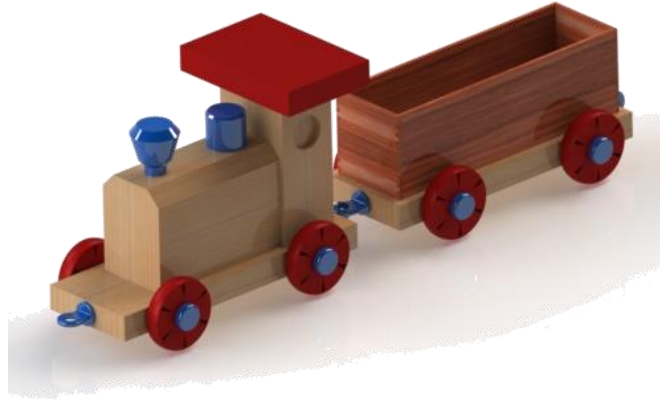# Train

Introduction This lesson will focus on the creation of parts of the Train using the new **Auto Scale**, **Drag & Drop** and **Show & Hide**

Learning Intentions This lesson will focus on the **R** Command
(Recent Parts/Assemblies) **Scale Sketch**, **Drag/Drop** and
Auto Scale

Prerequisite knowledge: To complete this exercise you should have a working knowledge of SolidWorks 2009 and a previous knowledge of the following commands are required in this lesson: **Sketching Extruded Boss/Base, Extrude Cut, Fillet, and Adding Appearances. File management.**

Creating Parts

The Train Engine has ten parts we will go through the process of creating the parts with particular reference to some new options available. The name of the parts are as follows Body, Cabin, Cabin Top, Dowel, Funnel Front, Funnel Back Hook, Ring and Wheel.
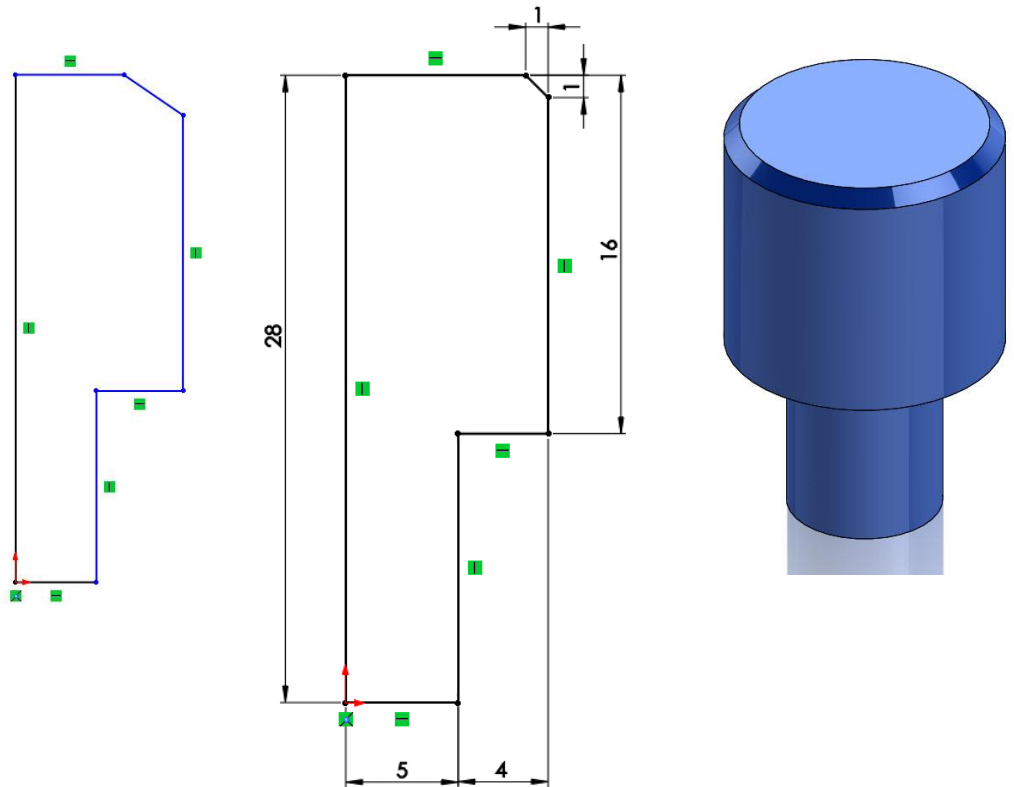
Funnel Front
▲

Create a sketch of the funnel and apply the dimensions. **Note:** When you apply the dimension the sketch will **Auto Scale**. Select **Revolve**
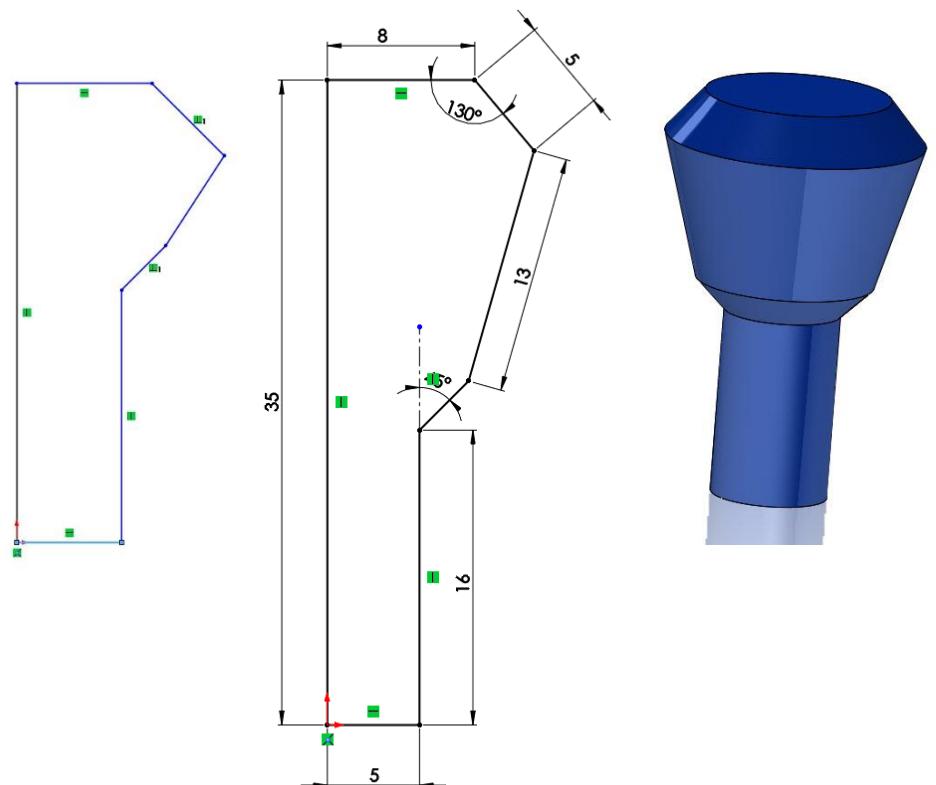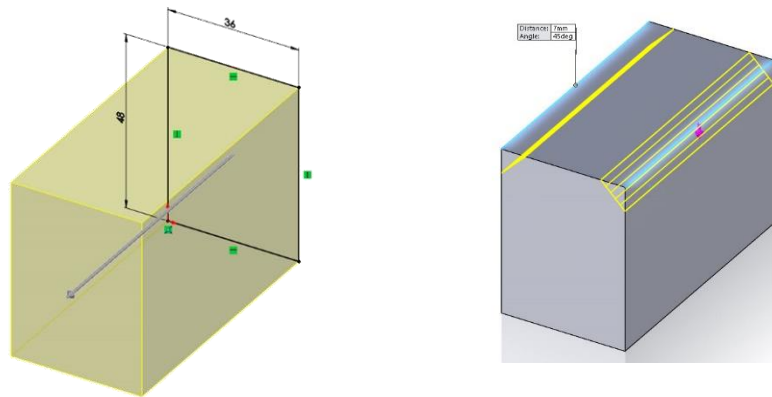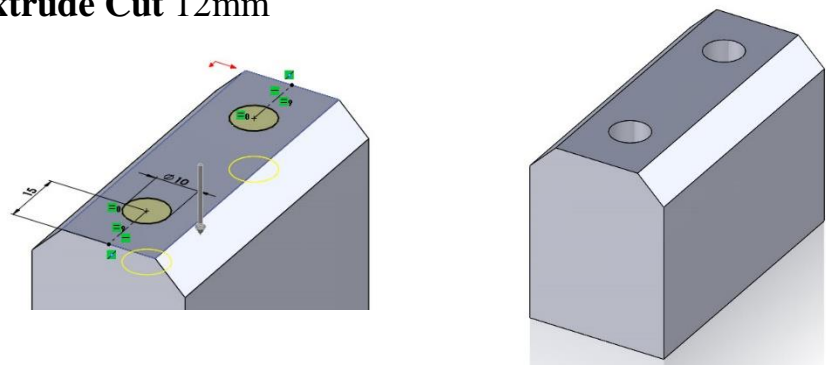
Funnel Back

Body   Create a rectangle 36mm by 48mm, **Extrude** 72 mm
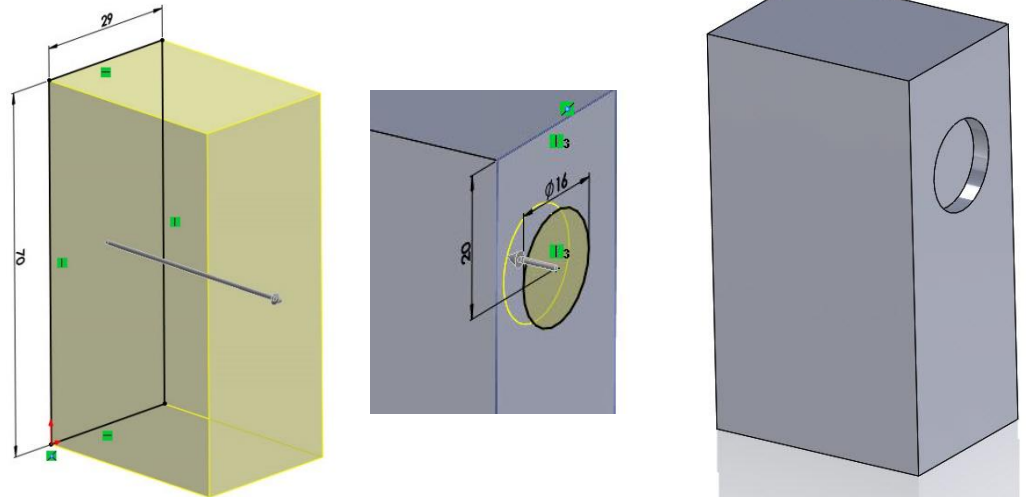
and **Chamfer** 7mm

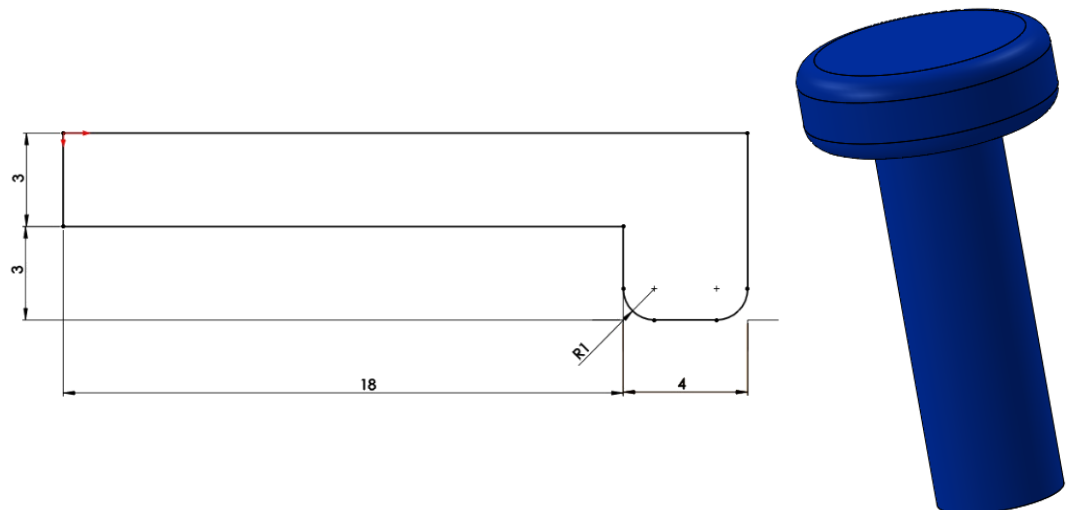Sketch Circle Dia. 10 mm on the top surface and

Extrude Cut 12mm

Cabin

Create a rectangle 29mm 70mm and **Extrude** 40mm
Sketch a circle Dia.10 and **Extrude Cut** 3mm repeat
on opposite side.

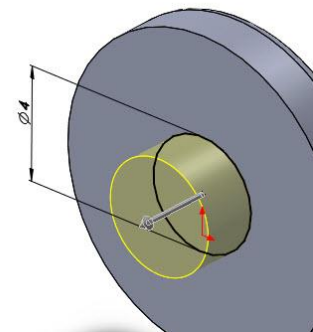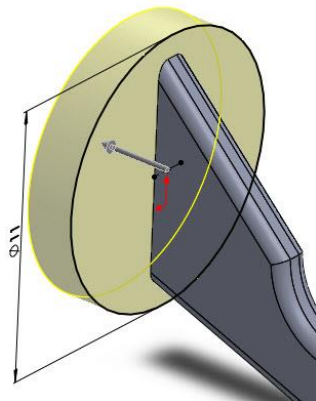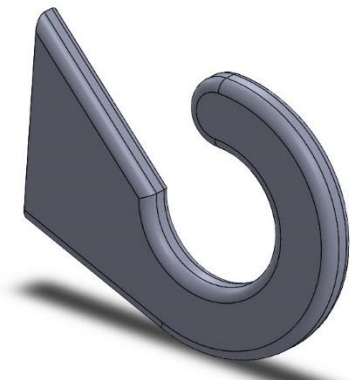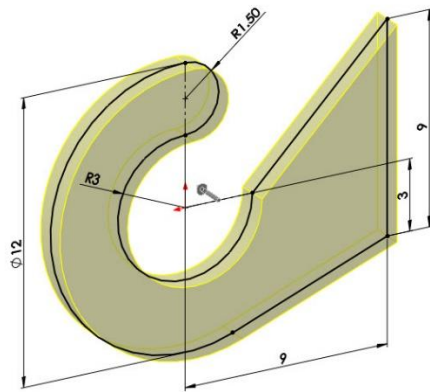**Dowel**

Create a **Sketch** and **Revolve**.

Hook

Create the **Sketch** and **Extrude**, **Mid Plane** 1.5mm.
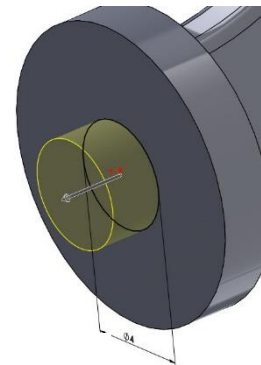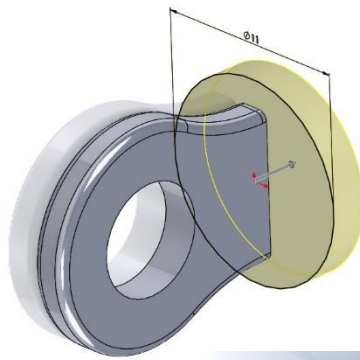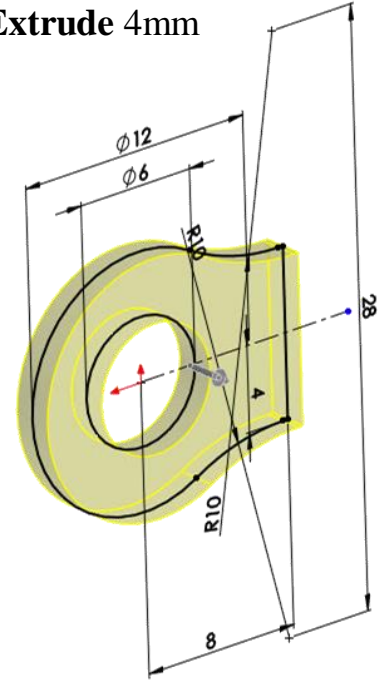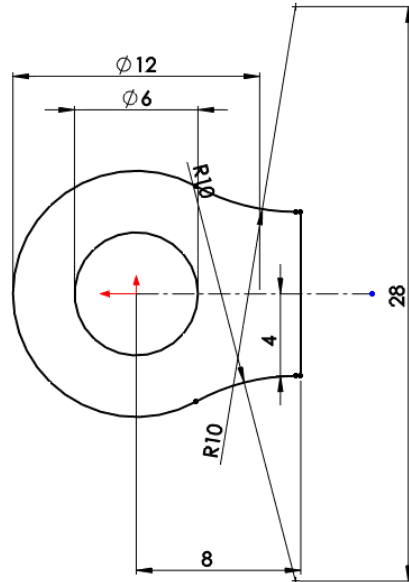Fillet edges .5mm. Create a circle on the back surface
Dia. 11mm. **Extrude** 2mm. Create another circle Dia.
4mm and **Extrude** 4mm.

Ring

Create the sketch to the dimensions given and **Extrude** mid plane 1.5 mm. **Fillets** .5mm, Create a circle on the back 11mm and **Extrude** 2mm. Create another circle Dia. 4mm and **Extrude** 4mm
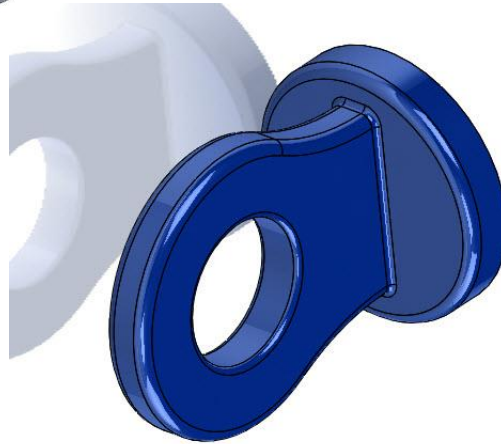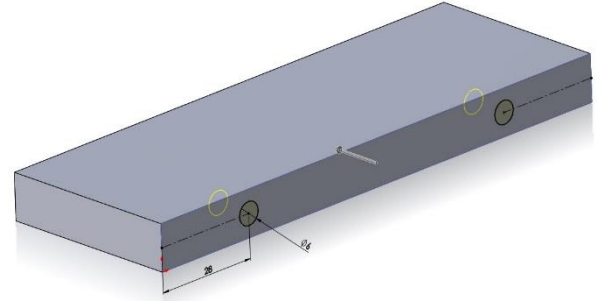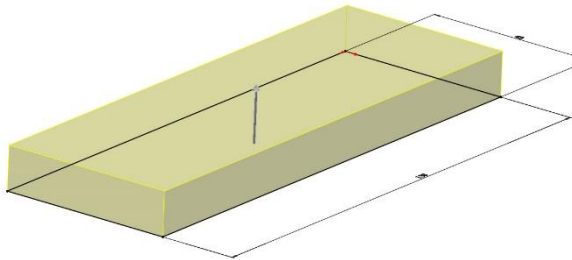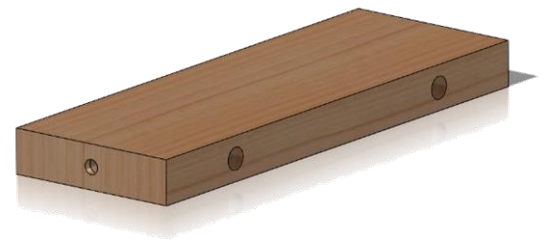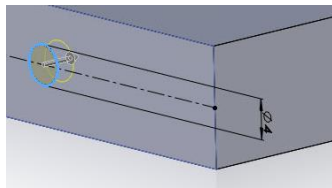
Base

Draw the base 128mm by 48mm and **Extrude** 12mm.

Sketch the holes in the position shown and **Extrude** 10 mm
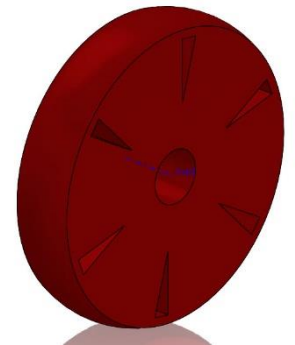

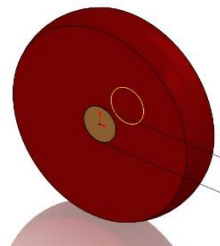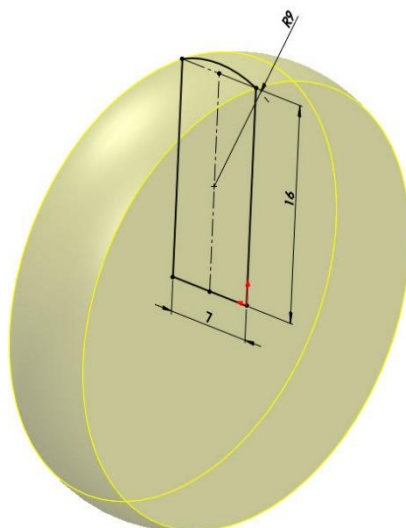**Sketch** a circle 4mm Dia. and **Extrude** 2mm

Wheel

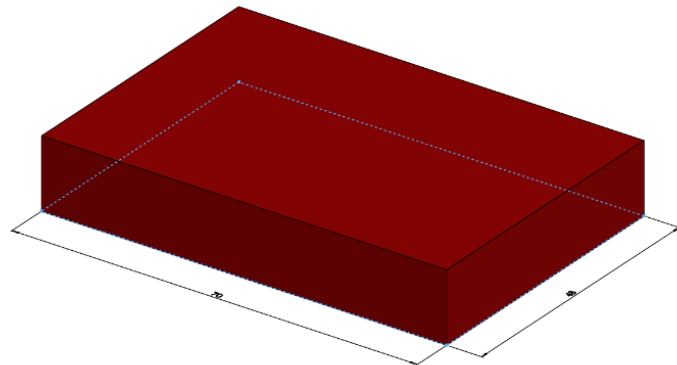Create a sketch to the dimensions below **Revolve**

Sketch on the surface and **Extrude** through all

Use the **Pattern** command to create the triangles on the surface

Cabin Top   **Sketch** a rectangle 48mm by 70 mm and **Extrude** 20
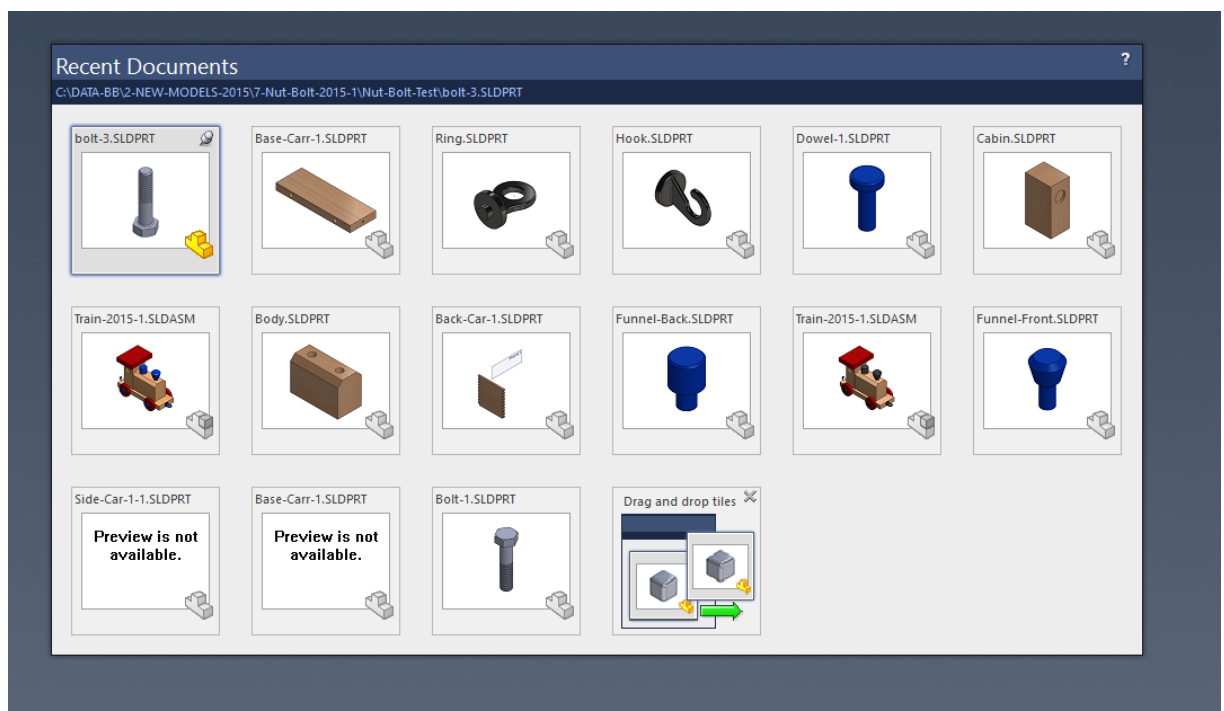

Inserting Part/Assembly

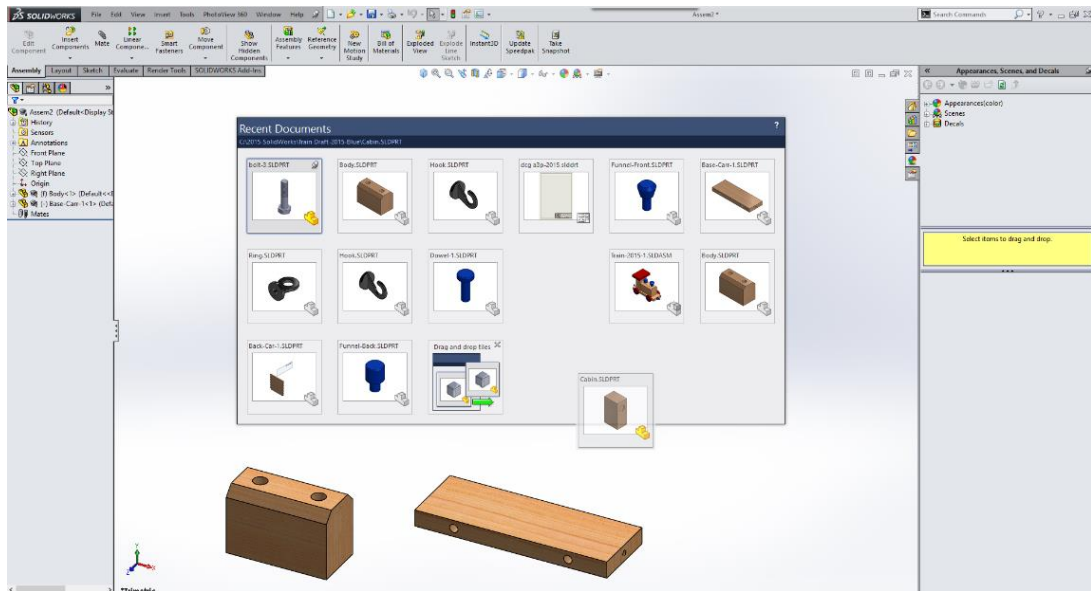**Method -1**   Select **New Assembly** and press the letter **R** the recent
▲   parts will appear. **Drag & Drop** the parts into the
                  assembly.

Drag Drop

▲   Select the part and **Drag & Drop** into the assembly
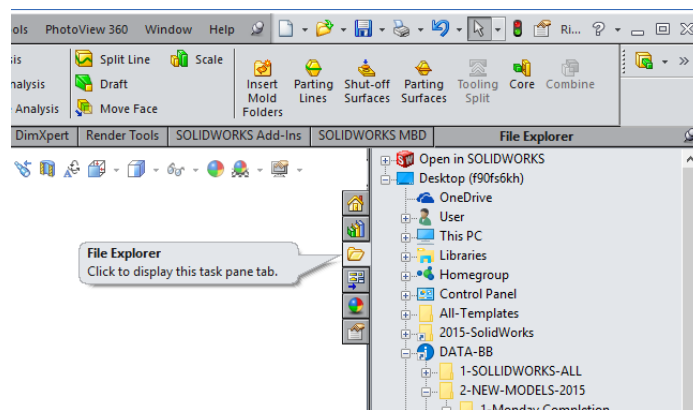

Train Assembled

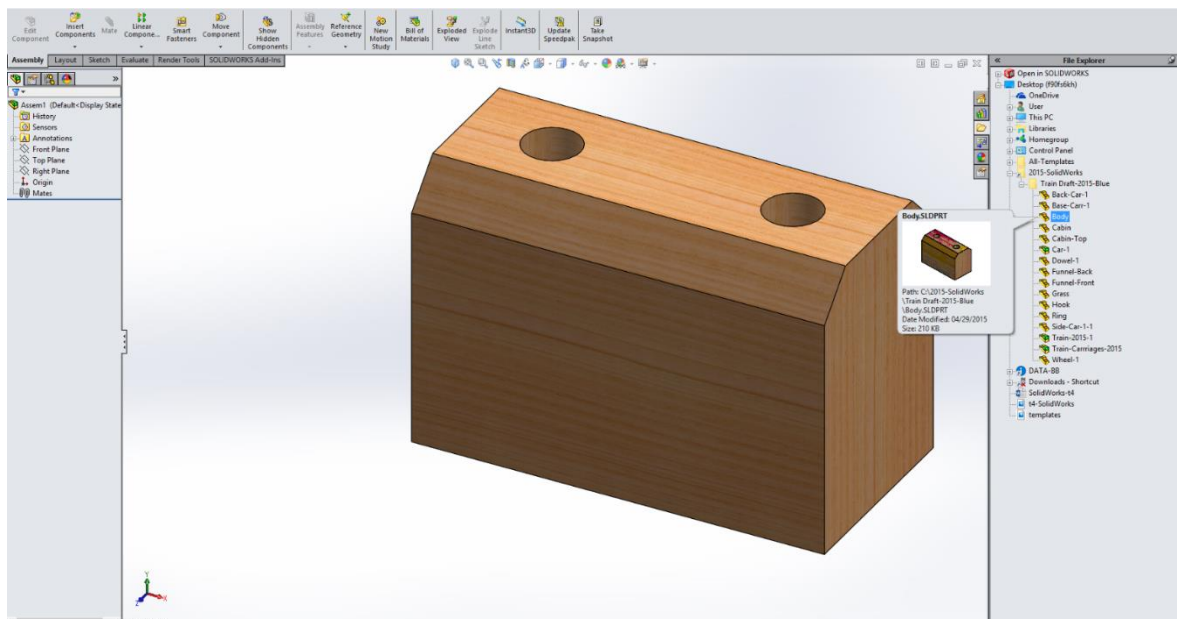**Inserting Part/Assembly**

Method -2

▲

It is possible to Drag & Drop the parts into the assembly using the interface on the right hand side. Select the **File Explorer** Option

Navigate to the folder required and select the file a preview will appear **Drag** and **Drop** the parts into the assembly.

Show and Hide Parts

Parts may be hidden in an assembly by using a combination of the **Mouse** and **Tab Key**.

Hide   Hold the **Tab Key** down and move the mouse over the parts to be hidden.

Show   Hold the **Tab Key** and the **Shift Key** down to show the part

Note: this command is very useful for demonstration purposes