

## **Unit 2**

### **Creating and Modifying Images**

## **Lesson 1**

# **Introduction to the Basics of Creating and Modifying Images**

## Objectives

**Specific objectives (behavioral) by the end of this lesson the student will be able to:**

- recognize program of creating and modifying images (**Gimp**)
- use the Help menu to identify the contents of the creating and modifying images program interface.
- use some of the selection tools efficiently

## creating and modifying images Programs

The programs of creating and modifying images used to assist in designing, creating and modifying different images. It enables the user to modify photos or drawings. There are many of those programs which are a closed and open source programs.

### Activity (1)

- **Searching for some programs of creating and modifying images**
- **By the help of your teacher, surf the Internet to search for some programs of creating and modifying images**

- There are various programs to create and modify images

such as:



**GIMP**

*Open source*



**Adobe Photoshop**

*Closed source*

## Loading the GIMP program to create and modify images

The GIMP program is an open and free source that allows creating and processing images.

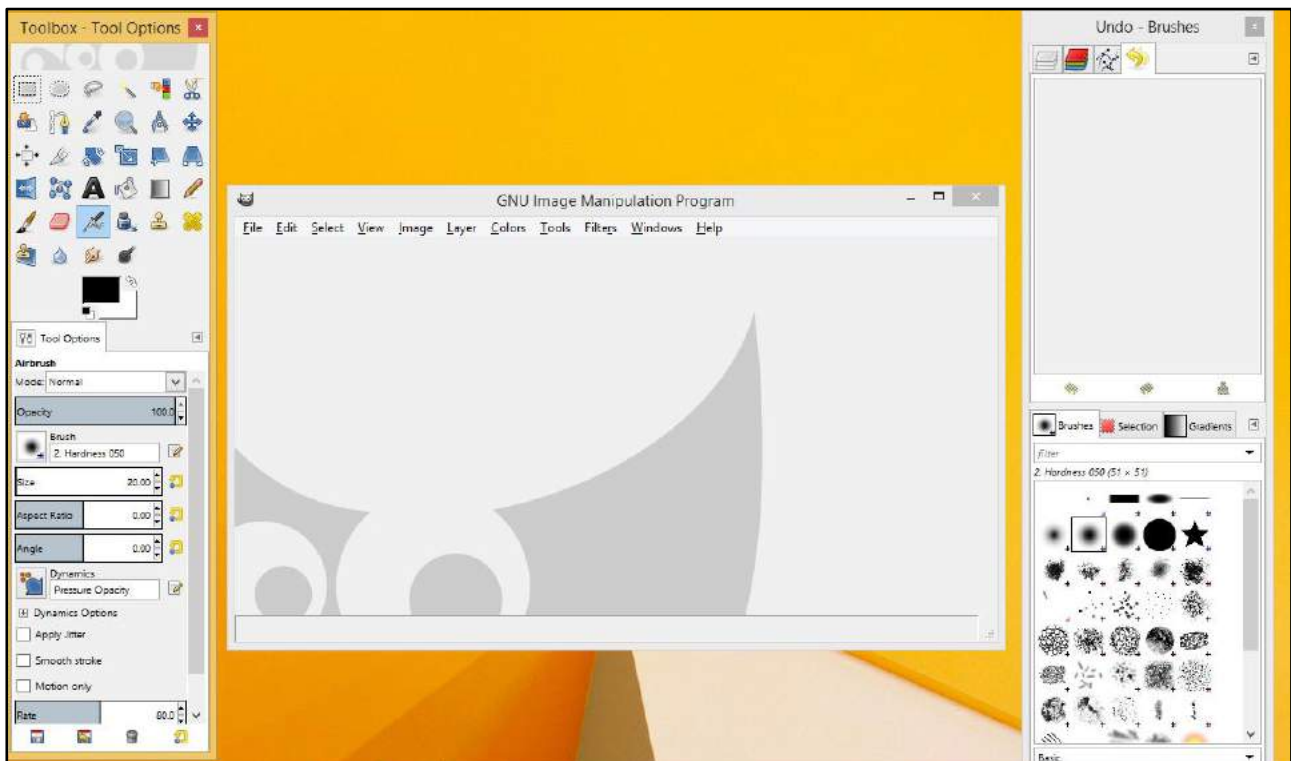
### Activity (2)

#### Load GIMP program

By the help of your teacher, download GIMP program.

The Interface of the GIMP program is available in two forms.

- Multi-window mode.
- Single-window mode

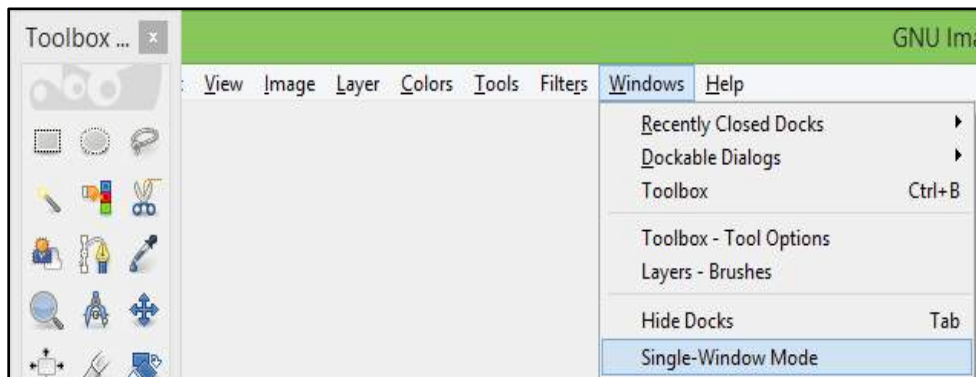


"The interface of the GIMP Program "A multi-window mode"

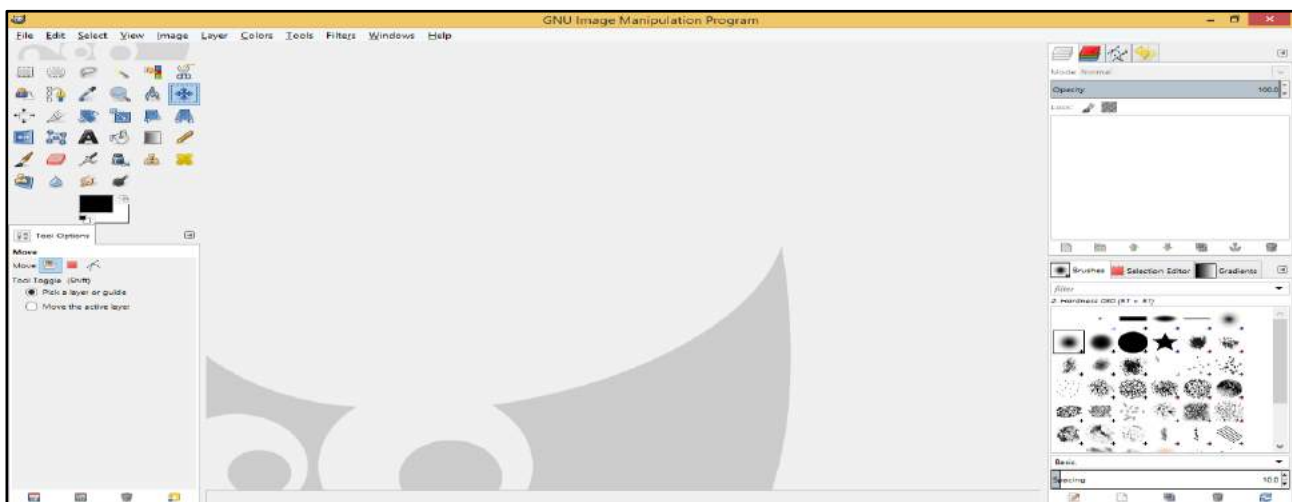
#### Important Note:

When opening the GIMP program for the first time, it is usually on (the multi-window mode).

- To facilitate the using the program, It could be in the (Single window mode from the Windows menu: → Single-Window Mode



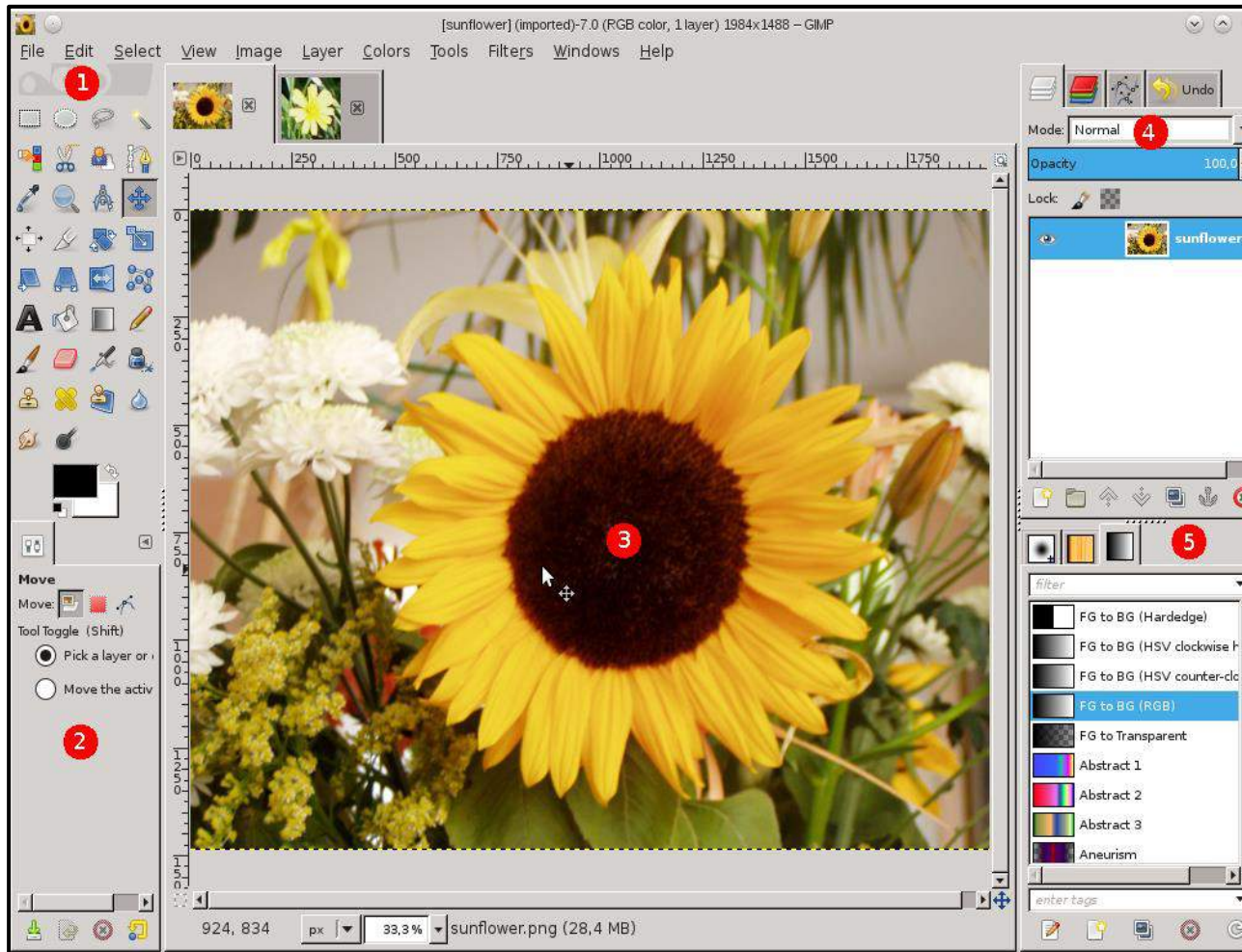
The program interface is shown in the mode (single window mode) as shown in the following figure:



**Note:**

After closing the program and reopening it,  
it remains in the (Single-Window Mode)

## Identifying the contents of the GIMP program interface



### "The interface of GIMP PROGRAM"

" Single-Window Mode" and opening one of its images .

### The GIMP program default Interface consists of :

#### 1.The Main Toolbox:

The "tool box" consists of many tools such as the selection tools, back and front color tools....

#### 2 .The Tool options dock:"

It appears below the tool box and the options of the current tool (the selected) is shown in it.

### 3. "Image windows:

when opening more than one image, each image appears in a window which you can navigate between them.

4. **(The Layers/Channels/paths/Undo) dock:**It contains several classifications, such as the **Layers** tab.

5. **(Brushes/Patterns/Gradients) dock:** It contains the classification of **Brushes**, Forms tab, **Gradients** color schemes tab.

### Activity (3) (enrichment)

#### To learn more about the program interface..

By the help of your teacher,

Open the program, to know more about the **GIMP** program do the following:

- 1- **Move** the mouse pointer on the tool required to be known and wait for moments, the **tooltip** related to it is shown as well as its shortcut key .
- 2- **To** know more about the tool select the tool, click **F1** from the keyboard to open the **Help** of this program. (*bearing in mind to have your computer connected to the Internet*).

### Using the F1 "help" to identify the contents of the Program Interface (enrichment)

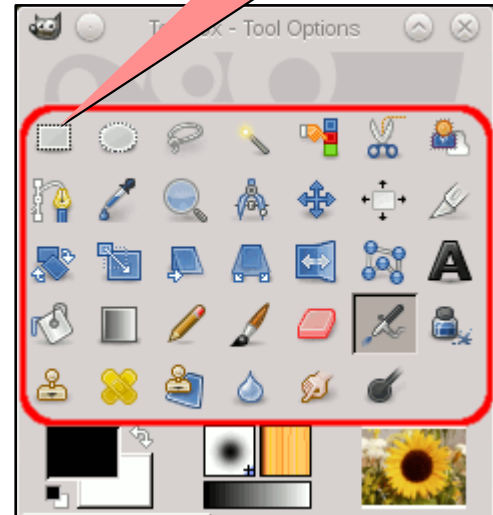
**The Main Toolbox** is considered the program main window contents which consists of many tools such as the selection tools .Through the Help which appears by clicking **F1** from the keyboard you can identify the different contents of the program interface as well as get more information.



**Activity (4) (enrichment)**

By the help of your teacher, open the **GIMP** do the following:

- 1- Click on one of the tools like "**Rectangle**"
- 2- Read the note about it .
- 3- Click on **F1** to show the program Help.
- 4- Identify some of the selection tools through the program Help.

**Important notes: (enrichment)**

- 1- In the case of closing one of those boxes or tabs (tool box, selction tools box,....) It can be restored through the **Windows** menus → **Recently Closed Docks**
- 2- To add , close or move one of the tabs in the box, click on the top right corner to open a drop-down menu and choose the required one.

For more information on the **GIMP** program to create and process images visit the link <http://docs.gimp.org/2.8/en> of the program

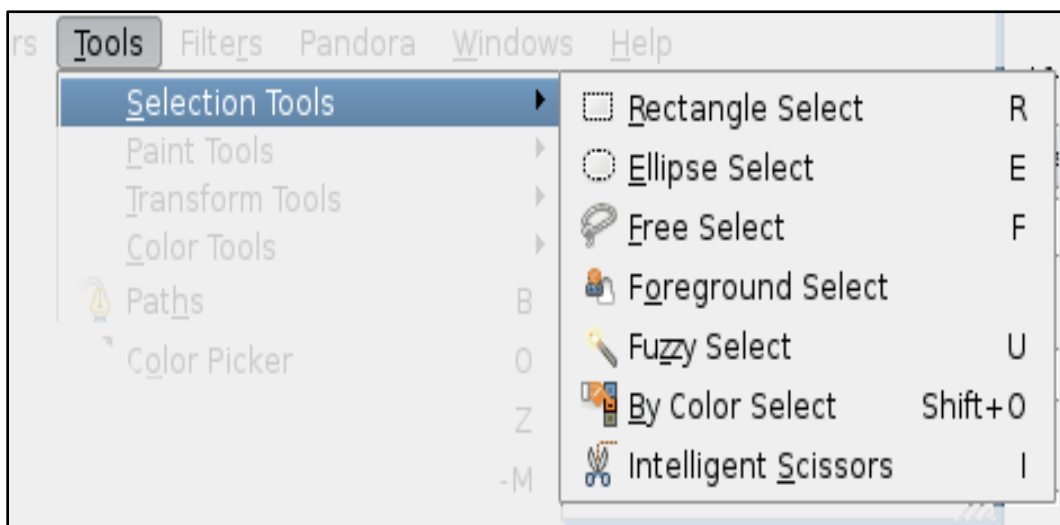
# Selection Tools

## Selection Tools

The selection tools are used to select a part or more of the image to deal with, like delete, cut, copy, paste, change the color of the selected part in order not to change the whole image.

There are many selection tools used to specify part of the image, each one of them has a specific way to use it. The selection tools are shown in **The Main Toolbox** you can also access it through the **Tools** menu

From the **Tools** Menu select **Selection Tools**



## 1-Rectangle selection Tool

Choose the selection tool "**Rectangle**" by clicking on the tools box.  
To select, click by pushing the image in the selected place so a rectangle is drawn as shown in the image



**Tool Box**



**Select the image with the Rectangle tool**


### Activity (5)


#### Select part of the image with the rectangle tool.

By the help of your teacher, open the file of the previous image from the folder "**Images**" and do the following:

- 1- Use the selection tool "*Rectangle*" to select the part of the image.
- 2- Move the cursor inside and outside the selection. observing the shape of the cursor.
- 3- Click by pushing when the shape of the cursor is changed.
- 4- Deduce the difference between the different shapes of the cursor .

**Note:**

1- The cursor in the selection area that takes the shape of  where you can move the selection rectangle.

2- the cursor outside the selection area that takes the shape of  by clicking and pushing the selection place is changed.

**Activity (6)**

**Deducing the aim of the selection.**

By the help of your teacher, do the following:

1- in the previous example, after using the selection tool "**Rectangle**" and select the image do the following:

- change the front color in of the tool box to Red
- choose the "**Pencil**" tool.
- try to draw the lines with the "**Pencil**" tool inside and outside the selection.
- write down your notes.-

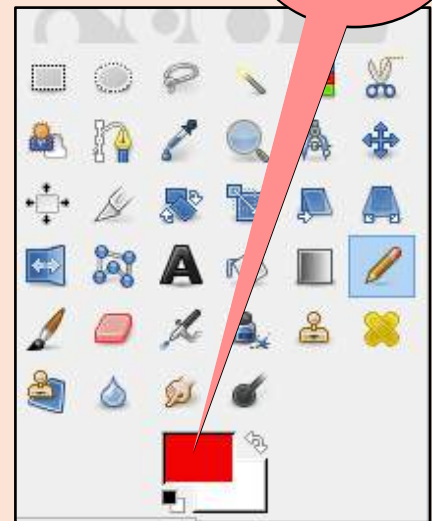
Deduce the aim of using the "**Rectangle**" selection tools.

**Note:**



- draw red lines in the selected part only.
- to finish the selection and exit:

From the **Select** menu Select **None** or( from the keyboard, click the **( Shift key + CTRL + A )** ).



**The Front Color**

## 2- Ellipse Selection Tool

The **Ellipse** select tool is used to select the oval shape of the image

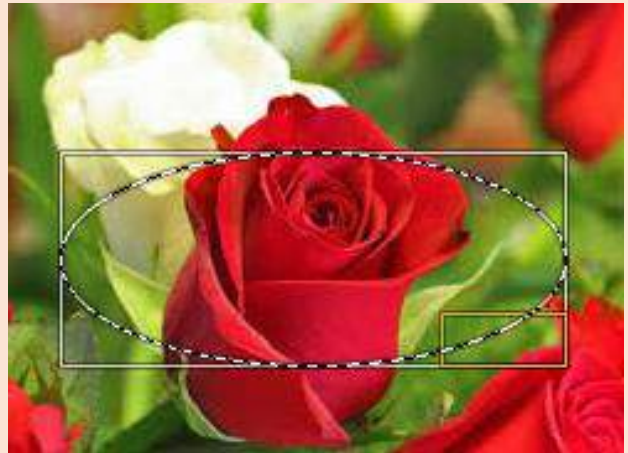


### Activity (7)

Select the oval shaped part of the Image using the **Ellipse** selection tool.

By the help of your teacher do the following steps:

- 1- **Open** the image file from the "images" folder.
- 2- **Select** the **Ellipse** selection tool.
- 3- **Select** part of the image using the **Ellipse** selection tool.



The image after Selection

### 3- Lasso free selection Tool

The **Lasso** Free Selection tool is used to select an irregular part of the image in a free way.



#### Activity (8)

#### Select a part of the Image using the Lasso tool

By the help of your teacher, use a free selection tool to select a part of the image as shown in the image :

- 1- **Use** the image of the previous activity.
- 2- **Select** a part of the image using **Lasso** free selection tool
- 3- **from** the **Edit** menu choose Cut.

**Write down your notes.**



The image after Selection

#### Note:

- a selected part cut.
- to remove the selection, from the **Select** menu select **None**



## 4- Fuzzy Selection (Magic Wand) tool

The **Magic wand** tool or **Fuzzy Selection tool** is used to specify similar color schemes areas of the image.



### Activity (9)

Specifying similar color schemes areas of the image with the **Fuzzy** tool.

By the help of your teacher do the following:

- 1- Open the image file from the folder "images"
- 2- Select the similar color schemes of the Image using the **Fuzzy tool**.



The image after specifying using  
Fuzzy Selection



The image before Selection



## 5- Smart Scissors Selection tool

The **Smart Scissors** selection tool is considered a useful tool when trying to specify an area specified or distinguished with a clear and strong color where the colors of the borders are changed in a clear manner

To use this tool, click on the points by pushing the area with distinguished color from the rest of the other ones.



### Activity (10)

#### Specifying part of the image tool using the **smart Scissors**

By the help of your teacher ,do the following steps:

- 1- **Open** the image file from the folder "images."
- 2- **Use** the **Smart Scissors** to make points by clicking and pushing on the area of distinguished color from the rest (the borders of the flower) as shown in the following figure:



The image while specifying it



The image after completing specifying it.

## Remember

The **GIMP** program is an open and free source program that allows creating and processing images.

When opening the **GIMP** program for the first time it is usually on (the multi-window mode).

- To facilitate using the program, it could be in the (Single window mode from the **Windows** menu → Single-Window Mode

The GIMP program default Interface consists of :

1. The Main Toolbox .
- 2 . The Tool options Dock.
- 3 . Image windows.
- 4 . (The Layers/Channels/paths/Undo) Dock.
5. (Brushes/Patterns/Gradients) Dock.

To know more about the tool select it, click **F1** from the keyboard to open the **Help** of this program

-To restore any closed tabs:

**Windows** menu → **Recently Closed Docks**

- The selection tools are used **to select a part or more of the image**. use the selection tools to select one or more of the image,

- The selection tools ( **Rectangle** tool, **Ellipse** tool, Free Selection (**Lasso**), **Magic Wand** tool or **Fuzzy Selection** and **Smart Scissors** )



## Questions and Exercises

### Question1: Mark ( √ ) on the right statement and ( x ) on the wrong one:

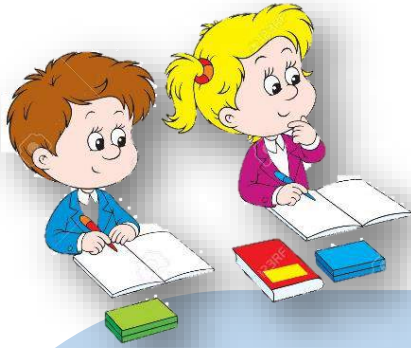
- 1- On opening the **GIMP** program for the first time ,the program is shown in the multi *window-window* mode (    ).
- 2- For more information about one of the tools ,click **F5** from the keyboard (    ).
- 3- Use the "**Selection**" tool to draw the image freely (    ).
- 4- The "**Pencil tool**" is considered one of the selection tools (    ).
- 5- The "**Ellipse**" selection tool is used to select an oval shape of the image. (    ).

### Question2: Complete the following:

- 1- To delete the selection, Choose .....
- 2- The "**Lasso**" Free Selection tool is used to select .....
- 3- The "**Magic wand**" tool or "**Fuzzy Selection**" is used to select .....
- 4- The "**smart Scissors** " selection tool is used to select.....

Answer questions through:

MS Word program in the file of "answers of the first lesson" in  
(The template of Answers and projects).



**A question to prepare for the next lesson:**

**After identifying some of the selection tools and how to use them,**

**How can you use the selection tools to create a new image?**

## **Lesson 2**

# **Designing and Creating New Images**

## Objectives

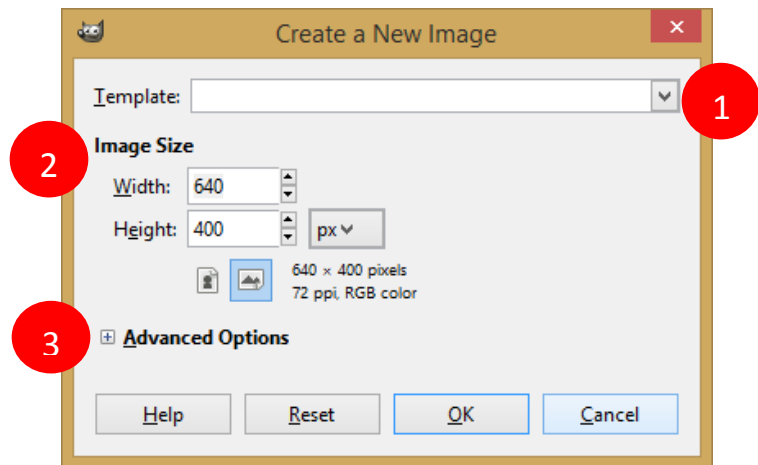
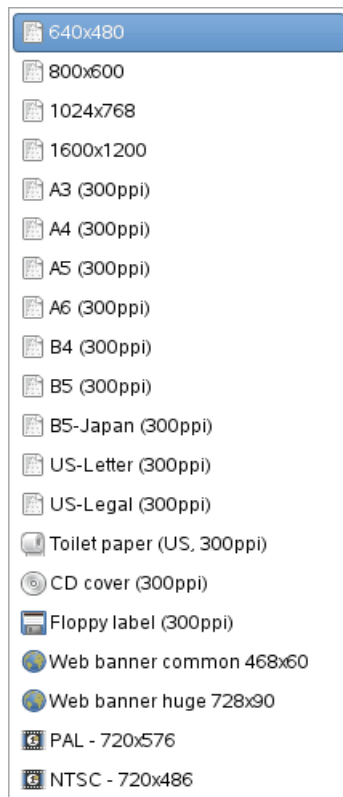
Specific objectives (behavioral) by the end of this lesson, a student will be able to:

- \* create a new image file.
- \* design simple drawings.
- \* save the image file and all its data using the option Save.

## Create a new image file (File menu → new)

To create a new image file (**New Image**) from the **File** menu choose **New**, a dialogue box appears which requests the dimensions of the new image (**length** and **width**), its resolution, color scheme and its filling color

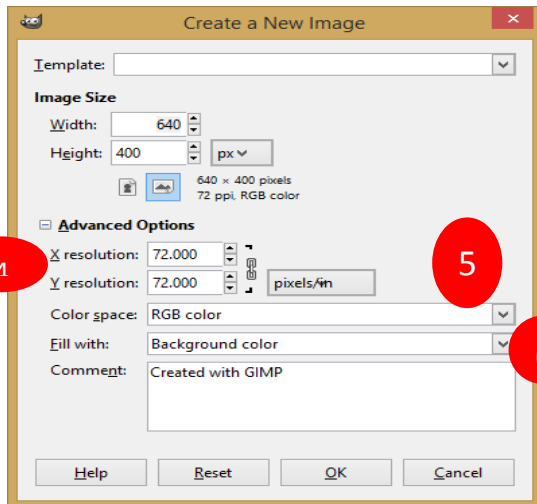
To create a new image file **File menu** → **New**



The dialogue box of creating a new image

**1-Template:** Templates are ready made designs previously prepared of the dimensions and the resolution of the picture. by clicking on the drop down list a template appears to select from instead of selecting manually.

- 2- **Image Size:** To identify the dimensions of the new image (**length** and **width**) click on the arrows .
- 3- **Advanced Options :** by clicking on **+** sign The rest of the dialogue box appears as follows:



The dialog box to create a new image

- 4- **X resolution and Y resolution:** This is used to determine the image resolution when printing (and it does not affect the picture dimension)
- 5- **Color Space:** This is used to determine the Image color system **RGB** using **red**, **green** and **blue** colors **or** that of the grayscale using black and **white** colors and the gradients of grey between them.
- 6- **Fill with:** issued to specify the new image filling color which can be:
  - **Background Color** which appears in the **Toolbox**.
  - **Foreground Color** which appears in the **Toolbox**.
  - **White** filling the image in white color.
  - **Transparency** the transparency of the image is to make the background of the image transparent.



**Create** a new image file using **Template** to specify the dimensions, background color and the filling color of the new image.

**Activity  
(1)**

By the help of your teacher, create a new image of (600 X 800) and fill its **background color**.

The color of the current background

In the opposite figure the color of the background is shown in white.



background is shown in white.

-to choose another color of the background click on the toolbox of Background Color in the dialogue box.

-To open a dialogue box to change the background color "**Change**



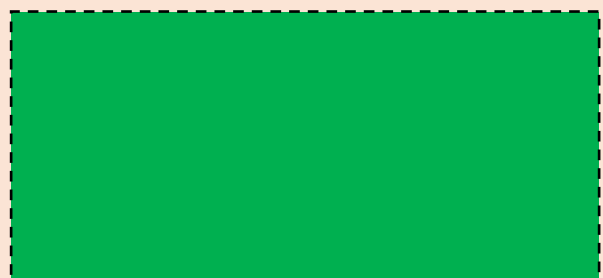
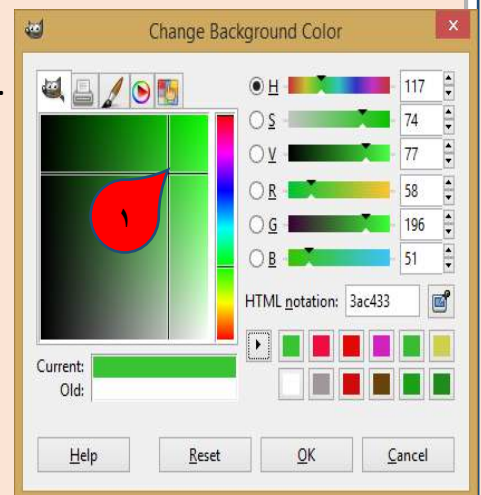
**Background Color"** do the following:

- 1- **click** by pulling to change the current background color.
2. **Current:** Is the color of the current background.
3. Click "**OK**".

- From the **File** Menu Choose **New**.

A dialogue box of a new image appears to choose the following:

- From **Template** Choose **600 X 800**
- From **Fill with** Choose **Background Color**.
- Click "OK".
- The new image is shown in this Figure.



The new image in the image window

## Design simple Drawings

### Activity (2)

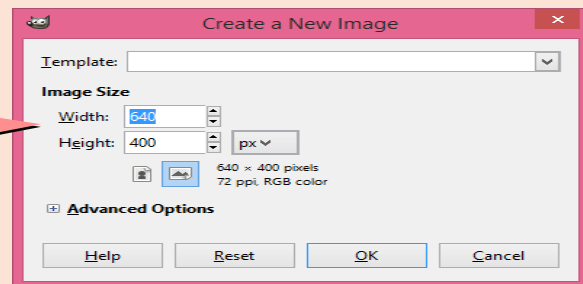
By the help of your teacher use one of the selection tools to try implementing the next drawing:



### Steps of the activity

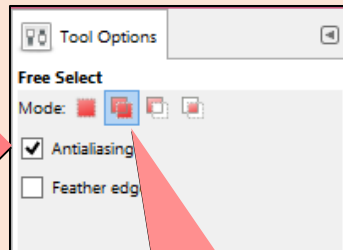
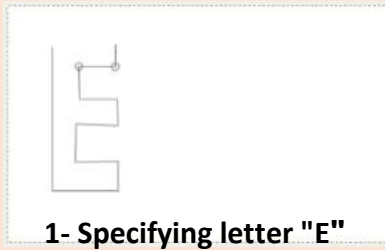
-Create a new file from the **File** menu and select **New**, a dialogue box appears to select the dimensions of the new image.

Specify the  
dimensions of the  
new image



Choose the **"lasso"** free selection tool to draw the abbreviation "EG" as follows:

- 1- To draw the first letter "E" ,click by pulling the free selection tool until the completion of drawing the letter.
- 2- To draw the second Letter "G", it should be noted that when you click by pulling to draw it the first letter "E" disappears.
- 3- To keep the previous specified selection of the **"Lasso"** free selection tool click on to **"Add to current Select"**.
4. Choose the color filling **"Bucket Fill"** Tool, click inside this selection to fill it with the front color.



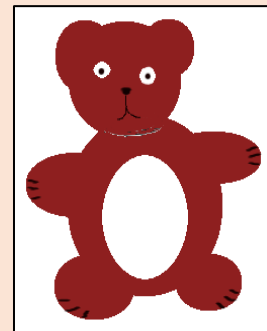
## Steps of the Activity

### Activity (3)

By the help of your teacher, draw the following figure:

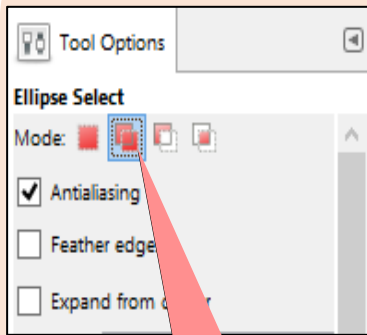
To draw the figure ,you must try the following:

- A careful look to the figure or image.
- Try to guess the tools that will be used.
- Identify the starting point.

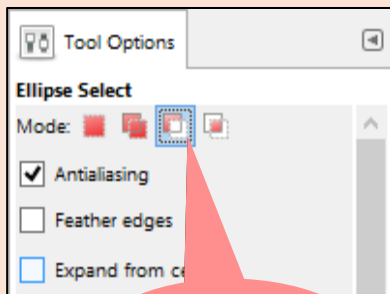
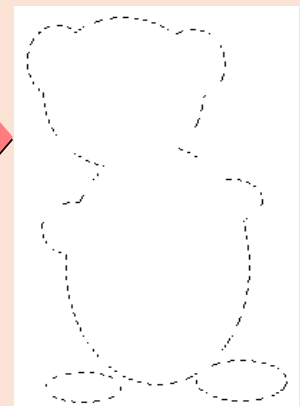
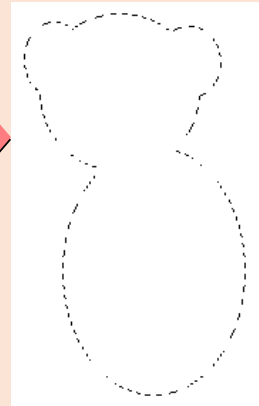
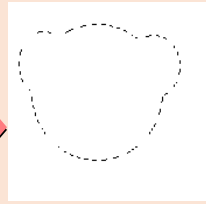


**Note** that: the figure is composed of a group of oval shapes, thus the tools **Ellipase**, **Bucket Fill** and **Pencil** Tools can be used.

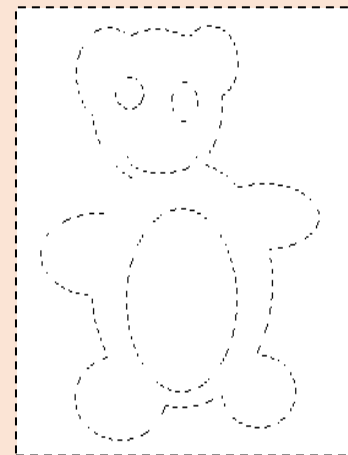
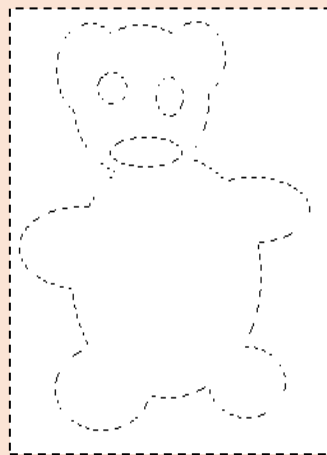
## Steps of the Activity



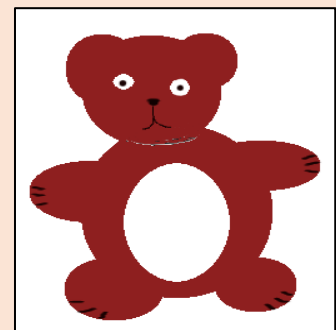
Add to the current Selection



The deletion of the current selection



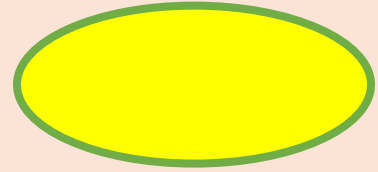
By using the **Bucket Fill**, the brush, **Pencil Tools** and the choice of the front color the drawing is completed.



**Activity  
(4)**

Draw an oval shape with **green** colored borders and fill it with a **yellow** color.

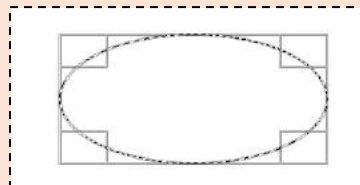
1. Open a new file image from **File menu** → **new**.
2. Select the **Ellipse** selection tool.
3. Select the **green** as front color from the tool box.
4. From the **Edit menu** choose **Stroke Selection**, a "**Stroke Selection**" dialog box appears
5. Select the line width from "**Line width**" from the dialog box. Click on "**Stroke**", the borders of the oval shape are drawn with the green color
6. Select the yellow as front color from the tool box.
7. From the **Edit menu** select **Fill with FG Color**; the selection is filled with the front color with yellow.



The following figure shows the implementation steps:



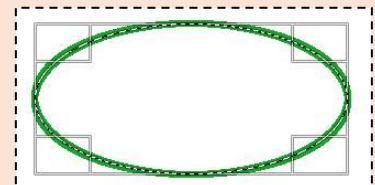
**Step(1)**



**Step(2)**



**Step(3)**



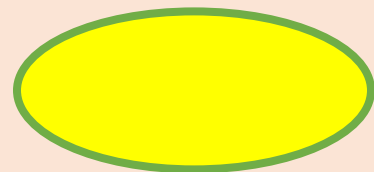
**Step(4)**



**Step(5)**



**Step(6)**



**Step(7)**

**Activity  
(5)**

By the help of your teacher try drawing the following:



Using the following tools:

- **Ellipse Select** tool.
- **Pencil** Tool.
- The **Lasso** free selection tool.
- **Bucket Fill** Tool.

## Save Image

After finishing the drawing the image, the stage of saving it in the file comes.

Save Image through the command **Save** from the **File** menu:

The command **Save** is used from the **File** menu, since the **GIMP** program offers the extension **XCF** to the image file, to save all the information about the image (Layers. Transparency) This extension is useful in case of reopening the file of the image or modifying it.

## Remember

create a new image file through: **File menu** → New.

In the dialogue box to create a new image:

1-**Templates**: are previously ready-made designs prepared of the dimensions and the resolution of the image.

2-**Image Size** :to identify the dimensions of the new image (length and width) by clicking on the arrows .

3-**Advanced Options** : to create the new image

4-**resolution** : used to determine the image accuracy when printing

5-**Color Space**:This is used to determine the Image color scheme **RGB** or **grayscale**

6- **Fill with**: It is used to specify the new image filling color which can be:

-**Background Color**

-**Foreground Color**

-**White** filling the image in white color.

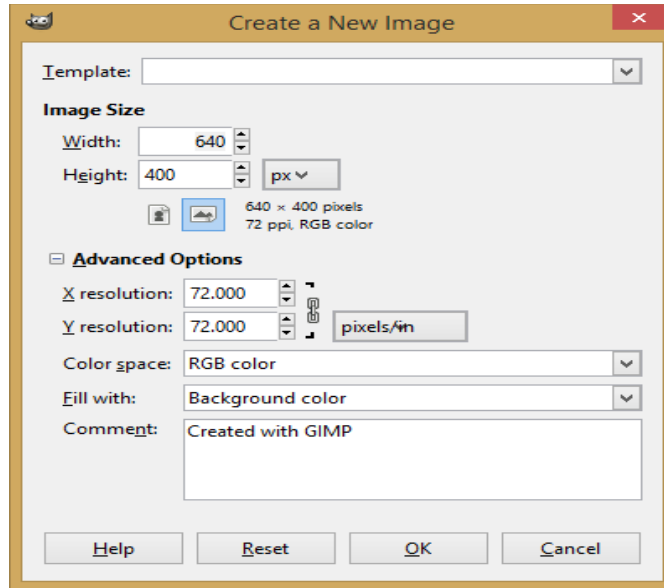
-**Transparency** to make the image background transparent.

When save the image by the command **Save** from the **File** menu:

The **GIMP** program offers the extension **XCF** to the image file, to save all the information about the image (Layers. Transparency. )..



# Questions and exercises



Complete the following statements:

**First:** To create a new image, the following steps should be followed

1. Identify the dimensions of the new image.
2. ....
3. ....
4. ....
5. ....
6. ....

**Second:**

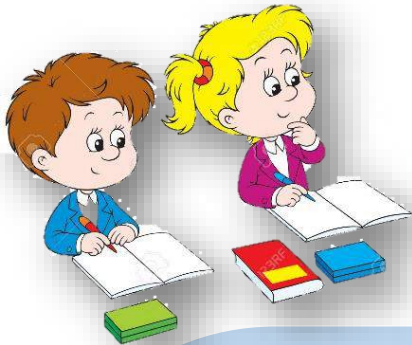
save command is used from the **File** menu, where the **GIMP** program offers .....

**Answer questions through:**

**MS Word program in the file of "answers of the second lesson" in**

**(The template of Answers and projects).**





**A question to prepare for the next lesson:**

**The drawing tools are used for different purposes like hand drawing and for gradation of colors.**

**What are the drawing tools? How could they be used?**

## Lesson 3

### Paint tools

## Objectives

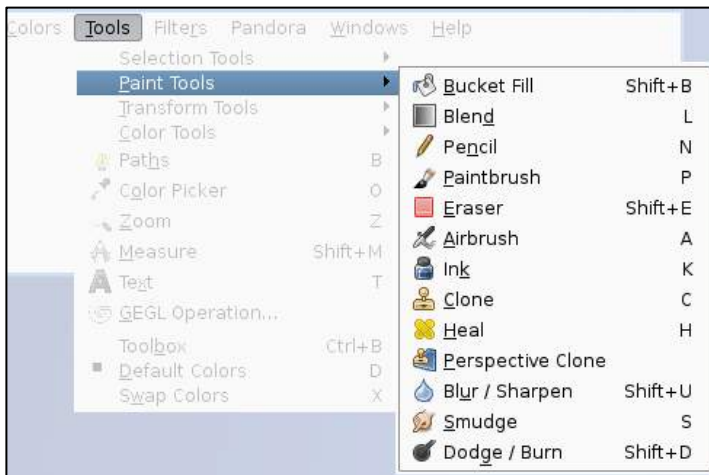
**Specific objectives** (behavioral): By the end of this lesson, the student will be able to:

- \* draw a free shape.
- \* draw gradient color scheme.
- \* copy part of the picture in the same layer.
- \* repair the defects of the image color scheme.

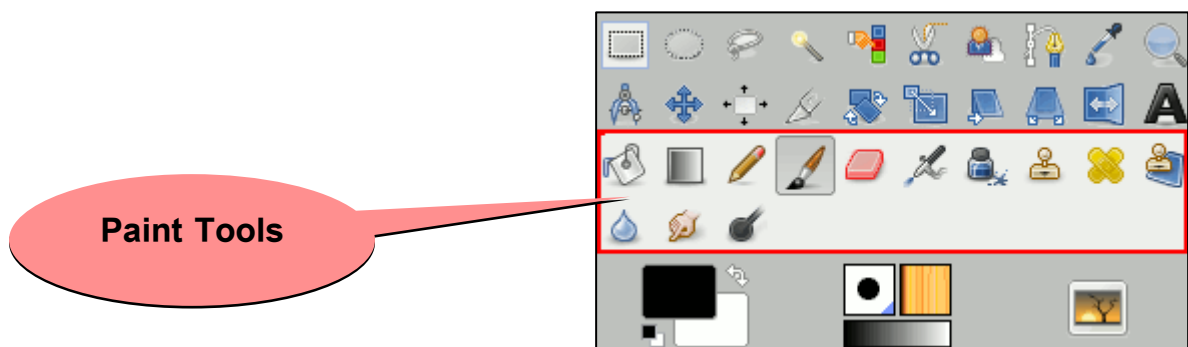
## Paint Tools

Paint tools are used for different drawing purposes such as free hand drawing, create gradient color scheme, merge the current color with the surrounding colors, copy part of the picture in another place in the same image...

The **Paint Tools** that can be accessed from the **Tools** Menu



Or from the Tools Box



Paint Tools

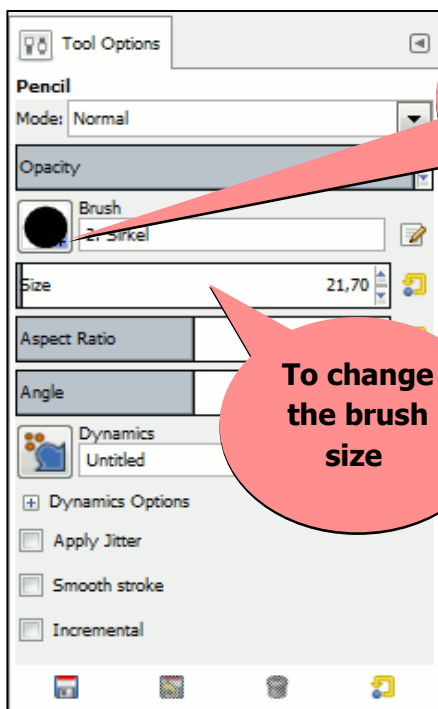
## 1- Pencil Tool

The pen in the "Pencil" tool is used for free hand drawing

### Activity (1)

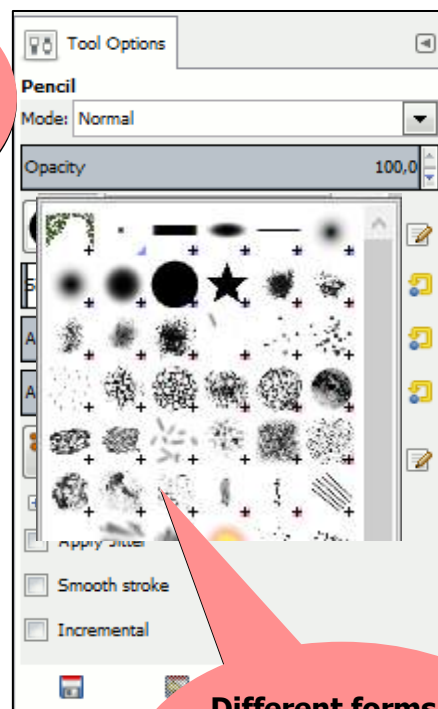
By the help of your teacher, identify the options tool of the "Pencil tool", to find out how to change the size and the shape of the brush as well as other uses.

- choose the shape of the brush.
- choose an appropriate brush size



click (+) to  
show more  
about the  
brush

To change  
the brush  
size



Different forms of  
Brush by clicking  
on any of them  
they are selected

Activity (2)

Drawing using the "Pencil" tool

By the help of your teacher, draw the following figure

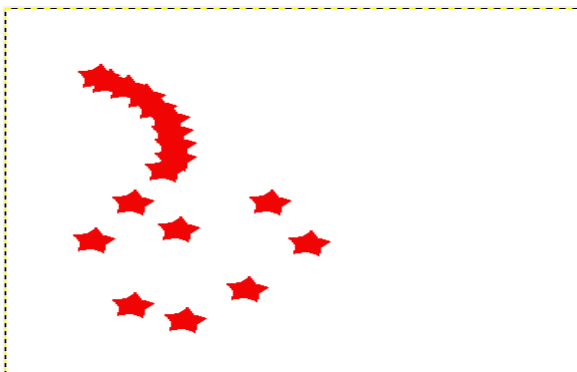
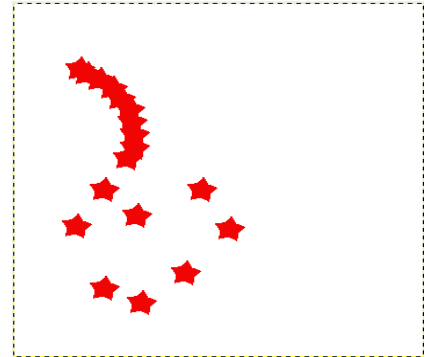
1- choose the "Pencil tool".

2- Modify the options of the tool to change the size and shape of the brush.

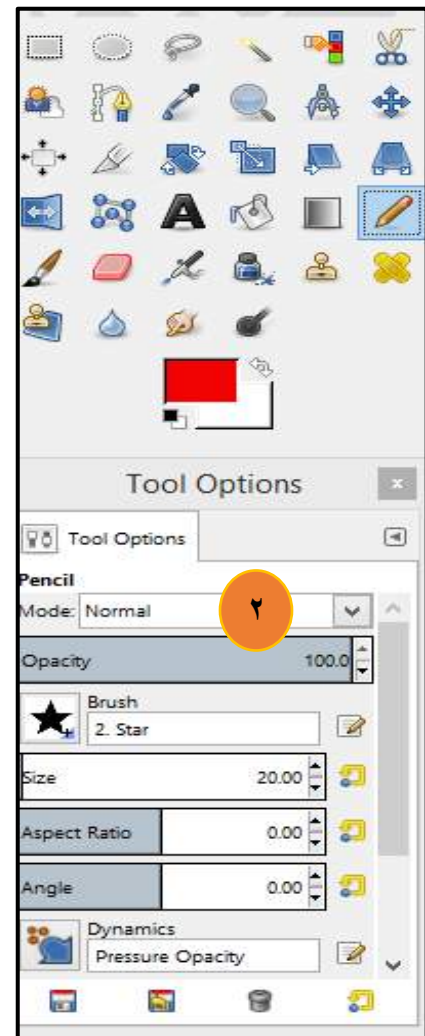
3- choose Foreground color "red".

1-choose the front color from the tools box.

2-select the shape and size of the brush used from the **Tool Options** of the pencil tool



The drawing in the image window



Pencil tool options

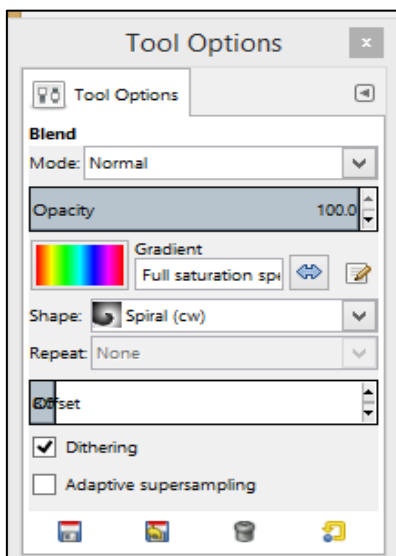
## 2- Blend Tool

The gradient color scheme **Blend tool** is used to make color gradation using the front or back colors. Modifications are made to the options of the tool to get the gradient color scheme required.

### Activity (3)

By the help of your teacher, do the following:

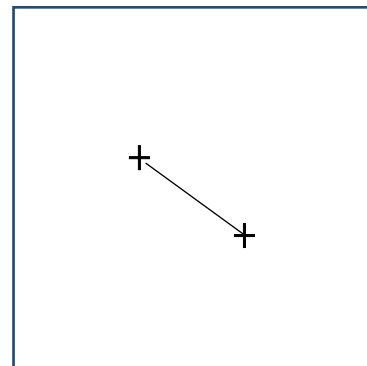
- create a new file.
- choose the **Blend** tool.
- choose the shape of the gradient color scheme.
- select the direction of the gradient color scheme.
- Create a gradient color scheme by clicking and pulling in the image window.



The options of the gradient  
color scheme



The gradient color scheme  
after drawing



By clicking and pulling to create  
the gradient color scheme

### 3- Smudge Tool

The **Smudge Tool** is used to mix the current color with the surrounding colors in the area of moving the tool.

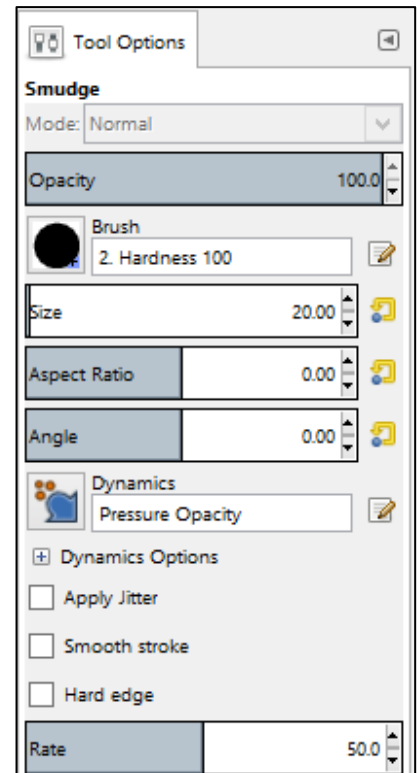
#### Activity (4)

By the help of your teacher, try to do the following:

- Use the Picture of the previous activity.
- Choose **Smudge** tool.
- Choose the (shape and size of the brush) from the tools options.
- by clicking and pulling the tool in the picture to mix the current color with the surrounding colors.



The picture after using the **smudge**




The Tool Options



## 4- Clone Tool

The **Clone** tool is used to copy part of the picture in another place (in the same image layer). It is used to modify and reform the images.

**The steps of using the Clone tool:**

- look at the picture to know the part required to be copied.
- Choose the **Clone** tool.
- stop the cursor at the beginning of the place required to be copied
- press the "**CTRL**" key on the keyboard (the cursor shape changes to )
- move to the required place to add the copied version.
- click by pulling to create the copied version.
- do not stop clicking and pulling till you complete the copying.



### Activity (5)

By the help of your teacher, use the "**Clone**" tool try to copy part of the picture as follows:



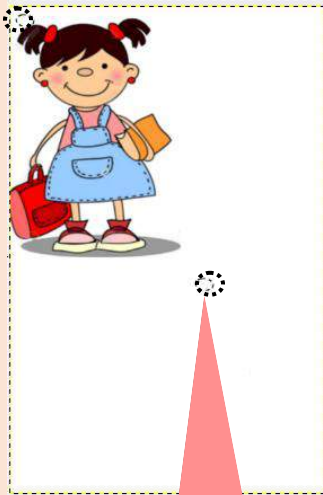
original image.



The picture after copying using clone tool

## Steps in implementing the Activity

1- Select the starting point of the copying by pressing the **Ctrl** key



2- Move to the place of putting new copy

3- Press by pulling the copied version then continue pressing till you finalize the copied version

### Steps of copying using the **Clone** tool

#### Important notes

- While copying click by pulling in the copying place till completing the required copied part.
- By stopping to click by pulling with the cursor then re-clicking by pulling, copying occurs from the selected starting point.
- To control the copying process change the size and shape of the **brush** used from the **Clone** tool options.

**Activity  
(6)**

**By the help of your teacher, try to do the following:**

- Check the picture 1 and picture 2 well to identify the differences between them.
- Use a **Clone** tool to make picture 1 (*original picture*) look like picture 2.
- Use the **Smudge** tool to mix and blend the color with the surrounding Colors



picture 1 (the original image)



picture 2 the image after modification

**Steps in the implementation of the Activity**



**1**–Select the **Clone** tool, select the starting copying area then press **CTRL**



**2**–click by pulling using the **Clone** tool.



3-magnify the image using the **Zoom** tool to best see the details



4-Move the rest of the image by clicking on the space bar + the cursor.



5- Modify the difference in the color scheme by using the **Smudge** tool to mix and blend the current color with the rest of the colors.





6- Final shape of the image.


**Activity  
(7)**

By the help of your teacher, Identify the usage of some of the drawing tools of the **Paint tools** such as:

**Paintbrush**  - **Eraser**  - **Ink** 

Use the **Ink** tool  like a *fountain pen* to control drawing distinguished borders and edges with the brush

Use the **Eraser**  tool to remove a coloring Space of a picture or a drawing.

Use the **Paintbrush** tool  to draw clearly

## Remember

Paint tools are used for different drawing purposes, such as free hand drawing, gradient color scheme creating, the current color with the surrounding colors merging, to copy part of the picture in another place in the same picture ...

### Paint tools:

The pen in the **Pencil** tool used for free hand drawing

The **Gradient color scheme Blend** tool used to make color gradation using the front or back color

The **Smudge** tool used to mix the current color with the surrounding colors

The **Clone** tool used to copy a part of the picture in another place (in the same image layer).




## Questions and exercises

Question One :: Mark (✓) by the correct answer and a (x) by the wrong one:

1. Use the **Pencil** tool to make a free hand selection. (     )
2. The **Clone** tool used to mix the current color with the surrounding colors in the space where the tool is moving. (     )
3. One of the selection tools is the **Blend** tool. (     )
4. The **Smudge** tool is used to copy part of the image in another place in the same image layer, it is well known for modifying and reforming images. (     )
5. The **Eraser** tool is used to delete a color space of a picture or an image. (     )

Question 2: Rearrange the following steps of using the **Clone** tool:

- ( ) stop the cursor at the beginning of the place required to be copied
- ( ) look at the picture to know the part required to be copied.
- ( ) move to the required place to add the copied version.
- ( ) do not stop pressing and pulling till you complete the copying.
- ( ) choose the **Clone** tool.
- ( ) press the "**CTRL**" key on the keyboard (the cursor shape changes to )
- ( ) click by pulling to create the copied version.

**Answer questions through:**

**MS Word program in the file of "answers of the third lesson" in**

**(The template of Answers and projects).**



**A question to prepare for the next lesson:**

**Sometimes we need to rotate or flip an image**

**What are the tools that help doing this? How can they be used?**



# **Lesson 4**

## **Transforming and Resizing Tools**

## Objectives

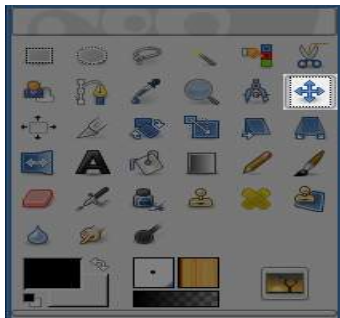
Specific objectives (behavioral) :By the end of this lesson the student will be able to:

- \* move the image.
- \* cut the image.
- \* rotate an image.
- \* add reflection to the image.
- \* resize the image

## Transforming tools

**Transform tools** are the tools used to change the image format either by transforming, resizing, changing the image dimensions .to access the tools of the **Transform tools** go to the **tools** menu, or through the square tools .There are more than one tool and each one has a function and a method of use.

### 1- Move tool



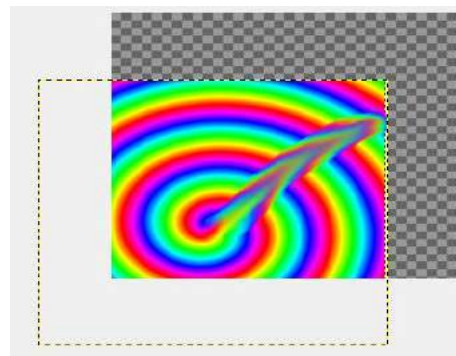
The **Move** tool is used for moving the image or the layers of an image to frame or text.

#### Activity (1)

By the help of your teacher, identify how to use the **Move** tool, use the image of the previous activity, by clicking and pulling the **Move** tool the image is moved.



The original Image

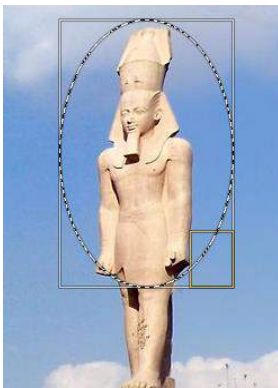


The Image after using the Move tool

## Activity (2)

**With the help of your teacher use the Move tool**

- Open the image file from the image folder, using one of selection tools, select the image.
- To move the selection, continue pressing ALT + CTRL till you move the selection.



## 2- Crop Tool

**Crop** tool is used to cut a part of the image.



### Activity (3)

With the help of your teacher, crop an image using **Crop Tool**.

- **Open an image file.**
- **Select Crop**
- **Drag and drop the image to select the needed part.**
- **Press Enter from the key board.**



original Image



select the part needed



image after crop

## 3- Rotate Tool

**Rotate** tool used to rotate an image

### Activity (4)

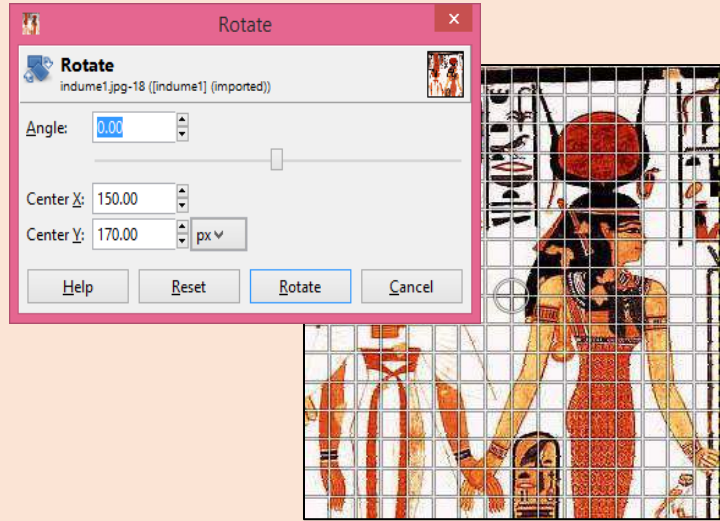
- With the help of your teacher, rotate an image using **Rotate Tool**
- **Open an image file.**
- **Select Rotate.**
- **Drag and drop to rotate the image.**
- **Press Enter from the keyboard after finishing.**



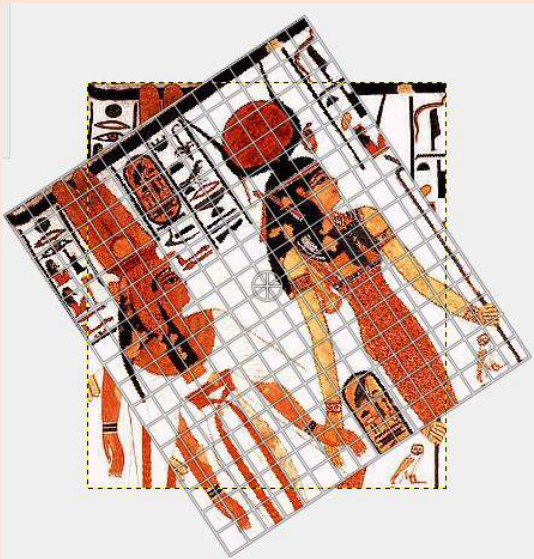
## Steps of the activity



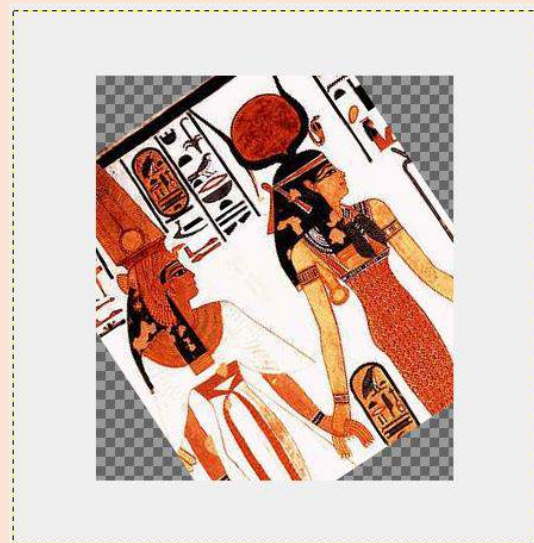
1- The original image



2- Select Rotate to show dialog box of rotate angle



3- Press and drag to rotate the image



4- Press Enter to finish Rotate.



## 4- Flip Tool

Flip Tool is used to flip horizontally or vertically an image.

### Activity (5)

With the help of your teacher, **flip** an image.

- Open an image file.
- to make horizontal or vertical flip, select Flip tool then from Tool Options dialogue box, select an option.



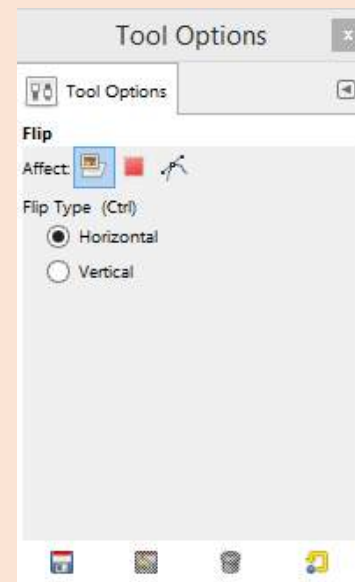
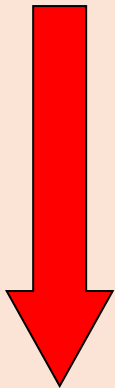
Original image



Horizontal Flip



Vertical Flip



Tool Options

## 5- Scale Tool

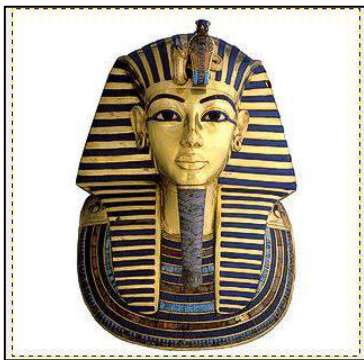
Scale Tool is used to change the dimensions of an image [length and width.]



### Activity (6)

With the help of your teacher, change the dimensions of an image .

- Open an image file.
- Select Scale Tool.
- Press on an image to show the dialog box to decide the dimensions and image corners.
- Drag and pull to change the dimensions of the image through the dialog box.
- Press Enter from the keyboard when you finish.



Original image



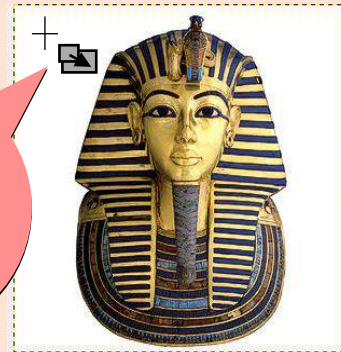
Image after changing dimensions



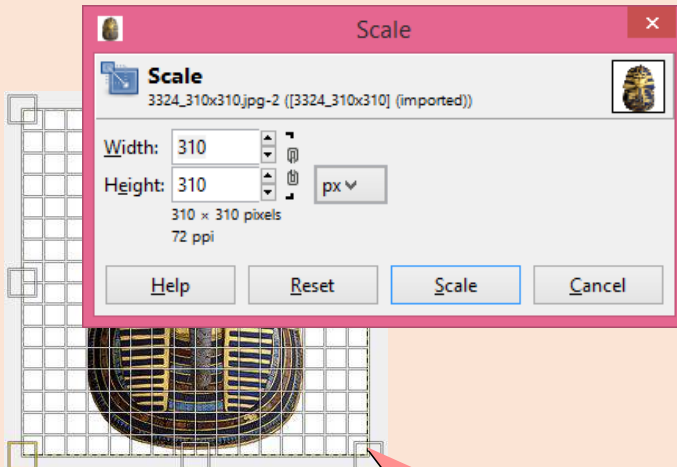


1-Original image

The pointer after selecting Scale

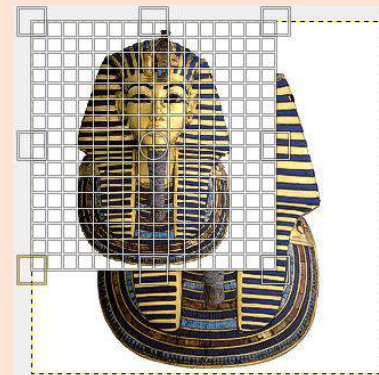


2- Select Scale to see this sign.

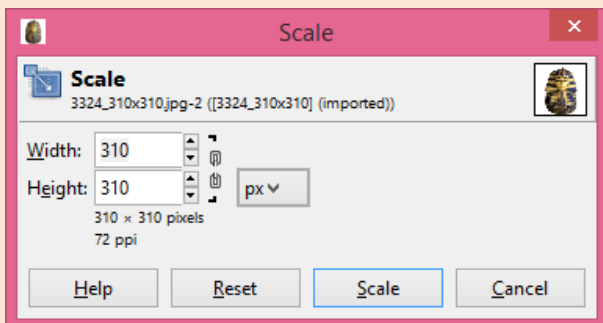


3- Press and drag to one point to change the dimensions or from the

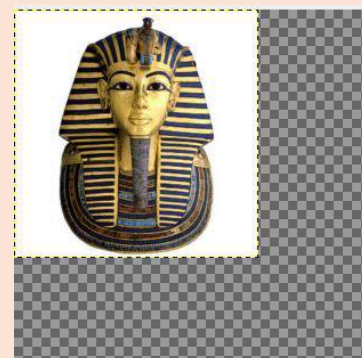
point to drag



4-Move the dialog box to see the dimensions.



5- Select Scale from the dialog box



6-Image after changing dimensions.

**Note:**

You can use **Crop** tool after changing the dimensions.



Image after changing dimensions

## Remember

Transform tools is used to change the shape of an image by moving or resize. The Transform tools can be used from the Tools menu, or from the dialogue box. There are different tools, each of which has a function and usage.

Transform tools:

- Move tool which is used to move an image or image layers or selection or text.
- Open an image file from the Image folder, Use a selection tool to select a part of the mage.
- To move a selection, press ALT + CTRL, continue pressing using the Move tool to move the selection.
- Crop tool is used to crop part of an image.
- Rotate tool is used to rotate an image.
- Flip Tool is used to horizontally or vertically flip an image.
- Scale tool is used to change the dimensions of an image.

## Exercises



### Question 1 – Tick (✓) or ( X)

- 1- Transform Tools are used to change the form of an image through move, resize or change dimensions. ( )
- 2- Move Tool is used to move an image or image layers or selection or text. ( )
- 3- To move, press Alt + CTRL and continue pressing using the Move tool. ( )
- 4- Rotate tool is used to crop an image. ( )
- 5- Crop tool is used to rotate an image. ( )
- 6- Scale tool is used to make horizontal or vertical flip of an image. ( )
- 7- Flip tool is used to make change an image dimensions [length, width]. ( )

### Question 2: Put the following steps in the correct order to use Scale tool:

- ( ) open an image file.
- ( ) Drag and pull at one corner to change the dimensions or from the dialog box.
- ( ) Press the tool on the image to show the dialog box to decide the image dimensions.
- ( ) Press Enter from the keyboard after finishing the dimensions.
- ( ) Select the Scale Tool.

( Answer is done through MS Word from the answer file in Answer

Template and Projects)



# Lesson 5

## Image layers

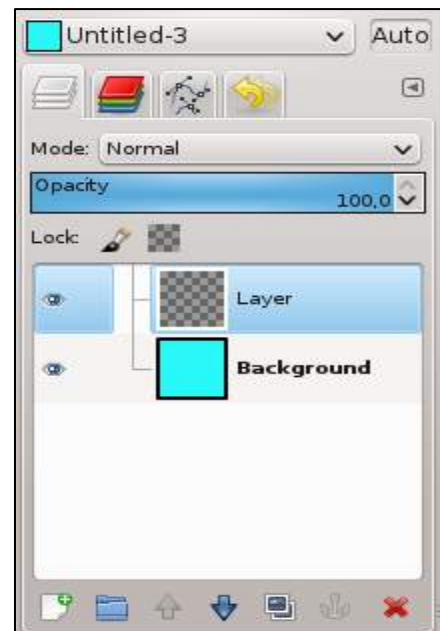
## Objectives

**Specific objectives (procedural) :By the end of this lesson, the student will be able to**

- recognize the concept of image layers.
- be proficient in the use of the image layers to create an image.
- modify an image using image layers.
- insert text over the image.
- export image file with an appropriate extension.

## Image Layers

There is "Layers" tab within tabs box (layers, channels, paths, undo), and uses the "Layers" tab to edit, add and control different picture layers, and can think of the image layers as slices are placed on top of each. Layers are used to assist in the development of the components and the details of different pictures so that every part or detail of the image in the layer mode, can address this part of the picture (scanning – rotation – identification ...) without affecting the rest of the image parts, representing the bottom layer (lower layer) background image "background" and come above the rest of the layers to contain the rest of the image details.

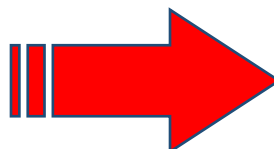


" The Layers, Channels, Paths, Undo History dock "

Image consisting of several layers is represented as follows:



The Image layers

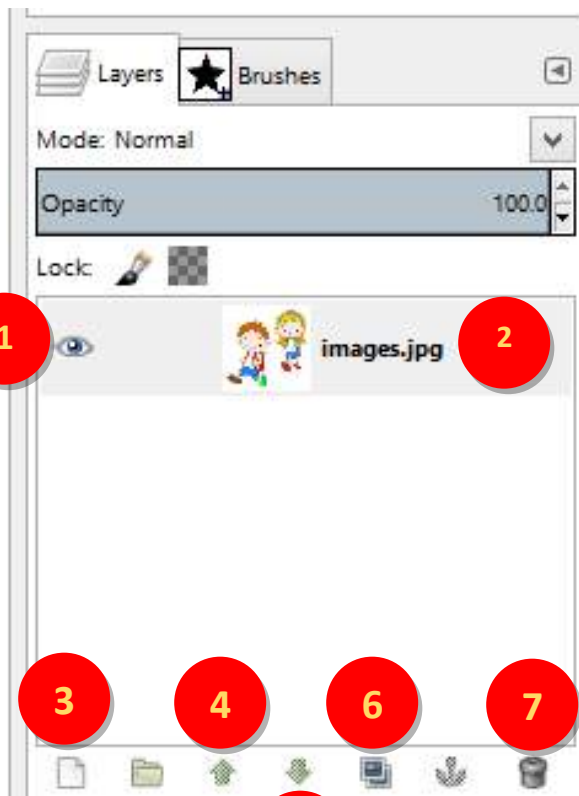


The image in its final

## Dealing with the Layers



You can get to the "Layers" tab through:

- The main interface of the program. Or
- Through **Windows menu → Dockable Dialogs → Layers**



The image in the images window

Tab "Layers"

- 1- Layer visibility –  to make the layer visible or invisible.
- 2- Layer thumbnail – is a mini format of the layer and the layer name appears next to it (and can be changed by clicking on it).
- 3- New layer  – to add a new layer

4- Raise layer  -to move the layer to the highest level.

5- Lower layer-  to move the layer to a lower level.

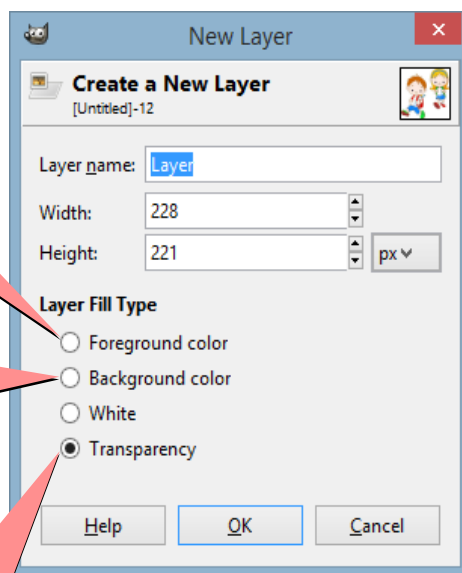
6- Duplicate layer -  to copy the current layer.

7- Delete layer  -to delete the current layer.

**Activity  
(1)**

With the help of your teacher, add a new layer:

- To add a new layer, click on the New layer in the "Layers" tab.
- To show the dialog "New Layer."
- Press OK, a new layer is added

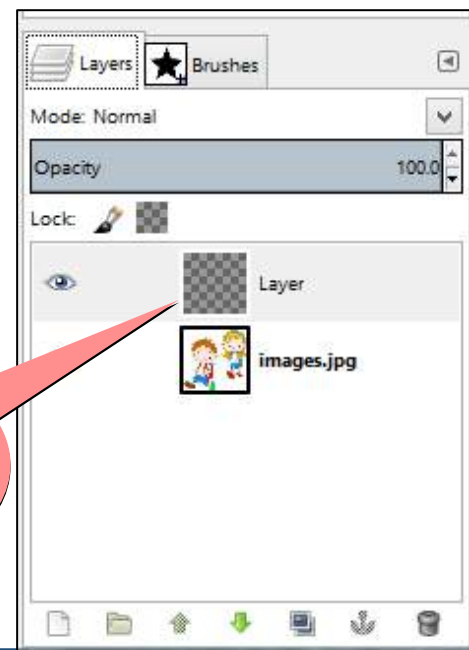


Foreground color for new layer

Background color for new layer

No Fill (Transparency)

Dialogue box for a new layer



New layer is transparent



**Note:**

to deal with the layer, it must be pressed to become the current active Layer.

**Activity  
(2)**

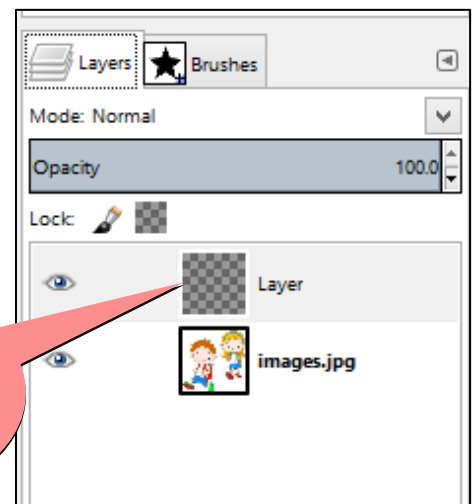
With the help of a teacher, choose one layer, mark the layer invisible:

–In the previous training, a layer is to chosen and pressed to become the current active layer.

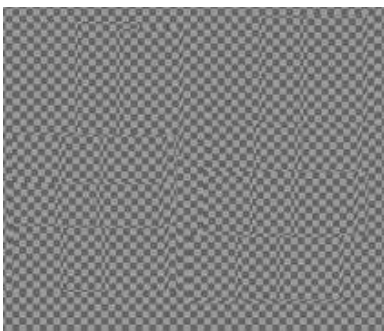


The image in the images window

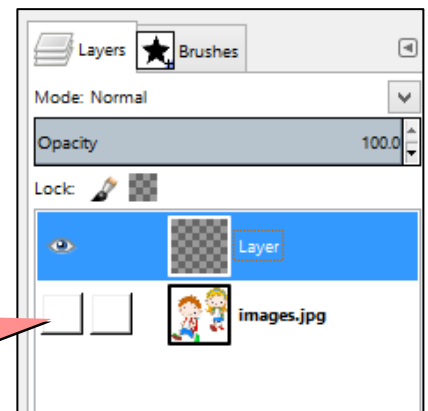
A new transparent layer



– To make the image layer invisible, click on the Layer visibility icon, and then the layer disappears.



The layer is invisible



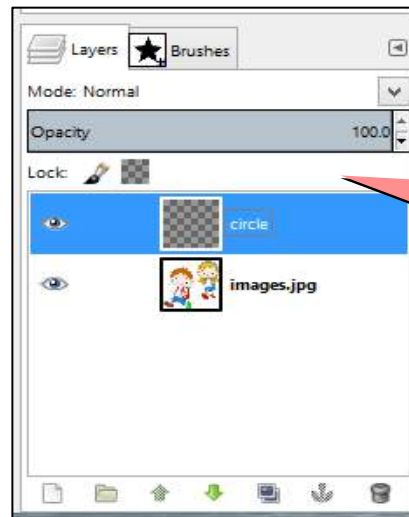
Images window (the layer that has the image disappears).

To reshown the layer content, click the layer visibility icon again.

### Activity (3)

With the help of your teacher, rename the layer:

To rename the layer, double click on the layer and give it a new name.

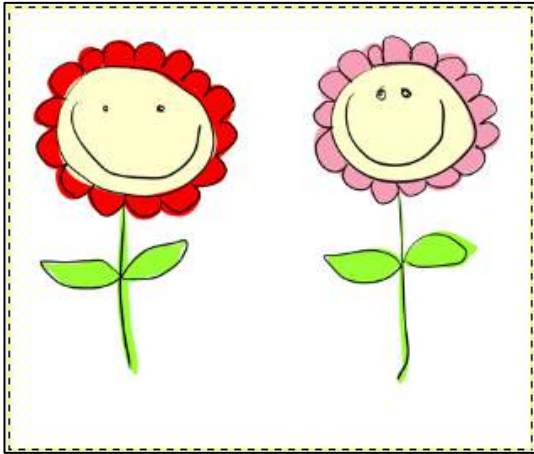


**Important Notes:**

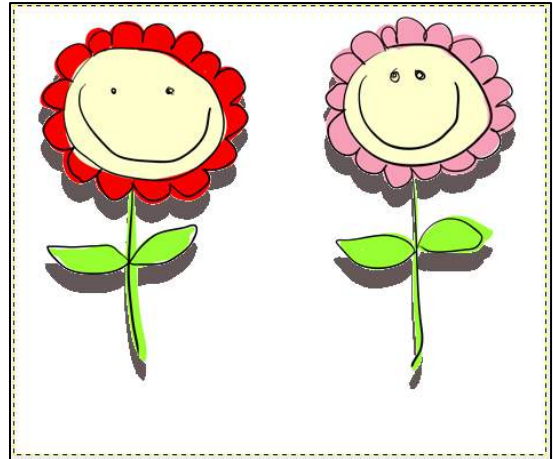
- To deal with the layer, you must make sure it is the current active layer by clicking on it.
- For ease of working with one of the layers, you can hide the rest of the layers by clicking on the layer visibility icon and dealing with the required layer icon.
- You can reorder layers using the arrows up and down in the Layers tab.

**Activity  
(4)**

With the help of your teacher, try to make a shadow for the following picture:  
Open the image file from the "Photos" folder; try to make a shadow for the image.



Original image



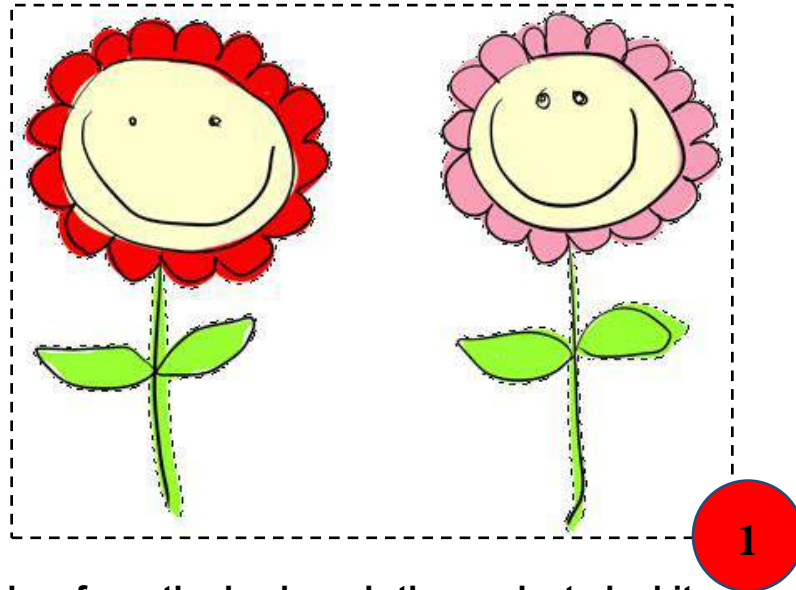
The image with a shadow

**Steps to implement the activity:**

1. Select the white color in the original image using Fuzzy tool; the white space around the flowers is selected.

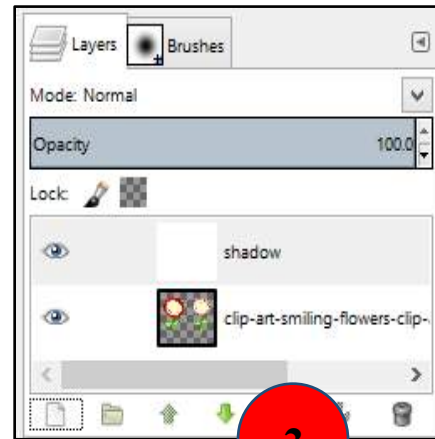
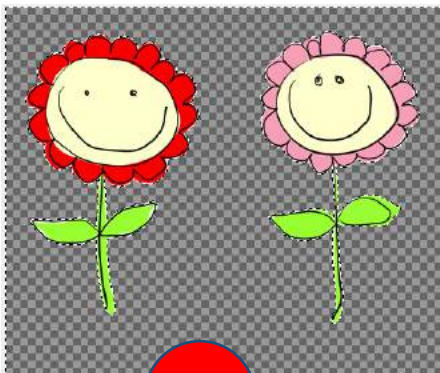
**Important note:**

- There are some images which may not allow Cut or Delete a part from it.
- To make the image liable to delete part of, do the following:
- You must make sure that there is no selection in the image (Select-None).
- Choose from the list of Layers Transparency and then choose Add Alpha Channel.
- The Alpha Channel represents the transparency of the image.



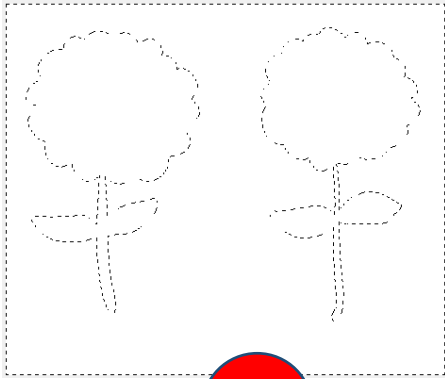
2– Press "Delete" key from the keyboard, then selected white space around the flowers is cleared.

3– Insert a new layer with name "Shadow."

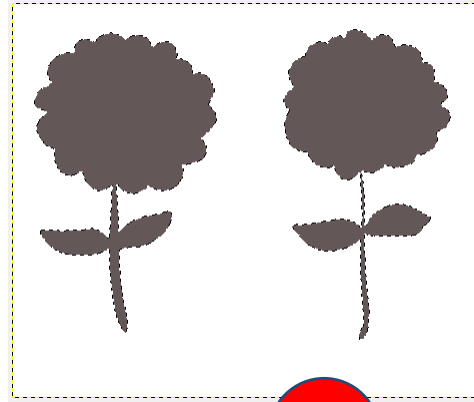


4– from the list Select, Choose Invert to invert the selection and determine the shape of flowers.

5– Make sure that the new layer "Shadow" is the current layer. To change the foreground color in gray – Use the Bucket Fill tool to make color packing in gray inside flowers selection



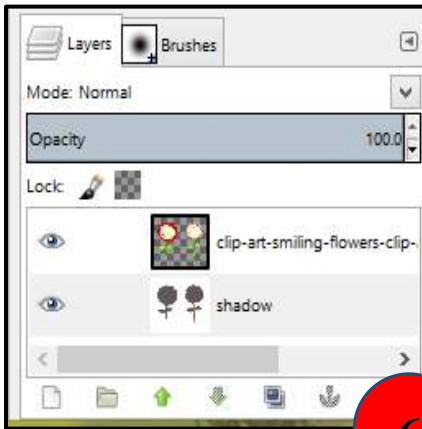
4



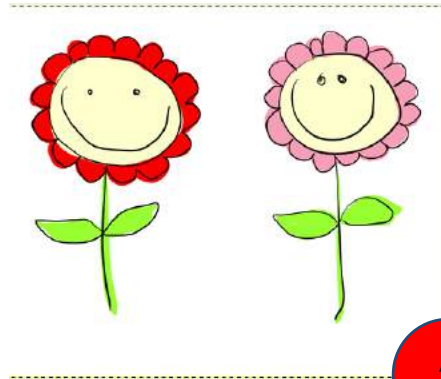
5

6- Rearrange the layers so that the layer "Shadow" is the bottom layer

7-to end the selection, from the Select menu, choose none.

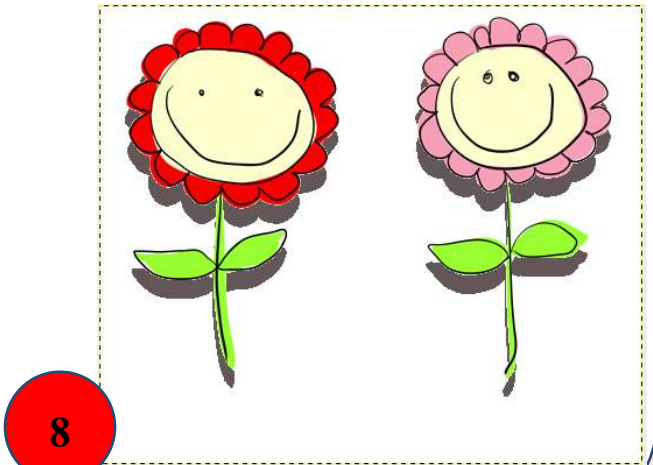


6



7

8- Move the upper layer of the flowers using the Move tool to show the shadow.



8

The final image with shadow

## Text tool (enrichment)

Your text is inserted through the Text tool, and it should be noted that when using the text tool is automatically inserted a new layer for the text, and the text box be shown in which text will be written, new layer name will be words from the beginning of the written text.



We are dealing with text written specifically to change the font color and font type of text tool options.

To move the text layer text is selected to become the current layer, using the Move tool and stand on the text and press and drag him are moving it.

Adjustable in the text must select the text layer to become the current layer, and then select the text inside the text box and the amendment to it.

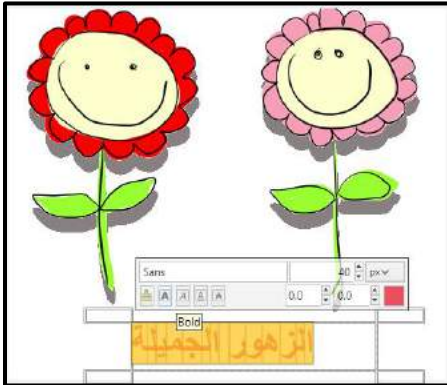
### Activity (5)

With the help of your teacher, type the text "the beautiful flowers" in the form of flowers in the former activity and export the image file with appropriate extension





## Steps to implement the activity



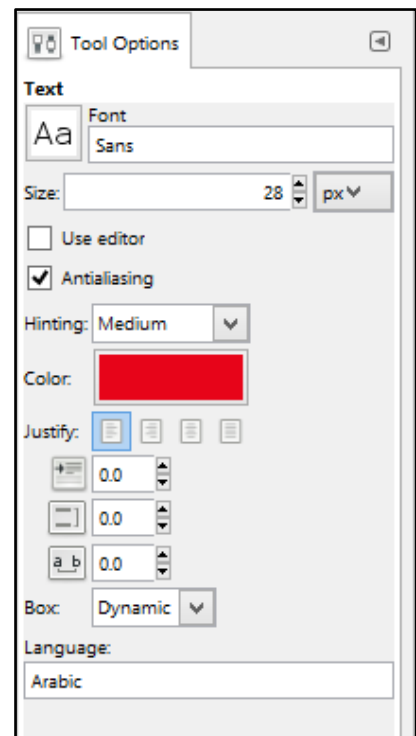
When choosing the text tool, the text box appears in which the text can be written and edited.



A new layer is automatically inserted



To get Out of the write mode, press on any other layer



Text tool options

You can get more information about the text tool from the link:

<http://docs.gimp.org/2.8/en/gimp-tool-text.html>

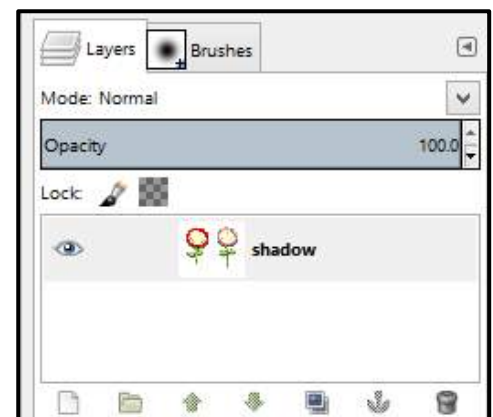
## Export image to a file with an appropriate extension

To export the image as a file with a suitable extension (JPG, ... GIF), follow these steps:

-Ensure that all layers are Visible.

-integrate all layers, and to merge the layers into a single layer choose Flatten Image of the Image menu.


-From the File menu choose Export, select the appropriate extension of the file and its name.





## Remember

– the "Layers" tab uses to edit, add and control different picture layers.

–To make the layer invisible, press on the icon. 

–To add a new layer, press on the icon .

–To move the level of layer to the top, press on the icon. 

–To move the layer to a lower level, press the icon .

–To copy the current layer, press on the icon. 

–To delete the current layer, press on the icon. 

–To deal with the layer, press on it so that the current layer becomes "Active Layer."

–To rename a layer, Double Click on the layer and type its name.

– When you insert the text, a new layer is inserted and the layer is named automatically with words from the beginning of the written text.

### **To export the image as a file with appropriate extension:**

–**ensure that all layers are Visible.**

–**merging all layers, to become one layer, choose Flatten Image from the Image menu**

–**from the File menu, choose Export, select the appropriate extension of the file and type the file name.**



# Exercises

**First question:**

Complete the following phrases:

The following picture shows the "Layers" panel.

Explain what each number refers to:



1. ....
2. ....
3. ....
4. ....
5. ....
6. ....
7. ....

**Second question:** Order steps to export file with appropriate extension:

( ) From the File menu choose Export, select the appropriate extension of the file and the file name.

( ) to merge all layers into a single layer, choose Flatten Image from the Image menu.

( ) ensure that all layers are Visible.



**Prepare this Question for the next lesson:**

**Filters are used for the modification and changing the appearance of the image.**

**What is the Filters? And how it can be used?**

## Lesson Six

### Edit an image using Filters

## Objectives

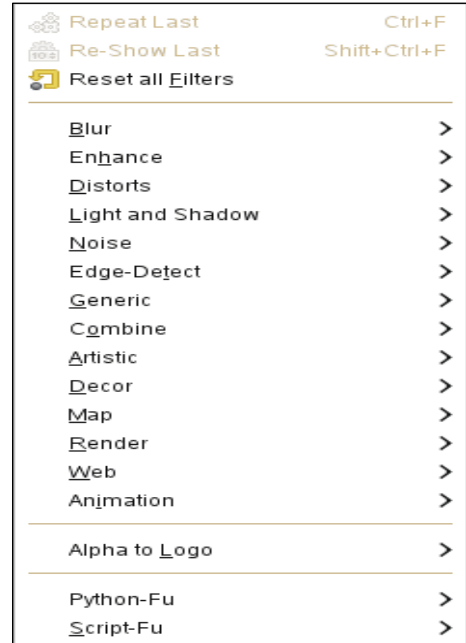
By the end of this lesson, the students will be able to:

- identify the concept of Filters.
- identify how to use Filters.
- change the appearance of an image using Filters.

## Change the appearance of an image using Filters

A Filter is used to help change the appearance of an image.

To use a filter , select the suitable filter from the Filters *menu*.



### 1- Blur

This filter is used to wipe out or darkening the image.

Get it from Filters *menu* → Blur → Blur



Original Image



Image after using Blur filter

## 2- Emboss (enrichment)

Emboss is used as following:

Filters *menu* → Distorts → Emboss.



Original image

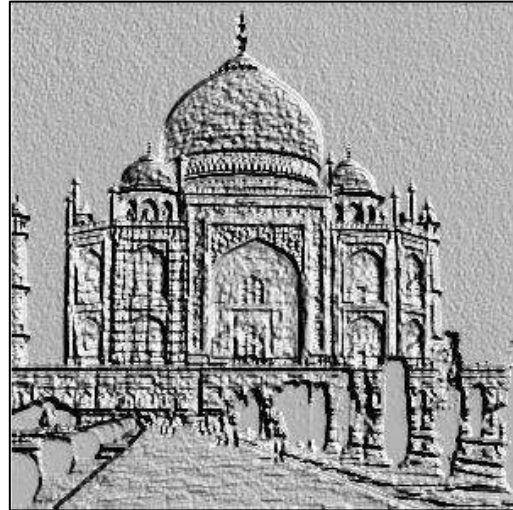
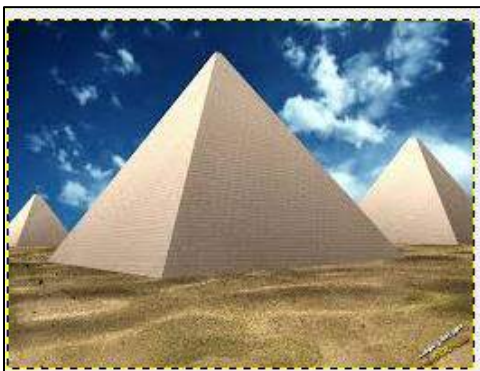


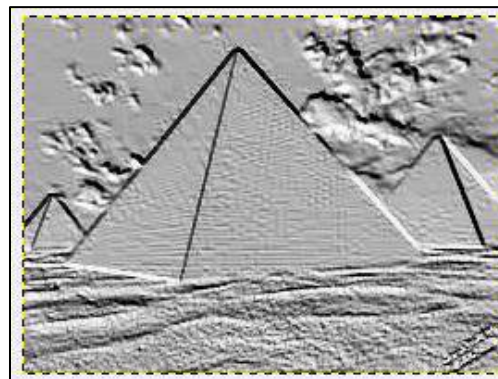
Image after using Emboss

### Activity (1)

With the help of your teacher, open this image from image folder, apply Emboss



Original image

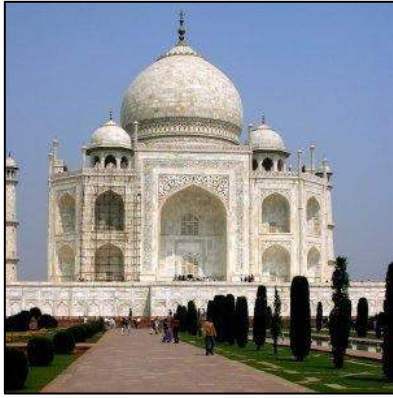


after applying Emboss



### 3- Page Curl (enrichment)

It can be used as following: Filters → Distorts → Page Curl.



Original image

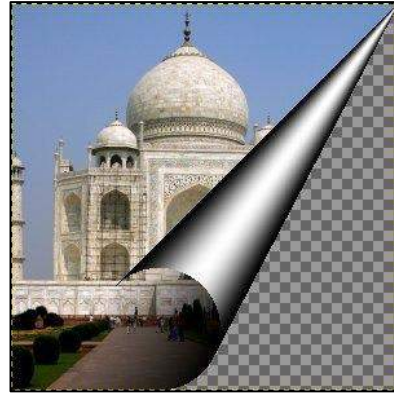


image after using Page Curl

#### Activity (2)

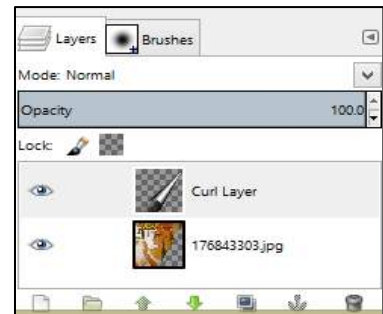
With the help of your teacher, open this image file from image folder and apply Page Curl filter



original image



after using page curl



a curl layer is added

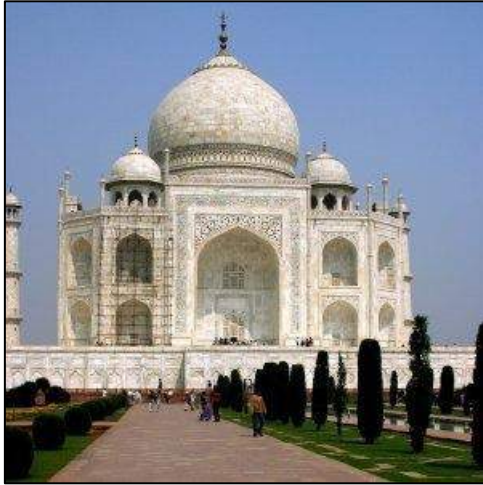
**Notice:** When we apply Page Curl, a new layer is added “Curl layer”.

**Discuss this with your teacher**

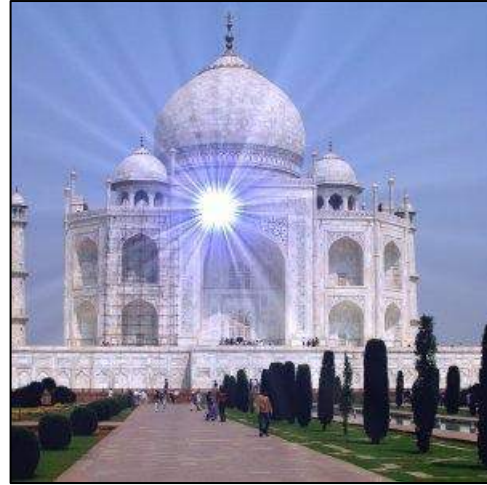


## 4- Supernova (enrichment)

Supernova is used as following: **Filters menu** → **Light and Shadow** → **Supernova**.

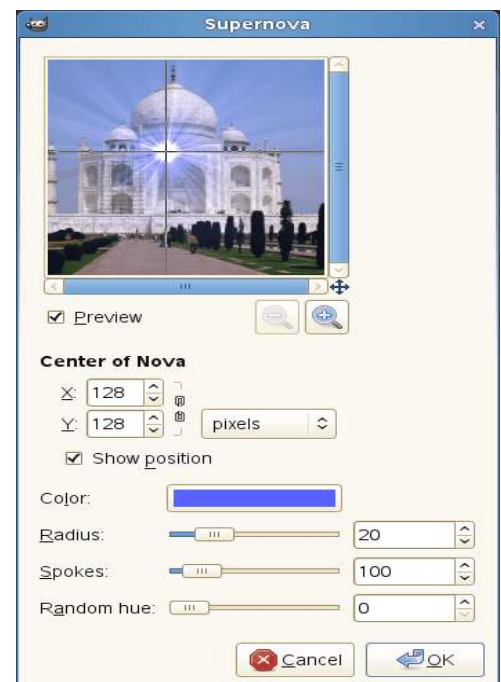


Original image



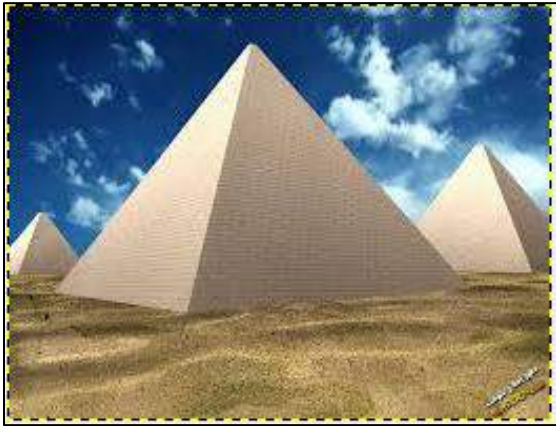
after using Supernova filter

To reach the appearance as in the image here after using the filter, you must modify the properties as in the picture on the right.



**Activity (3)**

With the help of the teacher, open the image from the pictures folder, use Supernova.



Original image

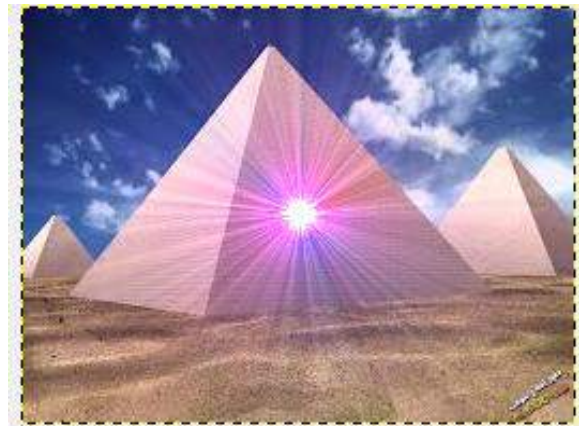
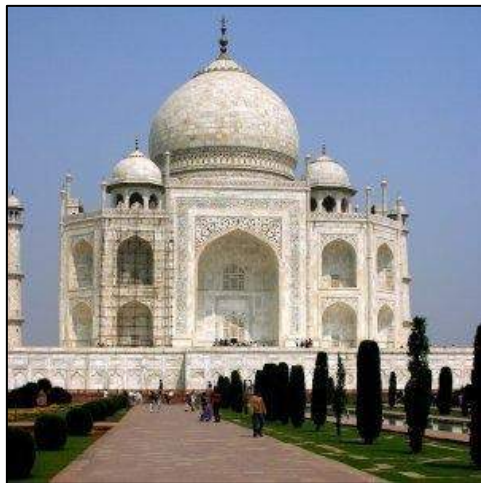


Image after using Supernova

**5- Film (enrichment)**

Use *Film filter* as following: *Filters menu* → *Combine* → *Film*.



Original image

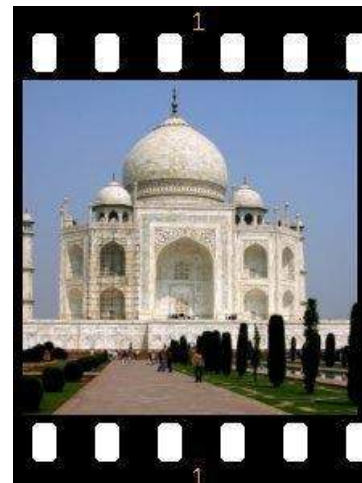


Image after using Film

To reach the appearance as follows, you have to modify the properties of the effect as in the dialog box.

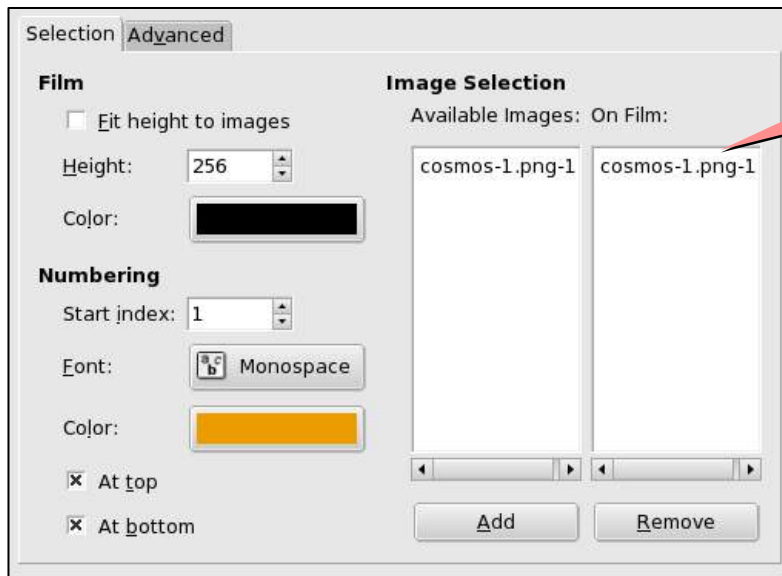
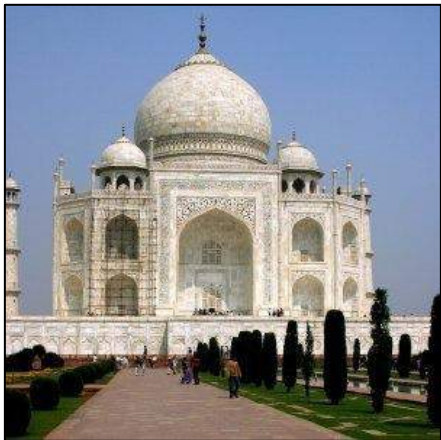


Image file name

## 6- Weave (enrichment)

Use the filter Weave as follows: **Filters menu** → **Artistic** → **Weave**



Original image

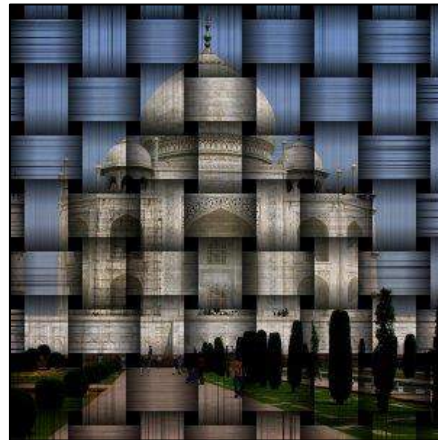
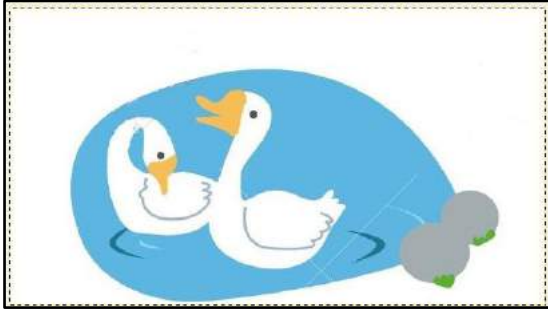


Image after Weave

**Activity (4)**

With the help of your teacher,  
open the image from the images folder and use *Weave filter*



Original image

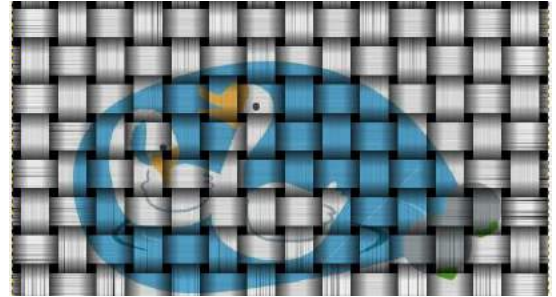


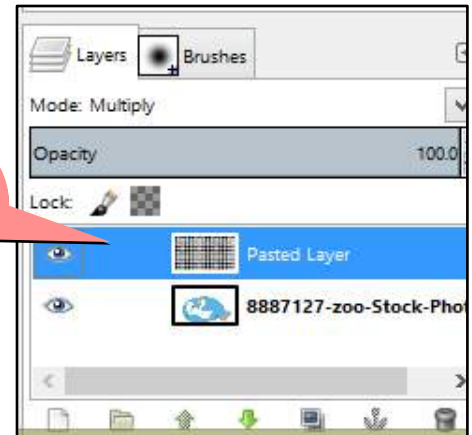
Image after using Weave

**Notice:**

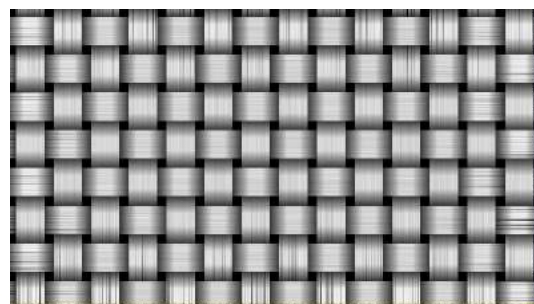
When using *Wave filter*, a new layer called Pasted Layer is added.



After hide image layer



Filter Layer



Filter layer after hide the image layer.



## 7- Old Photo (enrichment)

This filter is used as follows: *Filters menu* → Decor → Old Photo

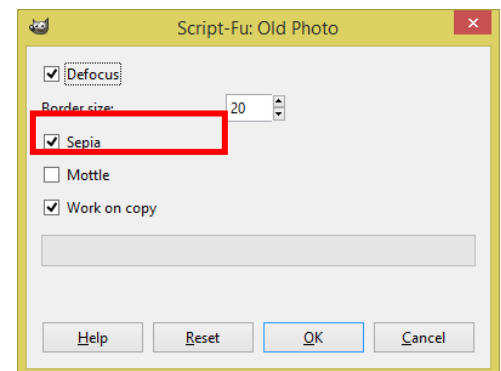


original image



image after using the filter

**Notice:** in the dialog box of the filter properties, when selecting “Work on copy” option, the filter is applied to a copy of the image file.



### Activity (5)

With the help of your teacher, open the image from the image folder and apply “Old Photo” filter.



Original image



image after using the filter

## 8-Map Object (enrichment)

This filter is used as follows: *Filters menu* → Map → Map Object.

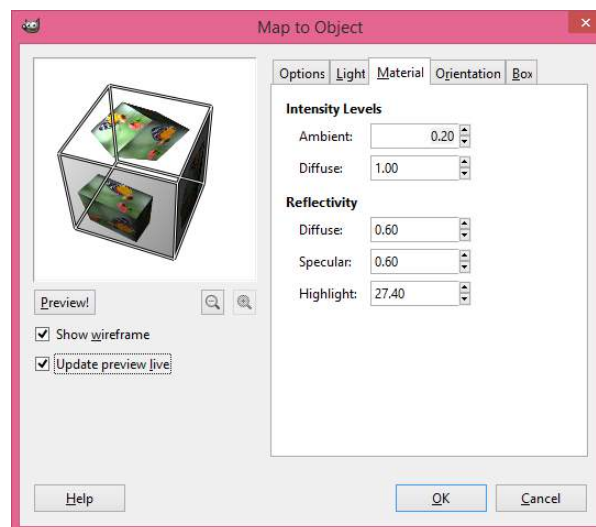


Original image



Image after using the Map object filter

- To reach the image appearance as in the picture, modify the filter properties as in the dialog box.



**Activity (6)**

With the help of your teacher, open the image from the images folder and use **Map Object filter**



Original Image



image after using the “Map Object “

**Remember**

The filter is used to help change the appearance of the image.

When applying the filter, a new layer is added to the image or a new file is created.

To use a filter, open the Filters menu and select the appropriate filter.

# Questions



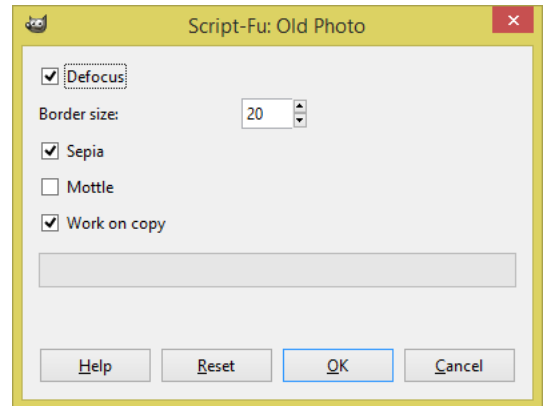
**Question 1:** Put (✓) in front of the right sentences and (X) in front of the wrong one:

1. A filter is used to help change the appearance of an image. (     )
2. To use filter, from the “Filters” menu, select the suitable filter. (     )
3. When we use ‘Filters”, a new layer is added or a new file is created. (     )

**Question 2 :** Complete the following:

In the dialog box of the “Old photo” properties, when select “Work on Copy “, this means

.....  
 .....



**Answer is to be done through MS Word in the Lesson Six Answer file**





**Prepare for the next lesson**

**Using the tools in image creating and editing program  
How can you design and create a portrait?**

# Lesson Seven

## Image types

## Objectives

**Specific objectives (procedural):** By the end of this lesson, the student will be able to:

- differentiate between bitmap Images Raster and Vector Images
- recognize the color mode of the image (Image Mode).
- modify one of the images Image Mode.
- export the image file with an appropriate extension.

## Image types

### Image types:

- 1- Raster Images.
- 2- Vector Images

### Raster Images:

It consists of contiguous points (**Pixels**), and each image contains rows and columns of the Pixels and the higher the number of the Pixels, the greater image clarity is, It has a large storage area for the image, and the quality and clarity of the picture change when zooming in or out.

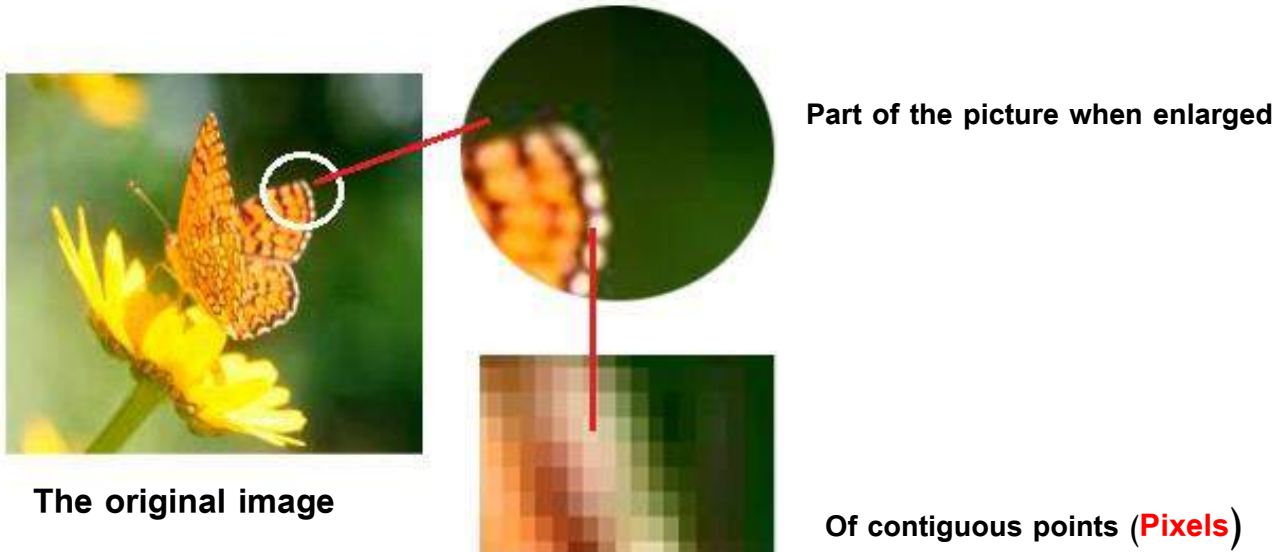
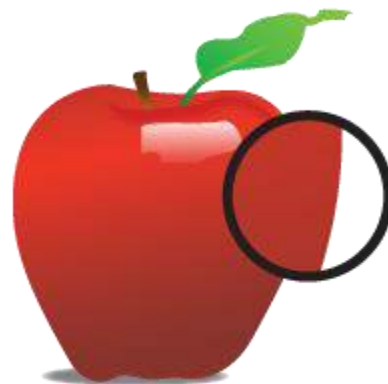
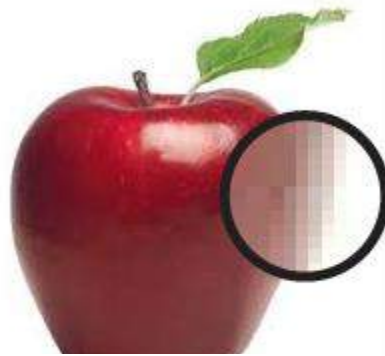
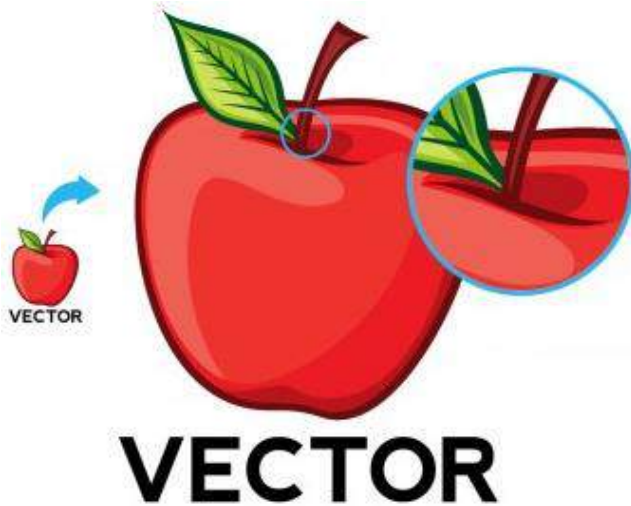


Image Raster

**Vector Images:**

It is characterized by no change in image quality and clarity when enlarged or minimized, and it has a small storage area.

**Activity (1)**

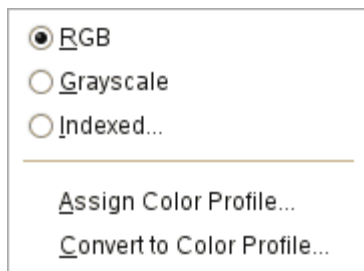
With the help of your teacher, look for the types of images and the difference between Raster and Vector Image.

## Image Mode

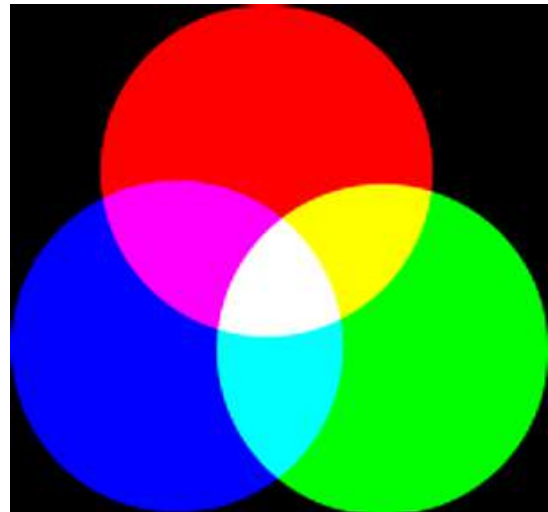
There are three modes of color of the image, and you can change the status or condition of the color image through the Mode command in the Image menu, namely:

1. **RGB** mode.
2. Grayscale mode.
3. Indexed mode.

### 1- **RGB** mode



**RGB** mode



Through the command **RGB** in the Image menu, the colored image is converted to **RGB** mode, **RGB** color mode fits very much in the case of displaying images and graphics through the computer screen.

**RGB** mode consists of the primary colors (**red**, **green** and **Blue**), and these three colors are mixed and united with different degrees of mitigation, lighting and intensity to give each primary color of these colors 256 color degree.

## 2- Grayscale mode

### Grayscale mode

The image can be converted to the color gray case by using the command Grayscale from Image list, where Grayscale mode reaches up to 256 degrees of gray ranging from black to white.

#### An Important note:

- The image can be converted from **RGB** mode to Grayscale by selecting the command Gray scale from Image menu.
- But it should be noted that the image will lose its Colorimetric data of RGB mode so that the **RGB** mode for the image cannot be restored again.

## 3- Chromatography Situation of the image Indexed mode

### Indexed mode:

You can convert the image to Indexed mode by using a command Indexed from Image list.

### Activity (2)

With the help of your teacher search for: **RGB** mode – Grayscale mode – Indexed mode.

-More information can be found on the link:

<http://docs.gimp.org/2.8/en/gimp-image-mode.html>

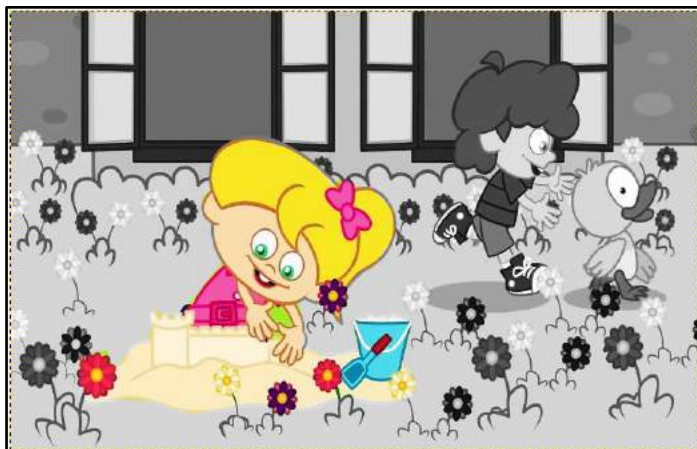
**Activity (3)**

With the help of your teacher, try to do the following:

- 4- Open an image file in the program.
- 5- Change the color mode of the image.
- 6- Copy the image from its original file.
- 7- Paste the image into a new layer in the other file.
- 8- Edit the image layers so that the original image become as follows:



The original image



The image after its modification



### Steps to implement the activity

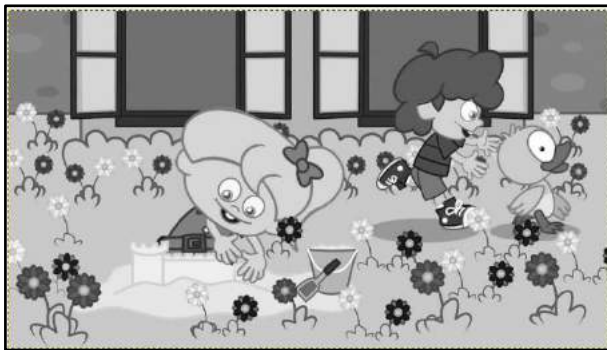
With the help of your teacher, try to do the following:

- Open the image file from the "Images" folder.



RGB mode

- Change the color mode of the image from RGB to Grayscale by selecting *Grayscale mode* from the Image menu.

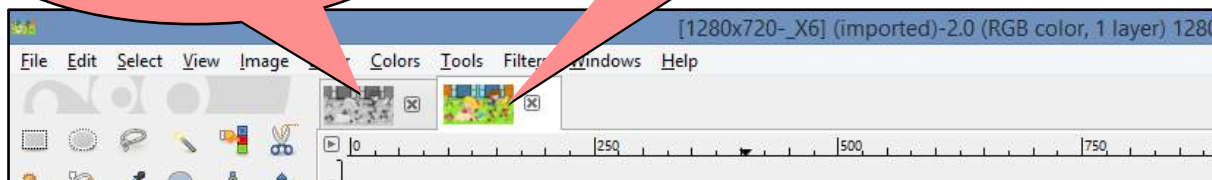


Grayscale mode

Reopen the original image file RGB again so that two files appear on the top of the window as shown in the figure.

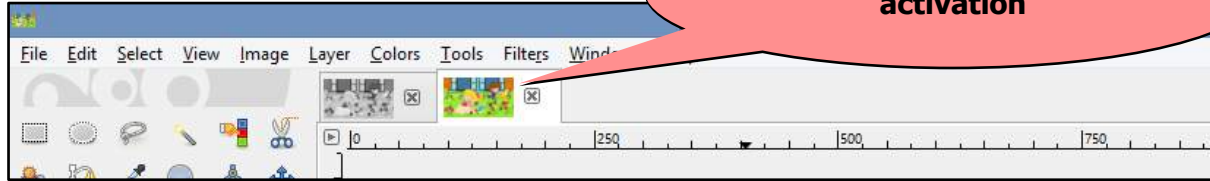
The first image file after converting to Grayscale

RGB color image file after reopen

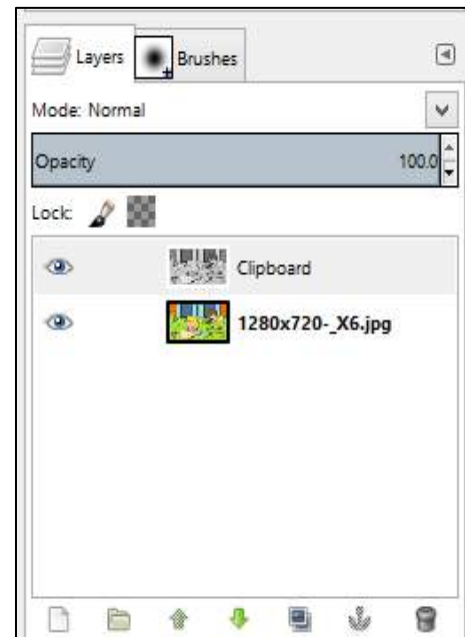
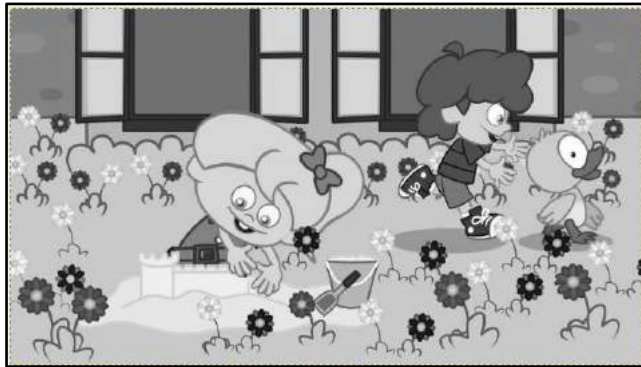


- Copy the gray Grayscale image file by selecting all from the Select menu.
- Go to RGB color image file by click its tab on the top of the image window.

Colored image RGB after activation



- Paste the image Grayscale in the colored image file RGB through:  
 Edit menu → Paste as → New Layer
- Grayscale image appears after the paste in a new layer on top layer RGB color image.



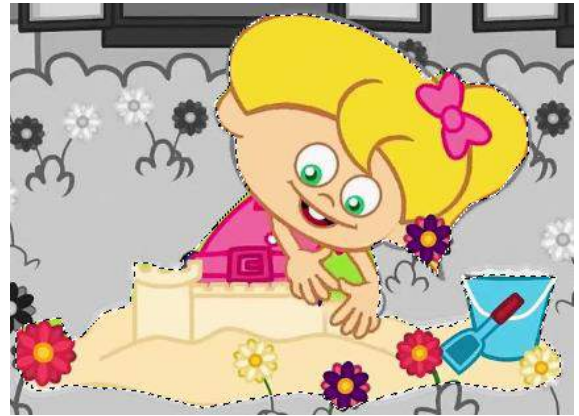
- Use one of the selection tools such as Fuzzy Tool to determine part of the gray image.



-To delete the part that was selected, click on the Edit menu and choose Cut.

-After deleting the selected part in the upper layer, part of the content of the RGB colored bottom layer appears.

-to remove the selection, choose None from the Select menu.



The image after modifications

## Export image file

After completing the work on the image, image saving stage comes.

The Save command is selected from the File *menu* where **GIMP** program gives extension to the image file **.XCF**, where all information about the image (its layers, transparency ...) is kept. This extension is useful in the case of re-opening the image file and editing it. But it should be noted that this extension is not suitable for reading through a variety of images programs.

### Export image file using the Export command from the File menu:

In order for other programs to be able to read the image file, the image must be exported through the Export command from the File menu where the appropriate image file extension such as (JPEG -GIF - PNG ...) is selected.

## Remember

**Image types:**

- Raster Images.
- Vector Images

**There are three modes of color of the image; namely:**

1. RGB mode.
2. Grayscale mode.
3. Indexed mode.

**RGB mode** consists of the primary colors (red, green and Blue), and these three colors are mixed and united with different degrees of mitigation, lighting and intensity to give each primary color of these colors 256 color degree.

### **Grayscale mode**

The image can be converted to the color grayscale by using the command Grayscale from Image menu, where Grayscale mode reaches up to 256 degrees of gray ranging from black to white.

-The image can be converted from RGB mode to Grayscale by selecting the Grayscale command from Image menu, But it should be noted that the image will lose its Colorimetric data of the RGB mode so that the RGB mode for the image cannot be restored again.

In order for other programs to be able to read the image file, the image must be exported through the command Export from the File menu where the appropriate image file extension such as (JPEG -GIF - PNG ..) is selected.



## Exercises

**Tick (✓) in front of the right answer and (✗) in front of the wrong one:**

1. In the Vector Image, the quality and clarity of the picture change when zooming in or out. ( )
2. Copy Raster Image is characterized by a change in image quality and clarity when enlarged or minimized. ( )
3. There is only one color mode of the image ( )
4. RGB mode fits very much in the case of display images and graphics through the computer screen ( )
5. RGB mode consists of the primary colors (red, green and black) ( )
6. You can convert the image to the color grayscale using the Grayscale command.( )
7. You can convert the image from RGB mode to Grayscale mode where the image loses its Colorimetric data ( )
8. In order for other software to read the image file, the image must be exported through the Save command from the File menu ( )
9. The image Can be converted from RGB mode to Grayscale mode ( )
10. The large size storage area is from the Vector Image defects ( )



**A warm up Question for the next lesson:**

**After knowing and using some of the tools and the image creation and processing program, how can you design and create a painting?**