtube.com/watch?v=iEKHak6uJ38>

# Part 3: Create Engineering Drawing of your final project part

### Step 1: Create an orthographic projection drawing of your final part

1. Use graph paper and pencil to draw **all necessary views** of your final project part.
   1. Use landscape orientation of the paper
   2. Remember to follow **Orthographic Projection** rules
   3. We use **Third Angle Projection** in the United States
   4. Use a **pencil** to draw
   5. Your drawing must be **neat**

### Step 2: Add dimensions to the views created in Step 1

1. Add all necessary dimensions and notes to accurately describe your part
   1. Be sure to include all necessary dimensions, but do not duplicate. If dimension already appears in one view, the same dimension is not necessary in another view.
   2. All circles need a Diameter dimension
   3. Arcs have a Radius dimension
   4. All text on drawings must be written in CAPITAL LETTERS
   5. Add any notations and notes that will help describe your part
   6. All dimensions and text must be legible and neat

### Step 3: Add Notes to the drawing created in Steps 1 and 2

1. Add the following information in the right hand side of your drawing
   1. Drawing Title (title of the part you are creating)
   2. Your Name
   3. Date
   4. Scale. Add NTS (Not to scale) if your drawing was not created to scale. This notifies everyone that they would not be able to use a ruler to measure what has been drawn.
2. Remember:
   1. All text on drawings must be written in CAPITAL LETTERS
   2. All dimensions and text must be legible and neat

### Step 4: Submit

1. Submit your drawing on or before the due date in class. Scanned copy or a picture can also be submitted.

The drawing should be included in your final project documents.