

Ramses College for Girls
First Preparatory
2nd Term

Computer and Information & Communication Technology



Name:

Class :

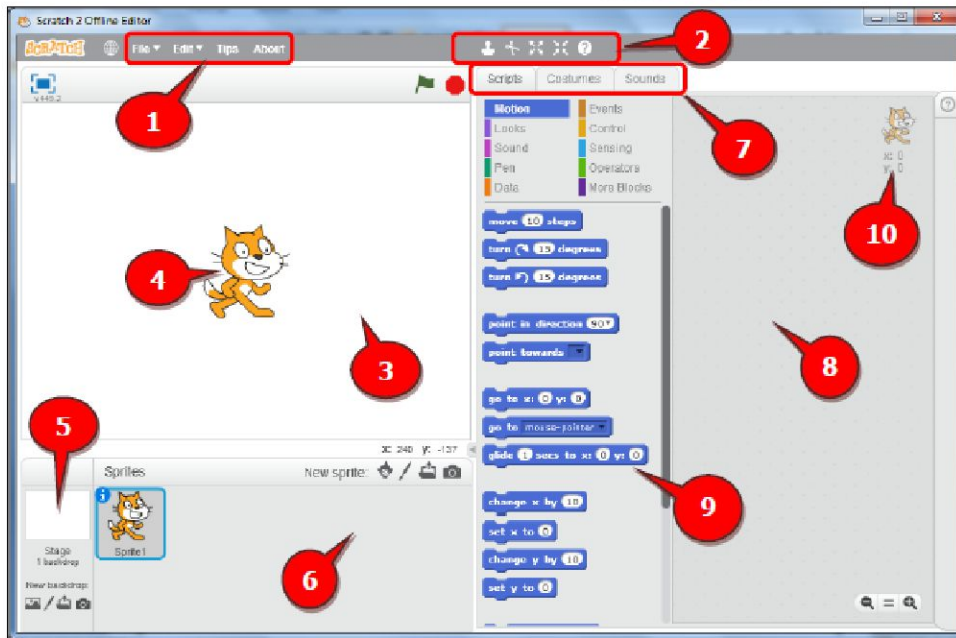
Scratch

SCRATCH is a programming language that lets you create your own interactive stories, animations, games, music, and art.

It is a free program can be downloaded from the internet.

<https://scratch.mit.edu/scratch2download>

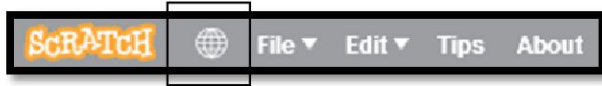
The Scratch Main Window:



- 1- Menu bar
- 2- Tool bar
- 3- Stage (Stage area where the output of the project is displayed in this area)
- 4- Sprite
- 5- Stage background (where different backgrounds can be added to the stage)
- 6- Sprites area (where the different sprites used in the project are found in this area)
- 7- Tabs bar (Script-Costumes-Sound)
- 8- Script area (where the script is collected by fitting blocks together with a certain arrangement)
- 9- Blocks area
- 10- (X,Y) point : (which represents the position of the sprite on the Stage)

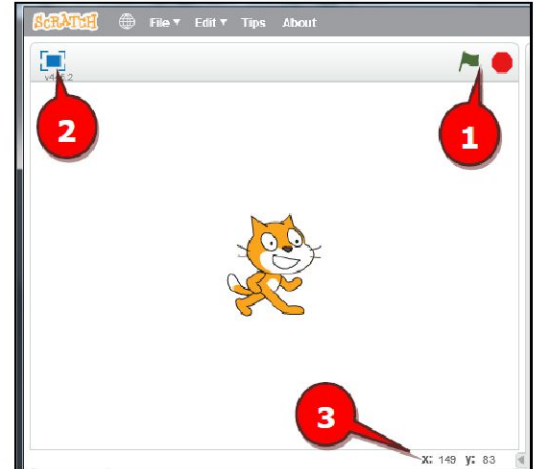
To Change the Scratch Interface to the Arabic Language:

From the “Menu” bar, press the following icon, then choose “العربية” from the drop down list.

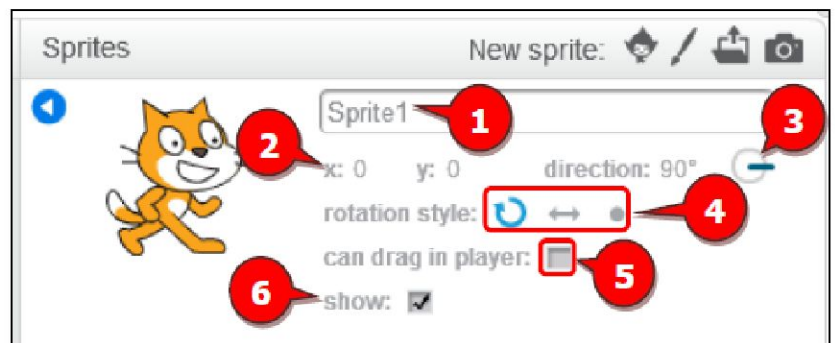


The stage:-

- 1 To run and stop the program.
- 2 To resize the stage (Full Screen).
Or from “Edit” menu, choose “Small Stage Layout” to resize the stage.
- 3 Show the dimensions of the mouse pointer on the stage.



To Show the Sprite’s Information:

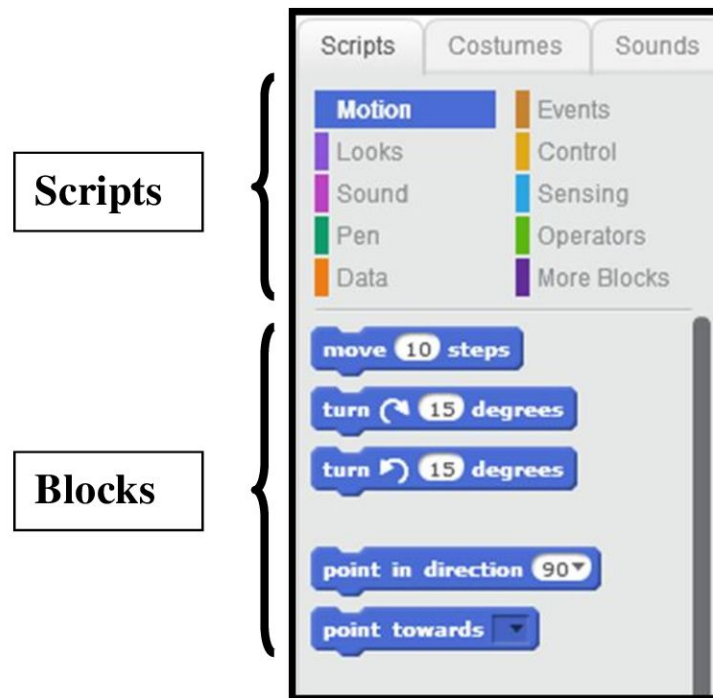


- 1- Sprite name (it can be changed)
- 2- Sprite position
- 3-The direction of the sprite motion
 - The direction can be changed by moving the blue line.
- 4- Sprite rotation style
 - By using the mouse, click on the required rotation style.
- 5- To drag the sprite during running the project.
- 6- To hide or unhide the sprite on the stage.

Scripts and Blocks sets

Scripts:-are consist of different groups, each group contains Blocks.

Blocks:-are programming Graphical Commands.



1. **Motion Scripts:** contain Blocks (commands) used in the movement of sprites or the rotate or identify directions on the stage.
2. **Events Scripts:** contain Blocks used to determine event which is located (or events) on sprites to start implementation of the project (such as pressing a key on the keyboard or click on the sprite.)
3. **Looks Scripts** :contain Blocks using control patterns and shapes of sprites and colors.

Project (1):-

To move the sprite on the stage do the following:



- Drag a MOVE block into the Scripts area.(Motion Script)
- Click on the block to make the cat move.
- Drag a WAIT block into the Scripts area.(Control Script)
- Drag out a REPEAT block and drop it on the top of the stack where you want the mouth of the REPEAT block to wrap around the other blocks. (Control Script)
- You can change the number of the repetition.

- Drag out  block and snap it on the top of the script (Events Script). Your script will start when you click on the green flag.

- Click the stop button to stop the program.

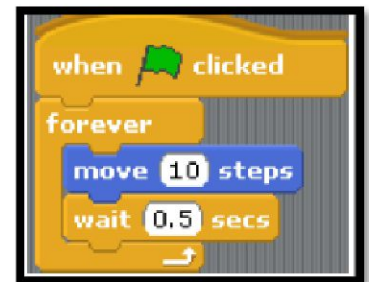
- Click  for full screen viewing.

NOTE:-

Instead of using (repeat block) try using (forever block).



The sprite won't stop moving without clicking on  button.



To Save the File to your computer drive, from “File” menu , choose “Save As”.

To Open an Existing File:-

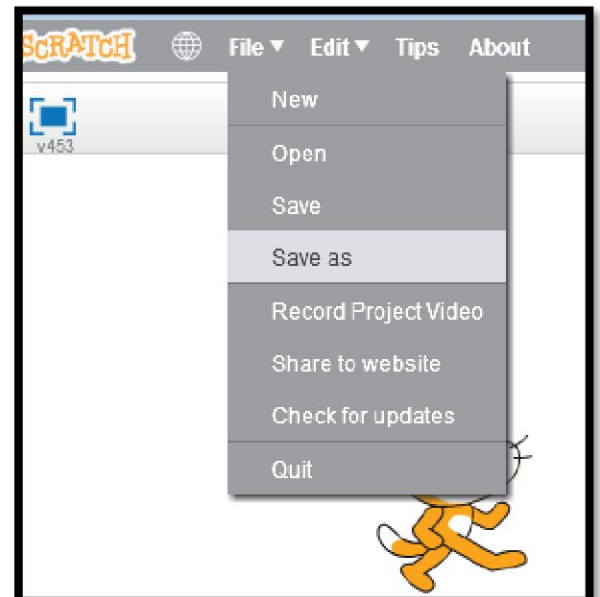
From “File’ menu, Select “Open”.

To Open a New File:-

From “File’ menu, Select “New”.

Adding a New Sprite:-

Each object in Scratch is called a sprite.



New Sprite Button:-



Choose from the library



Paint your own sprite



Upload your own image or sprite








Take a picture (from a webcam)

To Deal with the Sprite on the Stage:-

1- By using the “Toolbar”.



To keep the effect of any symbol on the “Toolbar” without pressing it again, press the “**Shift**” key.

| Symbol |  |  |  |  |  |
|--------|---|---|---|---|---|
| Effect | Get Help | Delete the Sprite | Duplicate the Sprite | Grow the Sprite | Shrink the Sprite |

2- By using the shortcut menu of the sprite.

3- From “Edit” menu, choose “Undelete”.

You Can Deal with the Stack on the Script Area by using the shortcut menu of the stack.

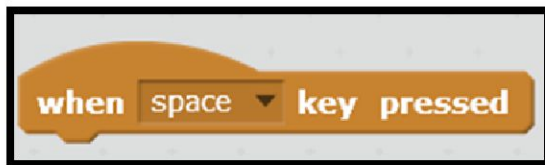


To resize the stack

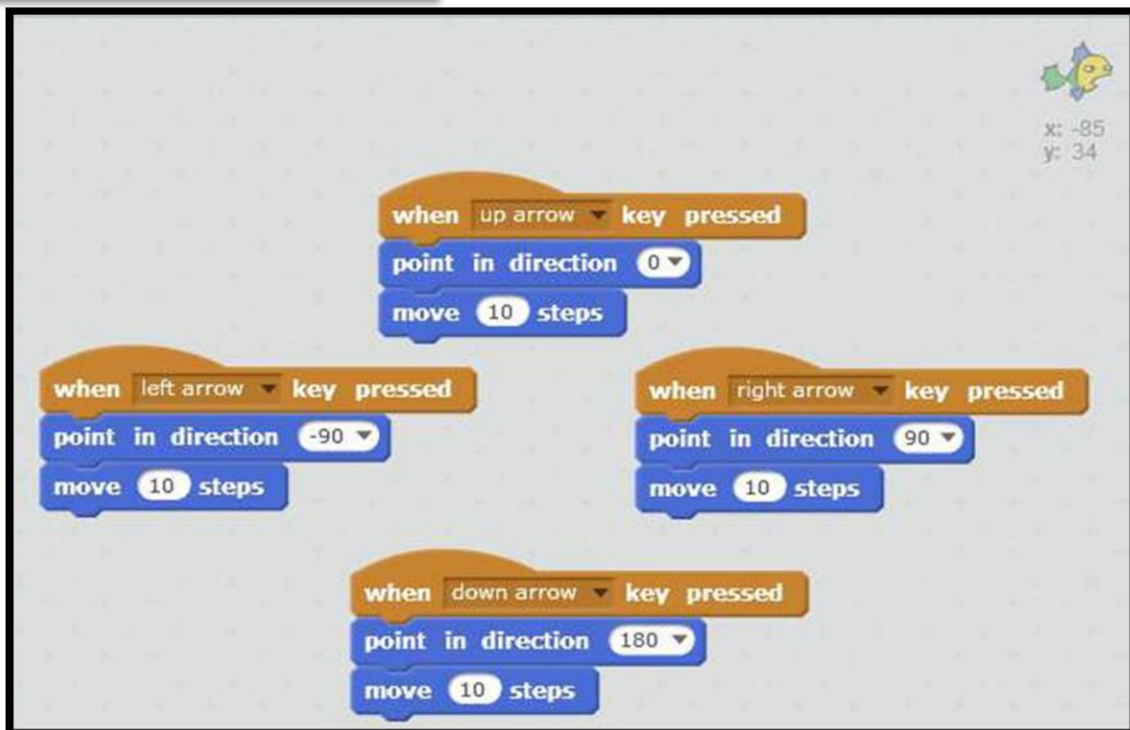
Project (2) :

Controlling the sprite's direction by using the arrow keys on the keyboard.

Events Blocks:-



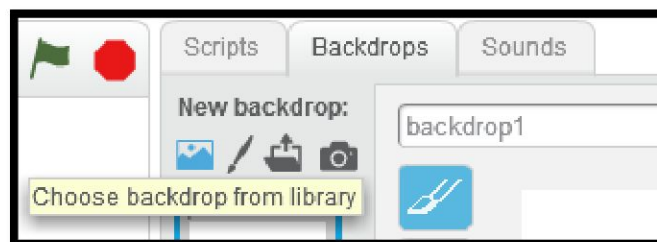
You can choose different key from the pull-down menu.



The Stage Backdrop and Costumes



Choose Backdrop from the Library:

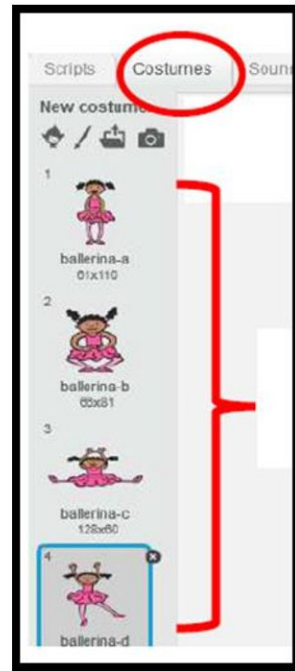


Undo editing

The editing toolbar to edit the backdrop

Costumes Tab:-

- Each sprite can have more than one costume.



- To change the current costume, click the “**Costumes**” tab, and then click on a different costume for the sprite.
- You can animate the sprite by switching between costumes.

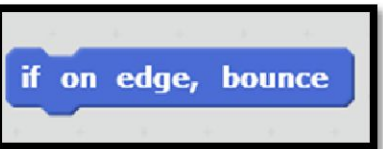
From Looks script add,



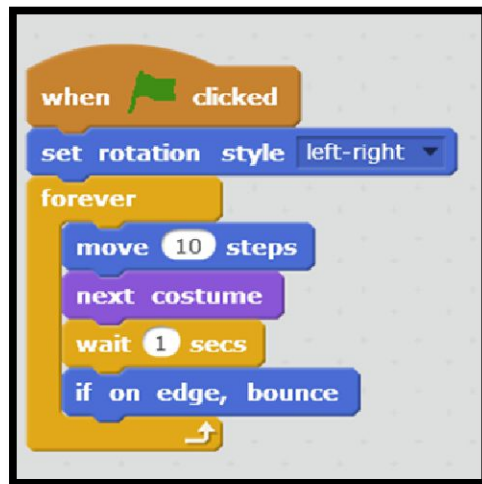
Project (3): Create a script that switches between costumes.



To prevent the sprite from exiting the stage: from **Motion Scripts** add

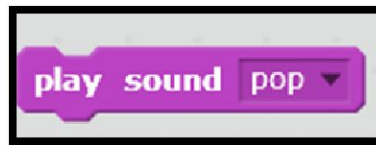


To bounce in the right direction: from **Motion Scripts** add



Adding a Sound

From (Sound Scripts) add,

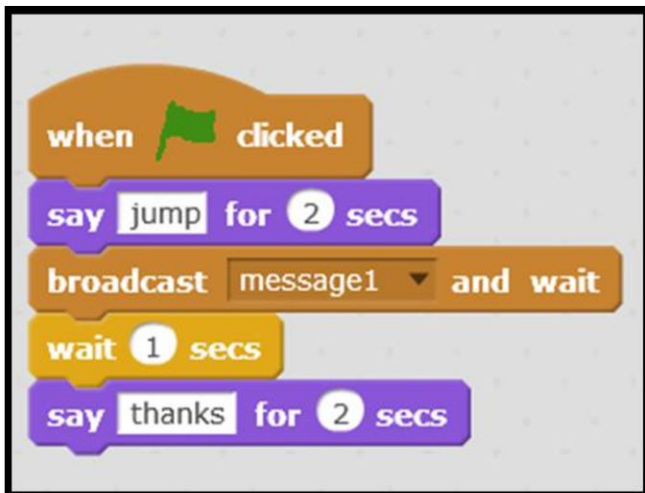


Project (4):-

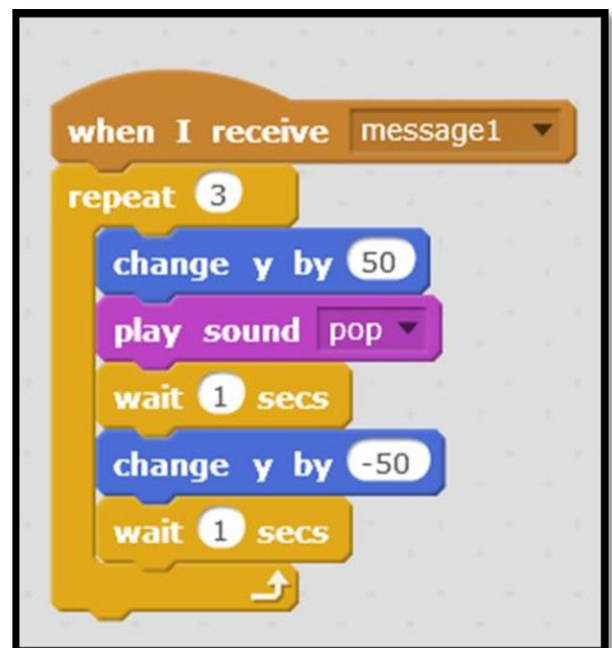


When the child says (jump), the frog jumps 3 times and make sound. Then the child says (thanks).

- The script of the child

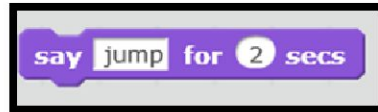


- The script of the frog

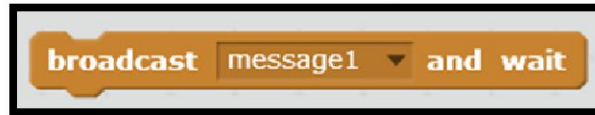


Note:

From (Looks Scripts) add,



From (Events Scripts) add,

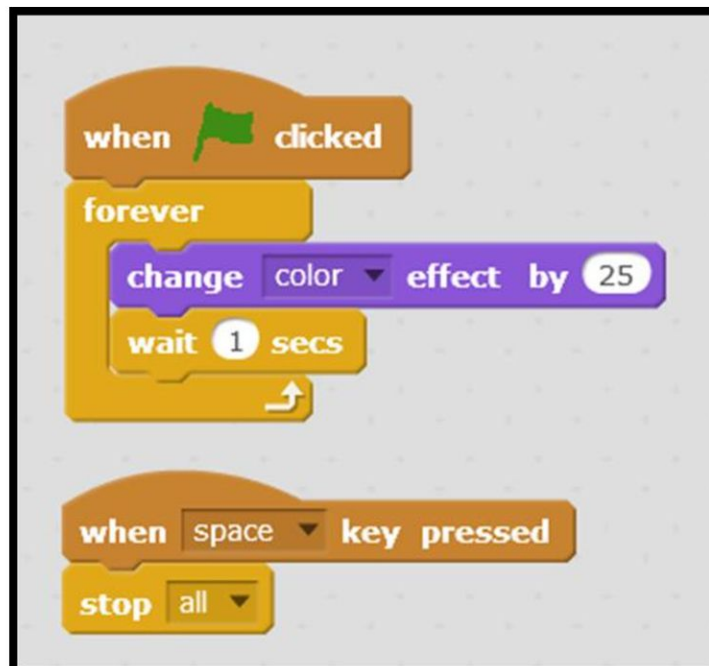


Broadcast a message to tell another sprite when to talk. When it receives the message, it can respond.

Add a Color Effect

Project (5):-

Create a script that lets the sprite changes its color every one second and stop running the program by pressing “Space” key.



Notes:



From “Looks Scripts”

From “Events Scripts”

From “Control Scripts”

Pen Blocks

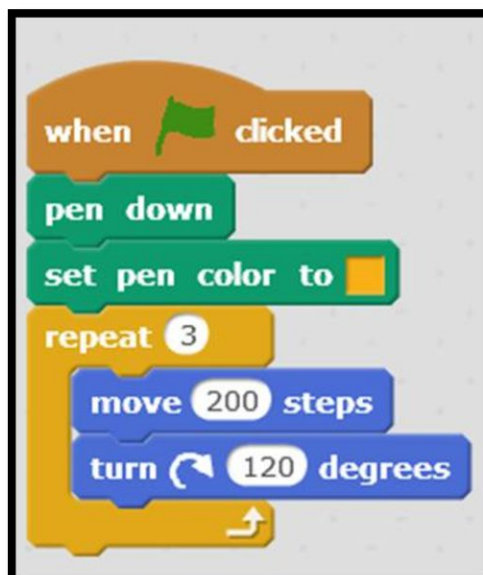


Put down sprite's pen, so the sprite will draw as it moves.

Draw regular geometrical forms

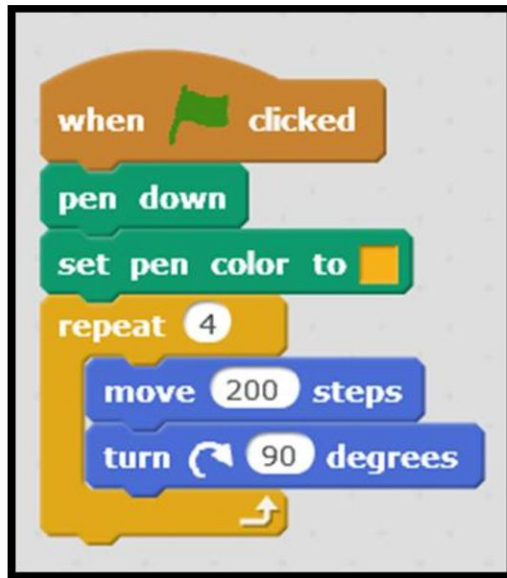
Project (6):

Create a script that lets the sprite move to draw an equilateral triangle.



Project (7):

Create a script that lets the sprite move to draw a square.



Note:

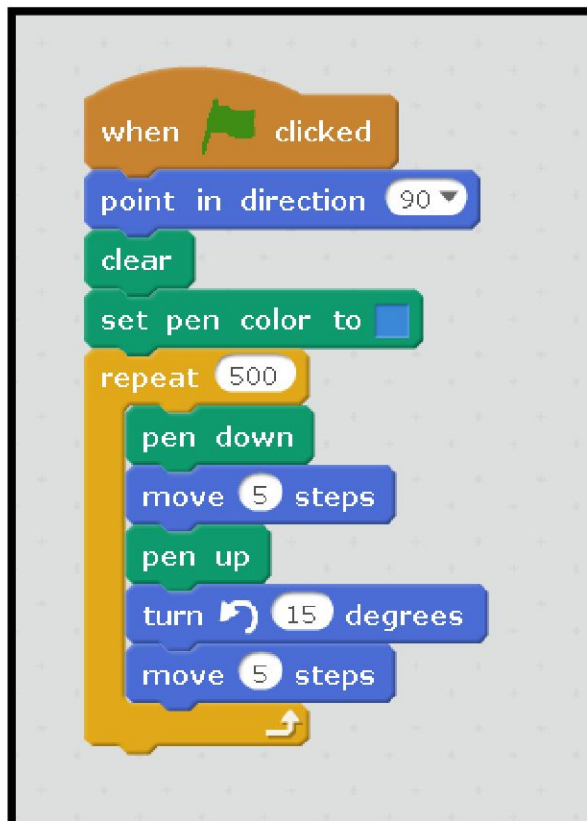
You can adjust the line width by adding From



“Pen Scripts”.

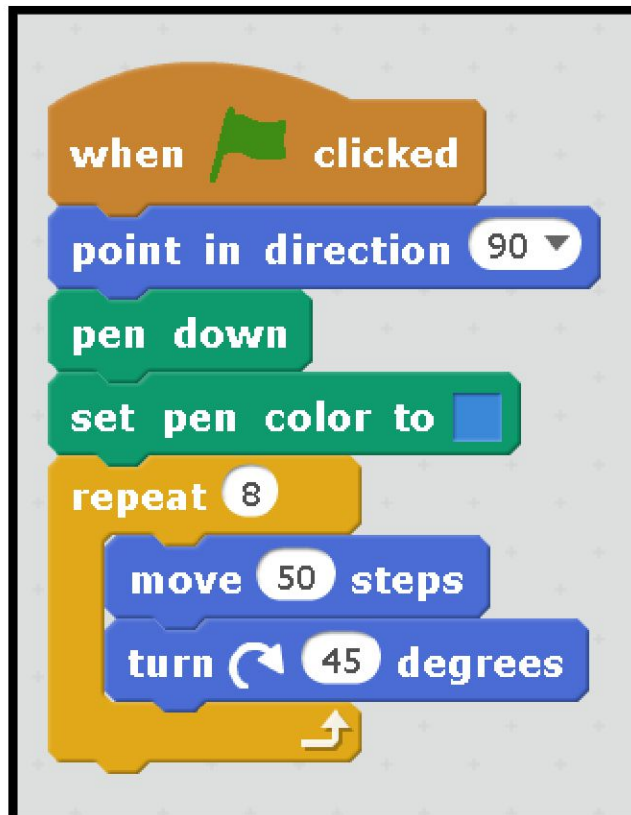
Project (8):

Draw a circle by dots



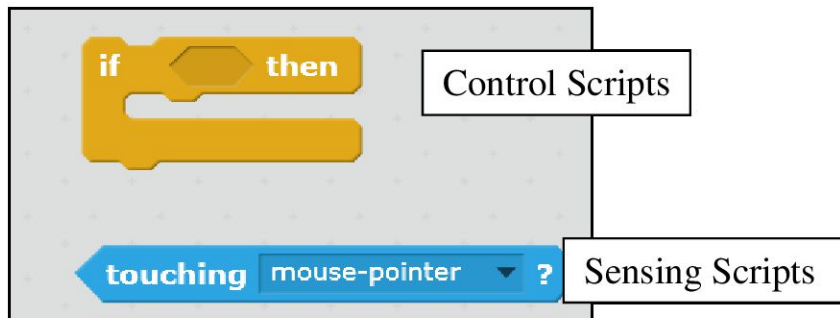
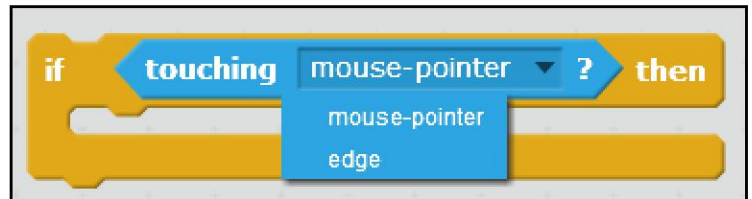
Project (9):

Draw an octagon shape.



Sensing Blocks and IF...Then Control Block

If condition is true, run the blocks inside.



Project (10):

Create a script that Let the moving cat on the stage change its position when the other sprite (the dog) touches it and play sound.

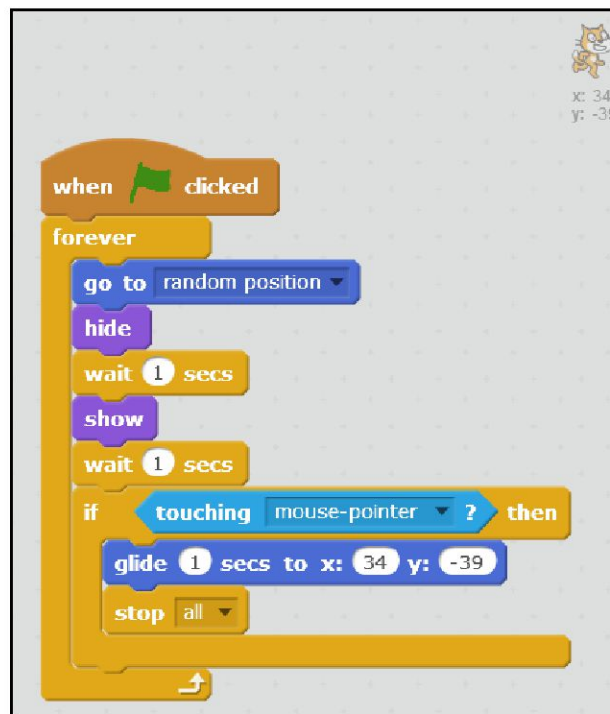


Note: You can show the sprite's information to change its direction on the stage and click on the check box "can drag on player" to drag the sprite during running the project.

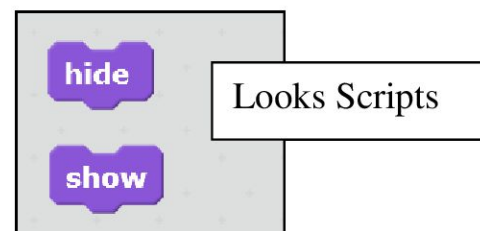


Project (11):

Create a script that Let the sprite to hide and show on the stage and change its position randomly, when using the mouse pointer and pressing the sprite it will go down the stage then the game will be ended.



Note:



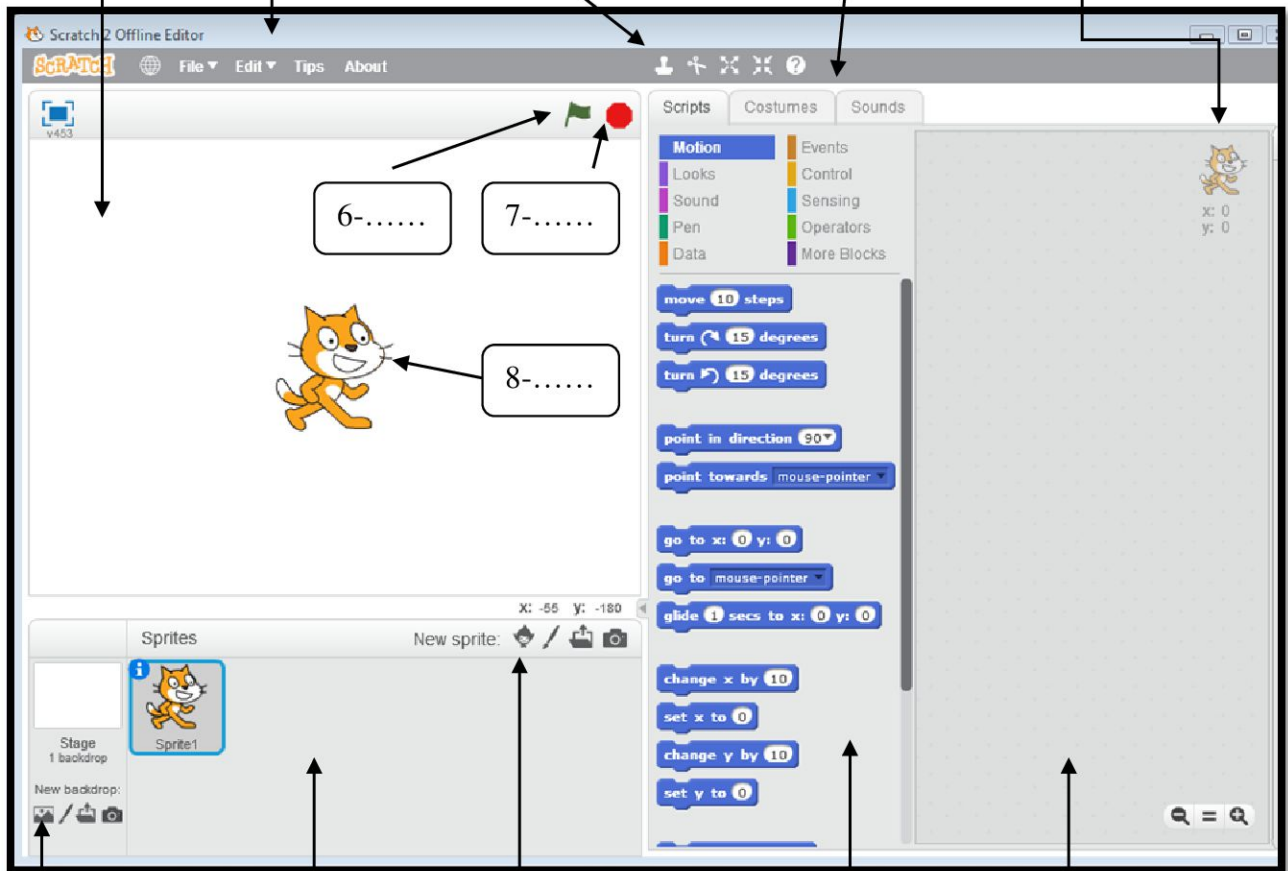
Scratch 2 Worksheets



Q1: Fill in the empty boxes with the words below:

| | | | | | | |
|--------------|-------------|-------------|--------------------|----------|-----------------|----------------|
| Run/Start | Sprite | Blocks area | Add new background | Menu bar | Sprite position | Add new sprite |
| Sprites area | Script area | Tab Bar | Tool bar | Stop | Stage | |

- 1-.....
- 2-.....
- 3-.....
- 4-.....
- 5-.....



- 9-.....
- 10-.....
- 11-.....
- 12-.....
- 13-.....

Q2:Complete the following:

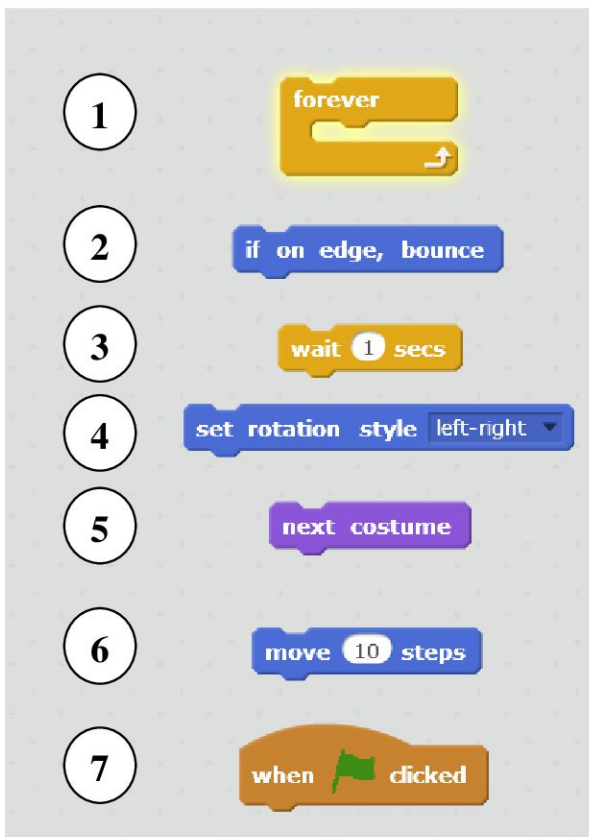
- 1- Each object in Scratch is called a
- 2- To change the look of a sprite you give the sprite a different
- 3- To tell a sprite what to do such as move, play music or wait, you use these
- 4- is a series of instructions run from top to bottom.
- 5- is an area that contains the basic blocks for programming your sprites.
- 6- is where you drag blocks in, snap them together in a sequence.
- 7- is where you see your stories, games, and animations come to life.
- 8- By changing the..... you can change the appearance of the stage.
- 9- give the appearance that the sprite is animated.

Q3:Match Colum (A) with (B)

When creating a script that lets the sprite switches between costumes:

(A)

(B)



| | |
|--|---|
| | To start your script. |
| | To change the sprite's position. |
| | To change the appearance of the sprite. |
| | To reduce the speed of the movement. |
| | To prevent the sprite from leaving the stage. |
| | To let the sprite keep on movement. |
| | To let the sprite bounce in the right direction |

Q4: put (✓) or (X) in front of the following statements according to the script below:

```

when green flag clicked
  forever loop
    change color effect by 25
    wait 1 secs
  end loop

when space key pressed
  stop all
  
```

- 1- The sprite will start moving by pressing the green flag. ()
- 2- The sprite will change its color every 25 seconds. ()
- 3- By pressing the "Octagon" shape, the sprite will stop changing its color. ()
- 4- The sprite will change its color 25 times. ()

Q5: complete the following :

1- To let the sprite move and draw an equilateral triangle:

```

when green flag clicked
  pen down
  set pen color to [ ]
  repeat [ ]
    move 200 steps
    turn [ ] degrees
  end repeat
  
```

2- To let the sprite move and draw a square:

```

when green flag clicked
  pen down
  set pen color to [ ]
  repeat [ ]
    move 200 steps
    turn [ ] degrees
  end repeat
  
```

Model Answers

Q1:

- | | | | |
|-----------------------|------------------|--------------------|-----------------|
| 1- Stage | 2- menu bar | 3- tool bar | 4- tabs bar |
| 5- sprite position | 6- run/start | 7- stop | 8- sprite |
| 9- add new background | 10- sprites area | 11- Add new sprite | 12- Blocks area |
| 13- Script area | | | |

Q2:

- | | | |
|---------------|----------------|----------------|
| 1- Sprite | 2- Costume | 3- Blocks |
| 4- The script | 5- blocks area | 6- script area |
| 7- stage | 8- backdrop | 9- costumes |

Q3:

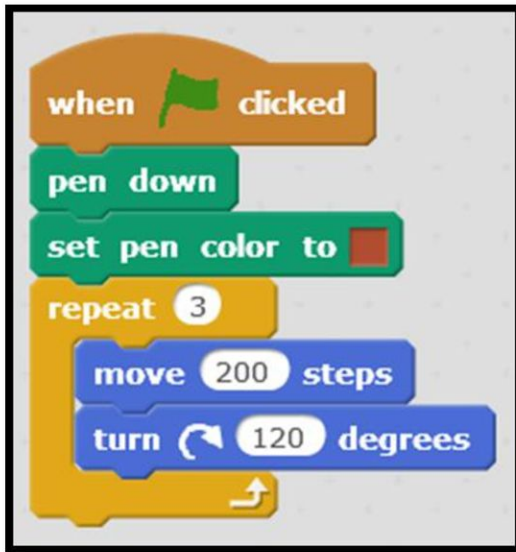
| | |
|---|---|
| 7 | To start your script. |
| 6 | To change the sprite's position. |
| 5 | To change the appearance of the sprite. |
| 3 | To reduce the speed of the movement. |
| 2 | To prevent the sprite from leaving the stage. |
| 1 | To let the sprite keep on movement. |
| 4 | To let the sprite bounce in the right direction |

Q4:

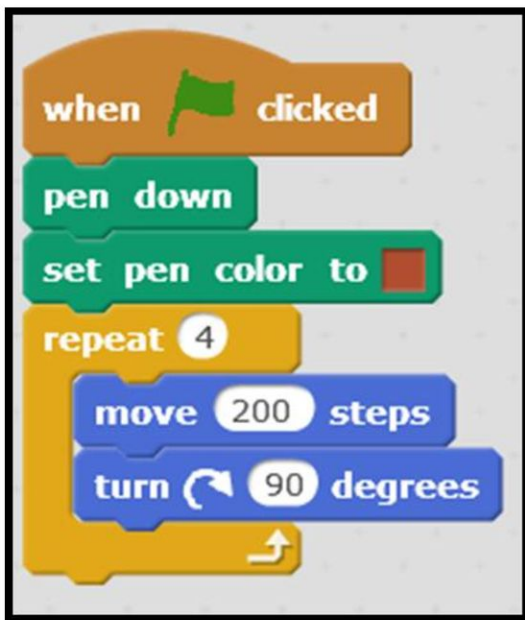
- | | | | |
|------|------|------|------|
| 1- √ | 2- x | 3- √ | 4- x |
|------|------|------|------|

Q5:

1-



2-



Lesson (1):Internet

The Internet

Is a network which is composed of a group of connected networks. Each network consists of a group of computer sets, communication equipment and lines, in addition to necessary software. Through these, the communication process is done. is a computer network made up of thousands and millions of networks worldwide.

Connecting to the Internet Needs to:

- 1- Connected computer with a "LAN" card.
- 2- Internet Service Provider (ISP). which is a company that provides the service to customers.
- 3- Web Browser: as Google Chrome, Fire Fox, Internet Explorer

Internet Concepts

- ♣ **Protocols**: Computer sets on the internet; they need certain rules for communication, which is called a protocol.
- ♣ **The Website** is a collection of one or more web pages grouped together stored in a web server, each website has a "URL" address (Uniform Resource Locator).
- ♣ **Hyperlink** is a part of text or graphic on the webpage, when that part is clicked it enables you to move to a different part on the same webpage or another page on the same site or another one.

- ♣ **Download** is to copy or move files or programs from a central computer to a smaller computer (from the internet to my computer).

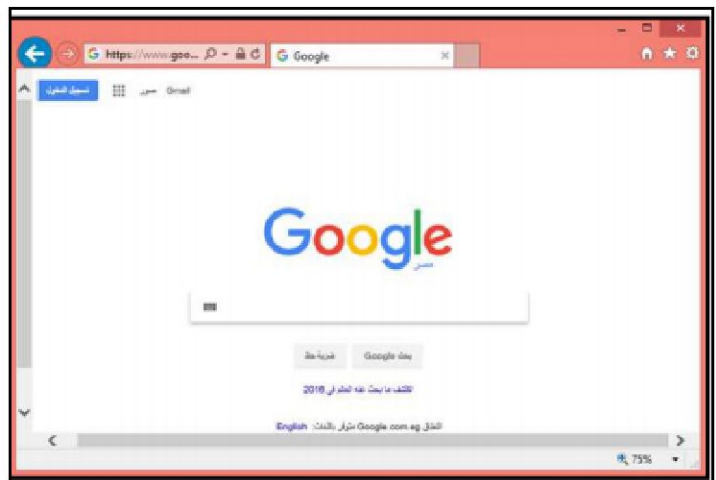
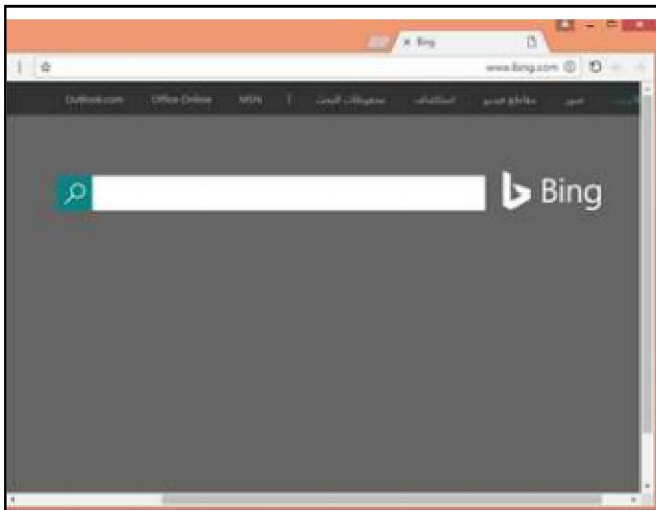


- ♣ **Upload** is to transfer a file or program to a central computer from a smaller computer.(from my computer to the internet).



Lesson (2): The Internet Services

- ♣ **Searching the Web:** through search engines as “Google” and “Bing” to find information.



- ♣ **WWW (World Wide Web)** is a collection of internet resources such as hyperlinked text, audio, and video files formatted in a language called "HTML".

Lesson (3): Cloud Computing



Cloud Computing It is a new concept to share your electronic sources to produce and exchange information on the internet. It provides the necessary tools to process your data and save them on one of the servers, to be used any time anywhere.

Requirements to Login Cloud Computing:

- 1- A computer connected to the internet.
- 2- An operating system allows you to communicate to the internet.
- 3- Web browser.
- 4- Internet connection.
- 5- Cloud computing service provider

What is a Cloud Computing Provider?

It is like a service of web hosting but with more availabilities. It allows the users and developers to use all the available sources efficiently.

Cloud Computing Services:

- 1- Electronic mail: such as Hotmail, Yahoo mail and Gmail.
- 2- Cloud storage service such as :
 - Google Drive presented by Google.
 - One Drive presented by Microsoft.
- 3- Cloud Musical Service: such as “Sound Cloud”, “iCloud”, “Google Music”.
- 4- Cloud Apps: such as “Google Docs”, “Photoshop Express”.

Worksheets

BASIC CONCEPTS OF THE INTERNET

Complete the following :

- 1- _____ is a computer network made up of thousands and millions of networks worldwide.
- 2- The requirements for connecting to the internet are _____ , _____ , _____ .
- 3- _____ is a collection of one or more web pages grouped together stored in a web server, each one has a _____ .
- 4- _____ is a part of text or graphic on the webpage, when that part is clicked it enables you to move to a different part on the same webpage or another page on the same site or another one.
- 5- _____ is to copy or move files or programs from a central computer to a smaller computer (from the internet to my computer).
- 6- _____ is to transfer a file or program from a smaller computer to a central computer.(from my computer to the internet).

Some Internet Services

Complete the following :

- 1- _____ is considered one of the most famous search engines on the internet.
- 2- _____ is a collection of internet resources such as hyperlinked text, audio, and video files formatted in a language called "HTML".

Choose the correct answer:

.....allows you to find information on the internet.

[search – email – web – all of this]

Basic concepts of Cloud Computing

Complete the following sentences with one word from the list below:

Cloud applications – web browser - cloud computing – cloud storage - Cloud – Cloud music – operating system.

- 1- _____ provides the necessary tools to process your data and save them on one of the servers, to be used any time anywhere.
- 2- _____, _____, _____ are some of the cloud computing services.
- 3- The requirements to login cloud computing are _____, _____.

Put (✓) or (X) in front of the following statements:

1. iCloud , Google Music are email services. ()
2. Providing internet connection is not of the requirements to use cloud computing. ()
3. Cloud computing allows Sharing resources and exchanging information. ()
4. One Drive is a cloud storage service provided by Google. ()

Model Answers:

Page 26: BASIC CONCEPTS OF THE NTERNET

Complete:

- 1- Internet 2- LAN card , Web Browser, ISP 3-Website, URL
4- hyperlink 5- Downloading 6- upload

Page 26: Some Internet Services

Complete:

- 1- Bing 2- WWW

Choose:

- 1- News group 2- Twitter 3- email

Page 27: Basic concepts of Cloud Computing

Complete:

- 1- Cloud computing 2- cloud applications, cloud storage, cloud music
3- web browser, operating system

Put (√) or (X):

- 1- (X) 2- (X) 3- (√) 4- (X)