INDIAN SCHOOL AL WADI AL KABIR

CLASS IX	DEPARTMENT OF COMPUTER SCIENCE	
TOPIC : Different components of Scratch's programming environment		Handout 5

SCRATCH PAINT EDITOR

Scratch has a built-in Paint Editor that you can use to create or edit sprites, costumes, and backdrops. This editor supports two drawing modes: bitmap graphics (also called raster graphics) and vector graphics. In this appendix, you'll learn the difference between these modes and how to use the Paint Editor to create your own program features.

Bitmap Mode

When you create a new sprite or costume, the Paint Editor starts in bitmap mode, as illustrated in Figure 2.

If you have used programs like Microsoft Paint, you're probably famil-iar with many of these options. You may be able to guess what the buttons in Figure 2 do, but if you can't, each button has a *tool tip* that describes its function. You can see the tool tip by hovering the mouse pointer over any button. The following sections provide more information, but the best way to get familiar with this tool is to try it out as you read along.
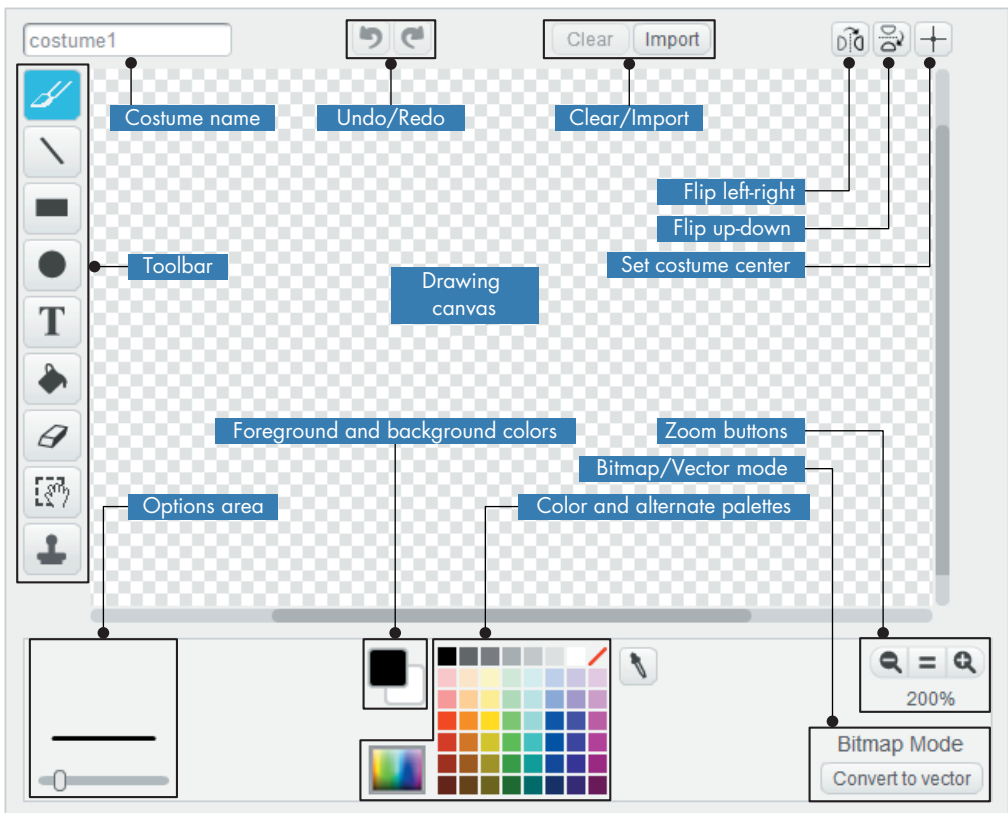
Figure 2: Scratch's Paint Editor in bitmap mode
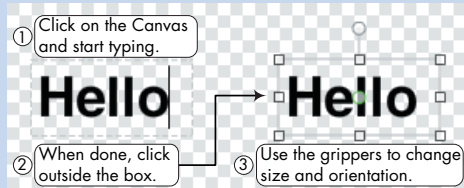
Toolbar and Options Area

The toolbar and the options area provide the tools you need to draw on the Canvas. Just click the button for the tool you want, adjust the settings in the options area, and start drawing.

Table 1 provides a description of each tool available from the toolbar along with the options you can change when you select it. Unless the description says otherwise, a drawing tool uses your current foreground color.

Table 1: Toolbar Buttons in Bitmap Mode

Icon	Function	Description
	Brush	Paint freehand. The slider changes the brush size.
	Line	Draw a line (SHIFT-drag for a straight horizontal or vertical line). Use the slider to change the line width.

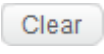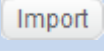| Icon	Function	Description
	Rectangle	Draw a filled or outlined rectangle (SHIFT-drag for a square). You can choose a fill style (solid or outlined) and change the outline thickness with the buttons shown below.
	Ellipse	Draw a filled or outlined ellipse (SHIFT-drag for a circle). You can change the fill style (solid or outlined) and outline thickness with the buttons shown below.
T	Text	Add text. Click anywhere on the Canvas, type the text you want when you see the cursor, and then click outside the text area. The Select tool (see below) automatically selects your text so you can change its size and orientation.

① Click on the Canvas and start typing.

Hello → Hello

② When done, click outside the box.

③ Use the grippers to change size and orientation.

Icon	Function	Description
	Fill	Fill a closed region with a solid color or gradient. Choose one of the fill styles (solid color, horizontal gradient, vertical gradient, or radial gradient) shown below. Gradients blend from the selected foreground color to the selected background color.
	Eraser	Erase with freehand strokes and adjust the eraser size with the slider. The areas that you erase become transparent.
	Select	Select a rectangular region and move it to a new location. Press the DELETE key to remove the selection, or use SHIFT-DELETE to crop (that is, delete the nonselected part of the image).
	Stamp	Select a rectangular region to create a copy of it. Drag the copy and place it where you want.

Other Paint Editor Buttons

The Paint Editor also contains a number of buttons that don't draw. The function of each of these buttons is summarized in Table 2.

Table 2: Button Controls in the Paint Editor

Icon	Function	Description
	Undo/Redo	If you make a mistake, you can click Undo as many times as needed to reverse your most recent actions. Click Redo if you want to restore those actions.
Clear	Clear	Click this button to remove all content from the Canvas.
Import	Import	Click this button to open an image from a file and add it to the Canvas.
	Flip	Flip the Canvas content (or just the current selection) horizontally or vertically.
+	Costume center	Clicking this button displays a set of cross-axes on the Canvas that represent the costume's center of rotation. Drag these axes to pick a new center of rotation.
	Zoom	Increase or decrease the view magnification of the Canvas. When the zoom is greater than 100 percent, scroll bars are used to pan around the Canvas. Zoom does not change the size of the image.

Color Settings

The color controls allow you to set the foreground and background colors of your drawing. These controls are described in Table 3.

Table 3: Buttons for Setting the Drawing Color

| Icon	Function	Description
	Current colors	This control shows the current foreground and background colors. Click the squares to switch the two colors.
	Color palette	Pick a color from this palette to specify a new foreground color. The transparent option is in the upper-right corner.
	Alternate palette	Switch between the default palette and the continuous color palette.

Drawing in Bitmap Mode: Some Practice

Let's put some of the tools described into practice by drawing a truck. Follow these steps to create the drawing:

1. Using the Rectangle tool, create two rectangles, as shown in Figure 3.
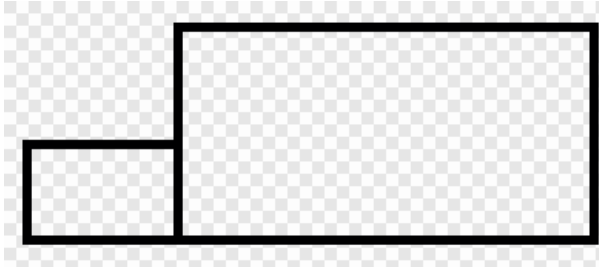
Figure 3: Create two rectangles using the Rectangle tool.

2. Use the Line tool to draw three diagonal lines across the corners of the two rectangles, as shown in Figure 4.
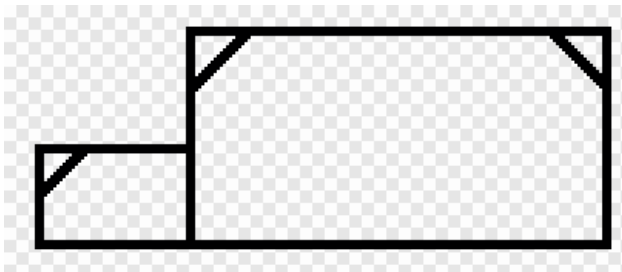
Figure 4: Use the Line tool to draw diagonal lines.

3. Use the Eraser tool to erase the parts of the rectangles that extend beyond the lines you just drew. Then use the Line tool to draw a vertical line as shown in Figure 5.
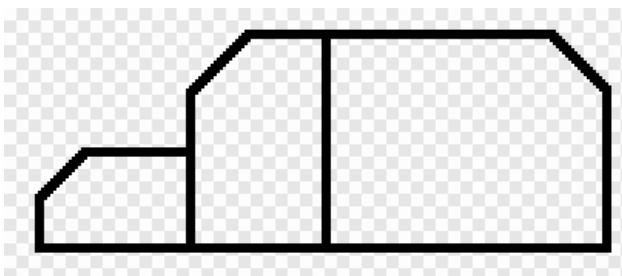
Figure 5: Use the Eraser tool to delete some parts of the figure and use the Line tool to draw a vertical line.

4. After you use the Ellipse tool to create a circle, create an identical copy of this circle with the Stamp tool. Move the two circles to be the wheels of your vehicle, as shown in Figure 6.
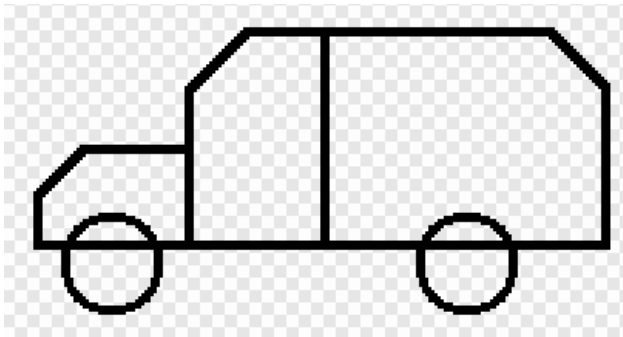

Figure 6: Use the Ellipse and Stamp tools to create two tires.

5. Use the Eraser tool to clean up the horizontal lines inside the circles, as shown in Figure 7.
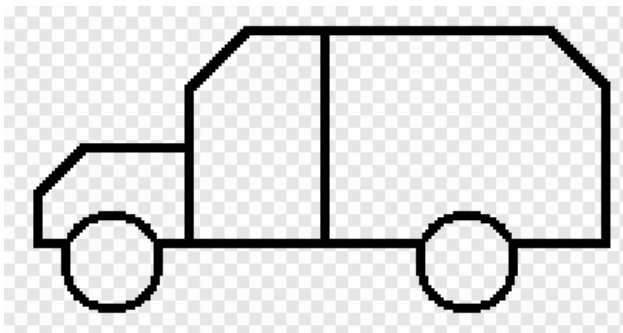

Figure 7: Use the Eraser tool to erase the lines inside the wheels.

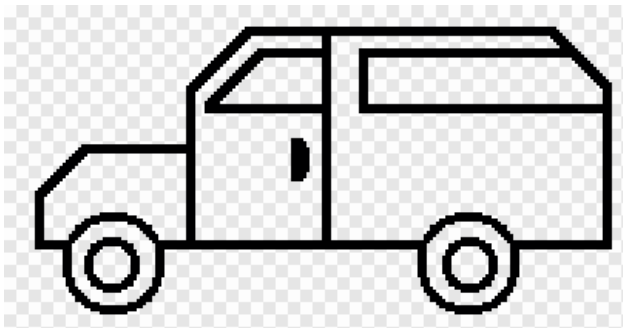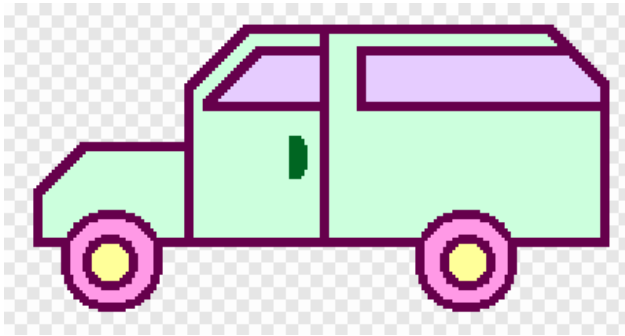6. Using the Line, Circle, and Stamp tools, finish the drawing as shown in Figure 8.

Figure 8: Use the Line, Circle, and Stamp tools to add the finishing touches.

7. Using the Fill tool, color the truck in any way you like. My finished drawing is shown in Figure 9.

Figure 9: Color the car using the Fill tool.