Chocolate Bar Exercise

Object Analysis sheet

Object Analysis sheet

Linear Pattern

NAME: _____ DATE: _____

DESIGN & COMMUNICATION GRAPHICS

Linear Pattern

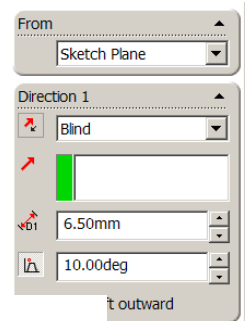|	
Commands Used	This lesson includes **Sketching,** *Extruded Boss/Base(with draft), Extruded Cut, Fillet and Linear Pattern.*
Getting Started	Create a sketch, on the top plane using the dimensions shown. Position the sketch such that the origin is in the lower left hand corner.
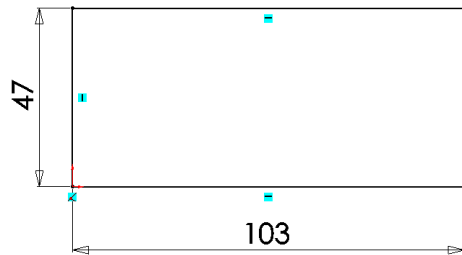
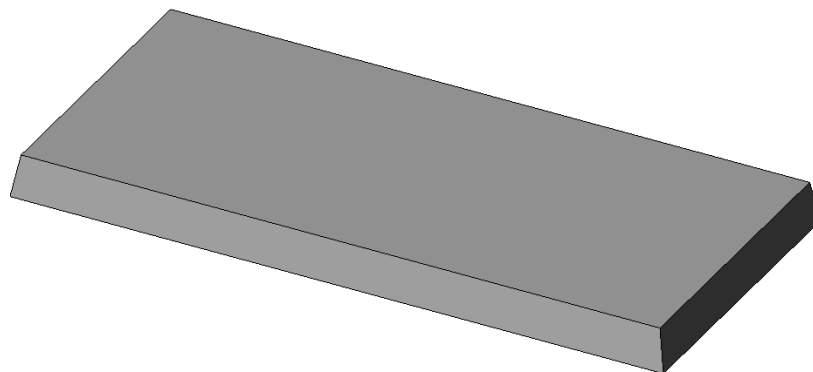|	
Creating the feature	Select **Extruded Boss/Base** Choose the **Blind** option from the list and enter a **Depth** of 6.5mm.
Adding draft	**Draft** will slope the edges of an extruded boss.
Where to find it	Select **Draft On/Off,** enter a value of 10º. Choose **OK**

Adding the top blocks

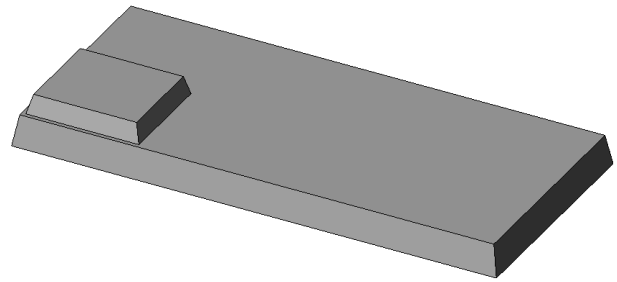|	
Creating the sketch	Create the rectangular sketch on the top face and dimension as shown.
	A sketch may be defined using edges and features which are not on the active sketch plane.
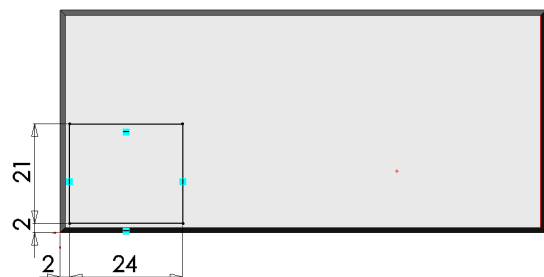
Extrude Boss/Base   **Extrude Feature Settings**

End Condition = **Blind**
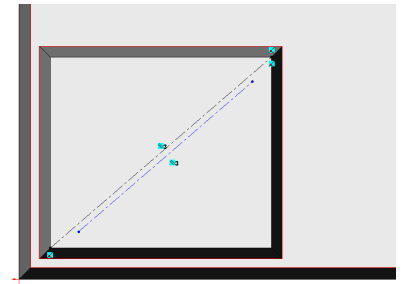
Depth = **4mm**

Draft Angle = **15º**

Choose **OK**

Text
Generating the text   Create a sketch on the top surface of
the chocolate block.

Add a diagonal line as a **Centerline.**
Draw another line on the surface and
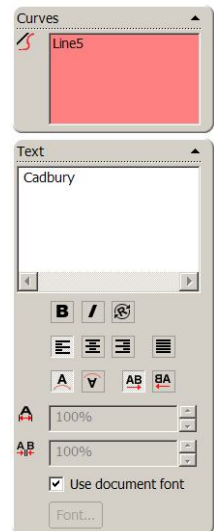add a **Paralell Relation**.

Adding Text   Select **Tools/Sketch Entities/Text**
or select **text** from the **sketch**
toolbar.

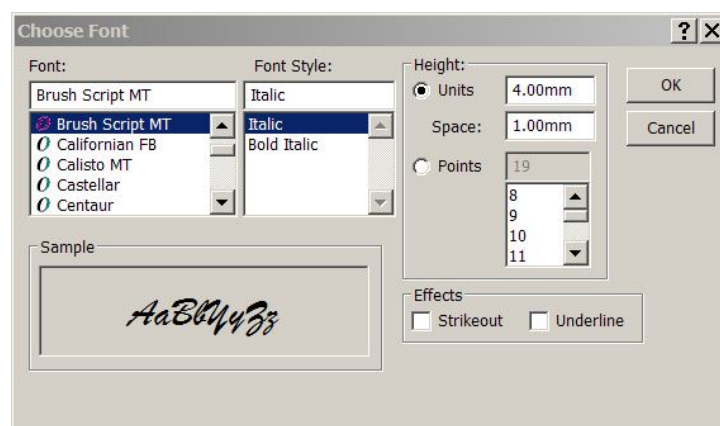Select the parallel centerline as the text guide

Type **Cadbury** into the text window

Use Document Font will be selected by
default. Deselect by clicking on the tick
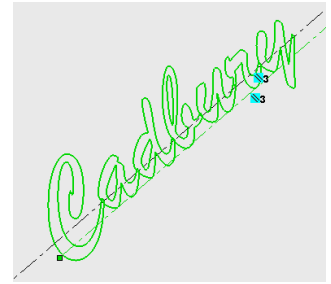next to it. **Font** is no longer greyed out.

Font Details   Choose **Font** and make the selections as shown. Select OK
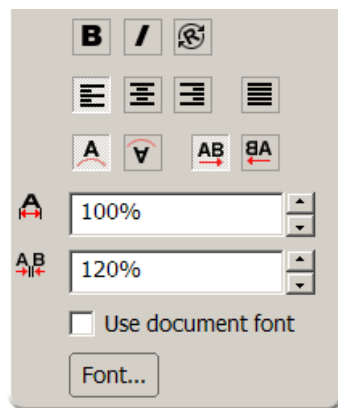
|	
Text Spacing	SolidWorks will not extrude a sketch with overlapping lines or regions. Script text utilises such overlapping regions, as shown opposite. To eliminate these, the spacing between the letters must be increased.

Increasing spacing Increase the spacing [AB icon] to 120% to eliminate the overlapping regions, as shown below.
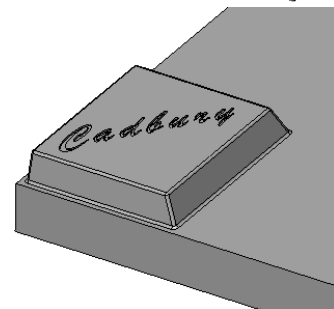

Choose **OK** [green check]

Creating the feature	**Extrude Cut** the text to a **depth** of **0.2mm**
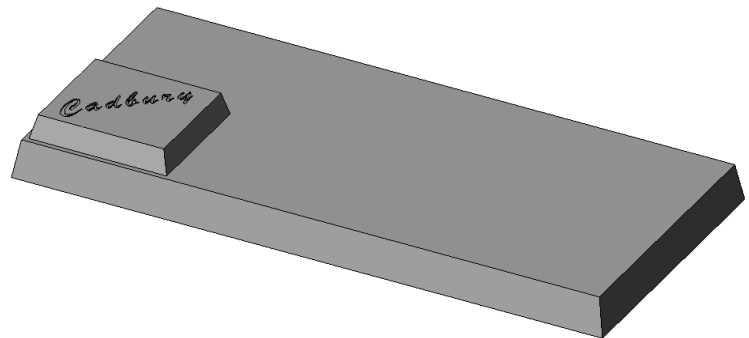
Fillet	Create a fillet of 0.35mm radius on all of the edges of the top block. Create a second fillet of 0.35mm on the edges of the lower block, excluding the base edges.

Note	These fillets were created individually because, the edges of fillet1 must be copied to form the remaining top blocks whereas the edges of fillet2 are not. If they were formed in one feature it would prove more difficult to select them.
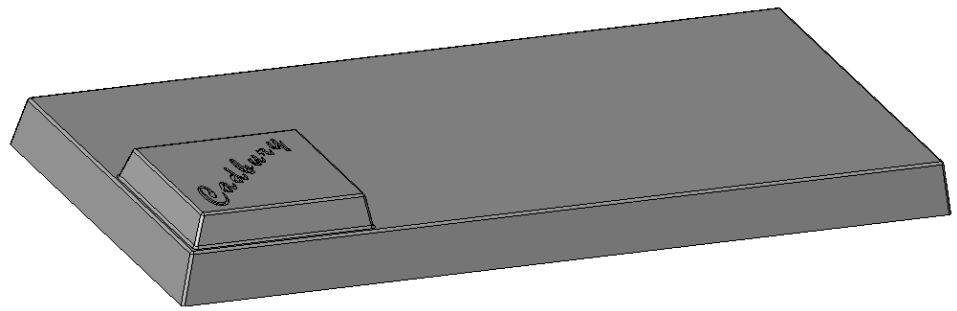
|	
Patterns	**Patterns** are used when creating multiple instances of one or more features.
Linear Array	This can be a one or two directional array.
Where to find it	On the features toolbar click the **Linear Pattern** tool [Linear Pattern] *or* From the **Insert** menu, choose **Pattern/Mirror, Linear Pattern…**

Select the linear edge of the base
in front as **Direction 1,** with a
Spacing of **25mm** and
Number of Instances = 4
Select the linear edge on the side
as **Direction 2,** with a **Spacing** of **22mm**
and **Number of Instances = 2**

To select **Features to Pattern** click in the
**Features to Pattern Window**, it turns pink.
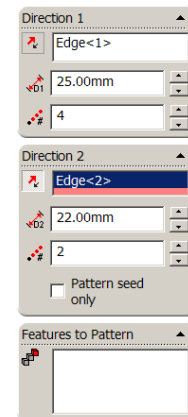
**Flyout Feature
Manager Design
Tree**

Expand the **Feature Manager Design Tree** by
clicking on the plus '+' sign next to the file name
on the top left hand side of the **Drawing Area.**

It expands as shown on the right.

Choose the Chocolate block, extruded text and
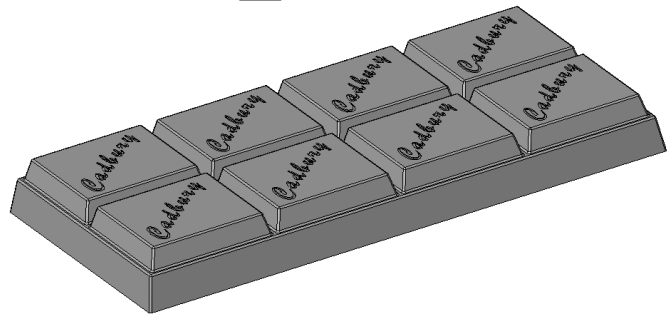the fillet1 features as features to pattern

A preview is displayed in the drawing area.
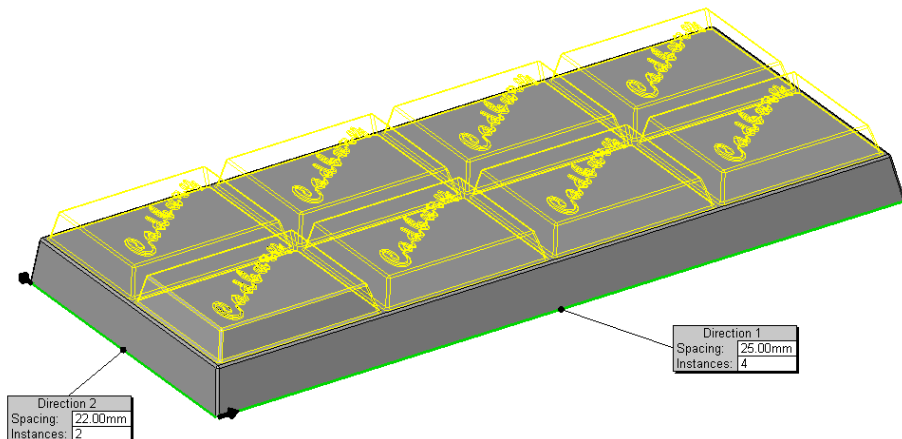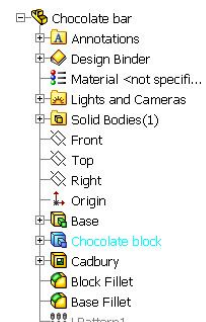
Reverse Direction   If necessary; select **Reverse Direction** next to each **Pattern Direction,** to set the direction shown.

Choose **OK**

Adding an Appearance to the Chocolate Bar

Right click on any face of the model and choose

Appearance Callout

A drop-down menu appears with the various aspects of the model in hierarchical order.

Click on the colour swatch next to the part name, Chocolate Bar.

The **RealView/PhotoWorks Tab** appears on the right hand side of the screen and the **Colors Appearance manager** on the left.

A **preview window** appears to preview the resulting render.

Within the RealView/PhotoWorks tab we can access appearances, scenes, decals and lights folders.

Choose **Appearances.** The categories are listed on top with the various options within each category displayed below.

Choose an appropriate colour from the colour swatch. Select **OK**
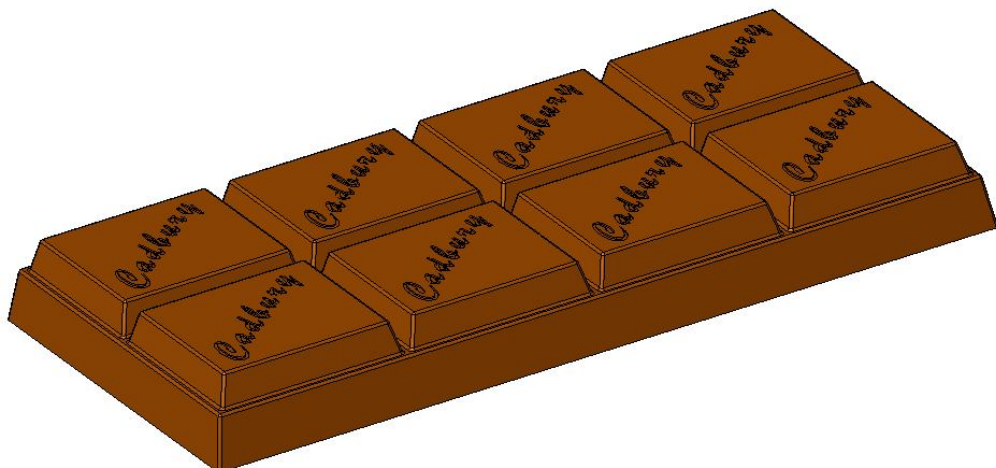
Other Possible Pattern Options

Pattern

NAME: _____   DATE: _____

DESIGN & COMMUNICATION GRAPHICS

Linear Pattern