Robotics DIGITAL WORLD

Teacher guide

Book 1

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For Publishing & Distributing

DIGITAL WORLD

Windows 10

Book 1

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Unit One

Computer and Life

1

Windows 10

Unit Learning Outcomes

- To determine the places where computers are used in society.
- To identify the computer, the input units and the output units.
- To enumerates input units and output units.
- To give examples of input and output units.
- To mention the correct behaviors when using the computer.
- To have proper behavior when dealing with the computer.
- To avoid incorrect behaviors when dealing with the computer.

Lesson 1: Computer Everywhere

Learning Outcomes

- To recognize the places where computers are used in society.
- To list some places where computers are used.
- To appraisal the role of computers in facilitating operations.

Time needed

One class lesson

Teaching strategies and classroom management

1. ClassDojo for classroom management.
2. Discussion.
3. Game- based learning.
4. Cooperative learning.

Warm Up

The teacher asks the students these questions:

1. Who has used the computer before?
2. Which type of computer did you use?

Listen to some students. Then ask them to solve the puzzles on the links.

Instructions

- Use the ClassDojo web tool to divide the students into groups randomly.
- Give each group one link (from resources box) to solve the puzzle in 15 mins (use ClassDojo to determine the time).
- Each group must talk about the picture of the puzzle and how they used the computer.
- Explain the meaning of **computer**.
- Give the students 10 mins to color the image of the computer in the student book page 7.
- Discuss the role of computers in facilitating operations.

Evaluation:

- Ask the students to do the second **activity page** 7 in 5 mins.
- Check the students` work.

Resources

The links are:

- https://www.jigsawplanet.com/?rc=play&pid=0e7b45e31fa8
- https://www.jigsawplanet.com/?rc=play&pid=0111f29a80df
- https://www.jigsawplanet.com/?rc=play&pid=26bc18ef13a3
- https://www.jigsawplanet.com/?rc=play&pid=3d49929f5d48
- https://www.jigsawplanet.com/?rc=play&pid=2295102d3321
- https://www.jigsawplanet.com/?rc=play&pid=0d9b9e3602b3
- https://www.jigsawplanet.com/?rc=play&pid=256c21dbc09f
- https://www.jigsawplanet.com/?rc=play&pid=0b72d4f74060
- https://www.jigsawplanet.com/?rc=play&pid=3b40e359e959
- https://www.jigsawplanet.com/?rc=play&pid=13677d69de4d
- https://www.jigsawplanet.com/?rc=play&pid=331b508b2d06
- https://www.jigsawplanet.com/?rc=play&pid=3b58976d250a

Evaluation Strategies

- Performance based evaluation.

Evaluation Tools

- Pencil and paper.

Lesson 2: Computer Components

Learning Outcomes

- To identify the computer.
- To explain the working principle of a computer.
- To differentiate between input units and output units.
- To gives examples of input and output units.

Time needed

Two class lesson

Teaching strategies and classroom management

- This box introduces the units and asks the students some questions to discuss in pairs or in small groups.

Do you remember?

Ask the students to list 3 places where the computer is used.

Warm Up

- Ask the students how we can make salad.
- Listen to the answers.
- Tell the students that the vegetables are the inputs, the cutting is the process and the salad is the output.
- Use this link to encourage the students to rearrange the letters to form a word in 2 mins.
- https://wordwall.net/resource/58606159

Instructions

- After the warm up; explain to the students that the computer works in the same way as we prepare the salad.

- (The computer needs input devices to enter the data into a computer. The inputs need to be processed such as (delete, insert, sort and expressions) to become output. The output units display the results).
- Use the flash cards for input devices from the source part and ask the students what are the devices he/ she needs to do this:
  - Record a voice.
  - Take a photo.
  - Write a letter on pc.
  - He/she has a hard copy of a photo and needs to save it on the pc.
- Use the flash cards for output devices from the source part and ask the students what are the devices he/ she needs to do this:
  - Print a letter on a paper.
  - Show the photo on a screen.
  - Listen to music.
- Give the students 10 mins to do the activity page 11.
- Discuss the students about the answers and let them correct their solutions.

Evaluation:

- Explain the first activity page 12 for students and give them 5 mins to do it.
- Check the students` answers and put the marks for them.
- Explain the second activity page 12 for students and give them 5 mins to do it.
- Check the students` answers and put the marks for them

Resources

The links are:

1. Warm Up Link.
2. Flash cards for input devices.
3. Flash cards for output devices.
4. Worksheet (1)

Enrichment Activity

- Give the link bellow to the students to rearrange the words.
  https://wordwall.net/resource/58658218

Evaluation Strategies

- Performance based evaluation

Evaluation Tools

- Pencil and paper.

Remedial Activity

- Distribute Worksheet No. 1 to the weak students.

Lesson 3: Rules for Computer Use

Learning Outcomes

- To learn the rules of proper handling of the computer.
- To adheres to the correct instructions for dealing with the computer.
- To identify wrong behaviors in dealing with the computer.

Time needed

One class lesson

Teaching strategies and classroom management

- Presentation.
- Acting.
- Discussion.
- ClassDojo for class management.
- Working in groups.

Warm Up

- Choose one student to act his/ her sitting when he/she plays game.
- Ask the students: who sits like his/her friend when he/she uses the computer?
- Listen to the answers and discuss them if this way harms the body.

Instructions

- Play **dealing with computer** video from the multimedia folder; this video contains the wrong way of sitting then the right way.
- Pause the video after the wrong way and discuss the students about that and how it harms the body. Then play the video to show the right way.
- Repeat the steps until the video is finished.
- Explain the other mistakes when the computer is used.
- Teach the students how to shut down the computer correctly.
- Give the students 5 mins to find the mistakes in Ahmad's sitting in the activity page 14, then discuss them so the other students know the correct answers.

- Ask the students to do the activity page 15 and check their answers.
- Use ClassDojo tool to distribute students to groups.
- Distribute worksheet (2) to the groups and give them 5 mins to do it.
- Choose one student from each group randomly using ClassDojo to explain the errors in the image – 5 images mean 5 students from different 5 groups.
- After each image is discussed ask the groups if any wants to add anything.

Resources

- dealing with computer video from the multimedia folder.
- Worksheet (2).
- E-evaluation (Rules_to_Use Computer).

Evaluation Strategies

- Performance based evaluation.
- Observation.

Evaluation Tools

- E- exam (Rules_to_use_Computer), checklist.

Remedial Activity

- Ask weak students to shut down the computer in the correct way.

Computational Thinking

- Your uncle is a programmer, he works 10 hours daily using a computer. Give him an advice and make a table for him to protect his body. The table must include break time and some exercises for his legs, back, head and hands.

Unit Two

2

Unit Learning Outcomes

- To explain what is meant by operating system.
- To define desktop components.
- To recognize the taskbar and mention its components.
- To handle the mouse correctly.
- To explain the components of the window.
- To change the size and the position of the window.
- To display more than one window in different ways.

Lesson 1: Operating System

Learning Outcomes

- To recognize the importance of the operating system.
- To define desktop components.
- To explain the importance of desktop icons.

Time needed

Two class lesson

Teaching strategies and classroom management

- Learning based games.
- ClassDojo
- Learning based activity.

Do you remember?

- Asks the student to list 3 input devices and 3 output devices?

Warm Up

- Show the power button image in front of the students and ask them where did they see this button?
- Ask the students: what is the function of this button?
- Listen to the answers and ask them to think of devices that use this button.

Preparing the portion

- Be sure that the desktop contains only the primary icons (This PC, User files, Recycle Bin, Network).
- Print the icons picture from the appendix and cut each one alone.
- Remember to bring a sticker with you.

Instructions

- Press the computer's power button in front of the students, and tell them that the appeared screen is called desktop.
- Explain the contents of the desktop (icons, taskbar) and the importance of each one.
- Make groups (the number of the groups must be the same number of the available computer devices).
- Ask the groups to turn on the computers and learn about the components of the desktop in 10 mins.
- Stick the images of the icons you cut out earlier on the board with the start button and the names of the icons randomly.

- Use the ClassDojo tool to choose one student each time randomly and ask him/here to choose an icon image and stick it beside its name.
- Do that for all images.

Evaluation:

- Ask the students to do the activity page 19 and check their answers.

Resources

- Power button image.
- The desktop components pictures in the appendix.
- Desktop icons game.
- Game to rearrange the desktop components letters.

Evaluation Strategies

- Performance based evaluation
- Observation.

Evaluation Tools

- General evaluation of the unit - Rubric scale

Remedial Activity

- Ask the weak students to play Desktop icons game.

Enrichment Activity

- Rearrange the letters in this game to get the correct words.

Lesson 2: Taskbars

Learning Outcomes

- To recognize the taskbar.
- To list the components of the taskbar.
- To define taskbar panes.
- To distinguish between the functions of taskbar panes.

Time needed

Two class lesson

Teaching strategies and classroom management

- Educational based activity (Who am I).
- Presentation
- Lecture

Do you remember?

Show the desktop components presentation from the multimedia folder and ask the students about the name of the components appeared in the picture.

Preparing the portion

- Print the (Who Am I) cards from the appendix and cut them as a card.
- Print the exit cards from the appendix and cut them as circles. The no. of exit cards must be equal the no. of students.

Warm Up

- Create an encouragement competition among students through the "Who am I" strategy and scoring points.
- Divide the students into two teams.
- Clarifying the procedures of the game which are:
- * one point is calculated for the team that answers correctly in its turn.
- * a point is deducted for the team if it answers in the other team`s turn.
- Ask the question to the concerned team, and it has to find out what you are talking about. It is preferable to leave the question related to the taskbar until the end, so that it is the beginning of lesson.

Instructions

- Turn on the computer; make sure that the device is connected to a data show.
- Explain the taskbar parts to the students and the importance of each part.
- Ask the students to do the "Do & Observe" page 22.
- Teach the students how to turn off the computer correctly.
- Ask them to turn off their devices.
- Distribute the exit card to the students and ask them to draw a happy face if they are interested and sad face if they aren`t. And neutral face if they are not happy or sad.
- Let them stick the faces on the board. Count the number of happy faces, sad faces and neutral faces.

Resources

- desktop components presentation.
- Who Am I cards.
- Exit Cards.
- Taskbar Worksheet.

Evaluation Strategies

- Performance-based evaluation.
- Questions and answers.

Evaluation Tools

- Exit card

Enrichment Activity

- Assign the best students to write the names of three components of the taskbar.

Remedial Activity

- Taskbar worksheet.

Lesson 3: Mouse

Learning Outcomes

- To hold the mouse correctly.
- To learn how to handle the mouse.
- To define the usages of each method of using the mouse.

Time needed

- One class lesson.

Teaching strategies and classroom management

- Direct teaching - lecture / Learning through activity / Training

Warm Up

- Ask the students to hold the mouse each one in his own way.
- Follow the students by passing among them to notice the wrong ways to hold the mouse.

Instructions

- Select one of the students who holds the mouse correctly and ask him/her to do so in front of his/her classmates.
- Mention a wrong way and explain its dangers.
- Ask the students to hold the mouse correctly, if everyone do that, ask them to clap for themselves.
- Assign the students to color the mouse that mentioned in the activity page 25 within 10 mins.
- To find out the students' previous experience, ask the following question: Why do we use the mouse?
- Listen to the students' answers, discuss with them, clarify the uses of the mouse, represent it in front of them, and encourage them to try it.
- Make sure that the students master the previous skills by following up, evaluating, and assigning them to implement these skills.

- Assign students to carry out the activity page 26.
- Carry out the steps outlined in "Do & Observe" item page 26.

Resources

- how to hold the mouse video.

Evaluation Tools

- General evaluation of the unit - Rubric scale

Evaluation Strategies

- Performance based evaluation
- Observation.

Remedial Activity

- Assign the weak students to watch how to hold the mouse video.

Enrichment Activity

- Ask the distinguished students to right click on This PC and write the appeared options in their notebooks.
- Right click on an empty place on a desktop and write the appeared options.

Lesson 4: Windows 10

Learning Outcomes

- To identify the components of the window.
- To define the parts of the window.
- To resize and position the window.
- To arrange the windows.

Time needed

Two class lesson

Teaching strategies and classroom management

- Learning through activity - Training, games.
- Learning in groups - Group cooperative learning.

Preparing the portion

- Print robot maze. The number must be equal to number of students in the class.
- Be sure that "zoom it" app is downloaded to your device.

Do you remember?

- Use the (Who Am I) cards to remind the students of desktop components.

Warm Up

- Give the students the printed robot maze and tell them to connect the robot to the window in 5 mins.
- Ask the students what did they see when they opened the window?
- Listen to the answers and tell them why it is called a window.

Instructions

- Open a window in front of students and explain to them its parts while working on enlarging the screen through the "Zoom it" program to make sure that everyone is watching it.
- Assign the groups to work on "Do & Observe" in 10 mins.
- Assign the groups to work on the activity page 28.
- Follow up with the students and ask them questions during that, and record your observations.
- Implement the lesson skills of changing the size and location of the window.
- Assign each student in the group to practice this.
- Follow up the students and make sure that they master the previous skills.
- Assign the groups to work on "Do & Observe" page 29 in 10 mins.
- Assign them to carry out the first activity page 30, evaluate them during that, and record the observations.
- Explain how to display more than one window at the same time and implement the steps in front of them.
- Choose one of the students to carry out the arrangement of the windows in front of his classmates.

- Assign the students to change the order of the windows and follow them up.
- Assign them to carry out the second activity page 30 in 10 mins.
- Evaluates them during that, and record the observations.
- Assign the groups to work on "Do & Observe" page 31 in 5 mins.

Resources

- (Who Am I) cards.
- robot maze.
- "Zoom it" program.

Evaluation Strategies

- Performance based evaluation
- Observation.

Evaluation Tools

- General evaluation of the unit - Rubric scale

Remedial Activity

- Assign the weak students to practice opening the window and changing its size and location.

Unit Three

Paint 3D

3

Windows 10

Unit Learning Outcomes

- To open Paint 3D program and close it.
- To identify the components of Paint 3D window.
- To save the painting.
- To open a previously saved painting.
- To use the paint tools.
- To edit the painting.
- To draw 2D and 3D shapes.
- To edit pictures.
- To draw a beautiful painting.

Lesson 1: Paint 3D

Learning Outcomes

- To run Paint 3D Program.
- To identify the main screen parts.

Time needed

Two class lesson

Teaching strategies and classroom management

- This box introduces the units and asks the student some questions to discuss in pairs or in small groups.

Preparing the portion

- Download the electronic evaluation which is called Paint 3D on students' devices.
- Divide the students into groups.
- Print paint 3D worksheet (the number must be equal number of groups).

Warm Up

- Ask the students if any knows how to open a program downloaded on a computer.
- Select one of them to tell the classmate how he /she can run a program.

Instructions

- Use the data show to teach the students how to run paint 3D.
- Ask the groups to run the program.
- Explain the main screen components using "Zoom it" program and ask the students to point at the component that you talked about.
- Give the students 5 mins to do the activity page 34.
- Distribute the paint 3D work sheet to the groups and tell them to paste each component to its correct place. Follow them and write your observations.
- Assign the students to do the activity page 35.
- Do the activity in front of the students.
- Assign them to carry out the "Do & Observe" page 35 in 10 mins.
- Ask the students about how we close a window.
- Listen to the answers and teach them how to close the program, be careful not to save the work.
- Evaluate the students using e-evaluation Paint 3D evaluation.

Resources

- paint 3D worksheet
- Paint 3 D evaluation.

Evaluation Strategies

- Observation.

Evaluation Tools

- Check list.

Enrichment Activity

- Assign these students to write the tools name in their notebooks.

Remedial Activity

- Assign these students to run the program individually.
- Assign them to write the main screen components on their notebooks.

Lesson 2: Menu List

Learning Outcomes

- To recognize Menu list commands.
- To recognize the functionality of the Menu list commands.
- To open new painting.
- To save the painting with a new name.
- To open a previously stored painting.
- To save the painting.

Time needed

Two class lesson

Teaching strategies and classroom management

- Direct learning.
- Brainstorming.
- Cooperative learning.
- Active learning.
- Exploration

Preparing the portion

- Divide the students into groups.
- Print paint 3D worksheet (2) according to the number of groups).
- Cut the images and words in the worksheet.

Warm Up

- Assign one student to run paint 3D program and create a new panel, then remind the students what is the main screen components.

Instructions

- Remind the students that when they closed the program in the previous session, a message appears that asks if they want to save the work.
- Discuss them if they finished their painting and closed the program without saving, what will happen? Can they return to the painting?
- Explain to them the importance of saving the work.
- Use the data show to show them how to save the panel.

- Give the students 5 mins to run the program and save the panel, then close the program.
- Ask them how they can return to the panel; let them try.
- Explain how to open pre-saved panel.
- Let them open pre-saved panel.
- Teach them about the saved command and when it is used.
- Give 3 images and 3 words to each group, and put the rest on the table in front of the students, and ask them to search for the missing pictures and words from the menu list commands and collect the picture with the appropriate word. Follow their work and provide the necessary support.
- Record the observations during the session.
- Assign the students to do the activities page 37.

Resources

- paint 3D worksheet (2)

Evaluation Strategies

- Observation.

Evaluation Tools

- Check list.

Lesson 3: Paint Tools

Learning Outcomes

- To recognize the Brush menu.
- To use the colors box.
- To recognize Pen Tool.
- To use the pen tool to draw.
- To recognize brush tool.
- To use the brush tool to paint.
- To recognize the text tool.
- To use the text tool to write texts on the board.

Time needed

Two class lesson

Teaching strategies and classroom management

- Direct Learning.
- Cooperative Learning.
- Exploration.
- Traffic Light cups.

Preparing the portion

- Divide the students into groups using ClassDojo.

Do you remember?

- Ask the students about the commands in Menu list?
- Ask them again What is the usage of each command?

Warm Up

- Ask the students who likes drawing?
- Let some of them to show their paintings.
- Ask them again if they like to draw using Paint 3D program.
- Give them the time to run a program.

Instructions

- Use the data show to demonstrate the use of the pen tool and show them the types of pens and how to choose the color and the thickness.
- Give the students 8 mins to do the activity page 39.
- Follow the students up during the implementation of the activity, and remind them to use the traffic lights cups when necessary.
- Assign the students to implement "Do and Observe " p. 39.
- Direct the students to explore the brush tool and ask them to use it to write the letters of their group name, each letter with a different color and thickness. And let them tell you what is the difference between the two types of brushes.
- Direct the groups to implement the activity p. 40 in 10 mins, follow up their work and provide the necessary support.
- Assign the students to implement "Do and Observe "p.41.
- Ask the following questions to the students: What is the appropriate title for the painting that was drawn in the previous activity? How can I add the title to the painting?
- Listen to their answers, and then show them the importance of the text tool.

- Use the data show to show how to add the title to the board using the text tool.
- The teacher directs the students to add a title to the board using the text tool and follows up their work in the activity p. 41.
- Direct the students to implement (Do and reflect)p. 41 and ask them about their observations.
- Follow the students while closing the Paint program and shutting down the computer correctly.

Resources

- Paint tools worksheet.

Evaluation Strategies

- Performance based evaluation.

Evaluation Tools

- Rating scale

Enrichment Activity

- Assign these students to draw their dream car.

Remedial Activity

- Assign weak students to write their names many times, each time with different pen tool type and different color.

Lesson 4: Edit Paintings

Learning Outcomes

- To recognize the Undo tool.
- To use the Undo tool to modify the drawing.
- To recognize the eraser tool.
- To use the eraser tool to adjust the drawing.
- To recognize the cut tool.
- To use the cut tool to adjust the drawing.
- To recognize the copy tool.

Time needed

Two class lesson

Teaching strategies and classroom management

- Direct learning
- Inquiry
- Cooperative learning.
- Active learning.

Preparing the portion

- Print worksheet (4) according to the number of groups.
- Install the E-evaluation (Edit Painting) on students' devices.

Do you remember?

- Did the students remember how to save and open the painting?

Warm Up

- Ask the following question to the students: What do you do if you make a mistake while drawing on a paper?
- Listen to their answers and discuss them to come up with the topic of the lesson (Edit Painting).

Instructions

- Distribute the paintings o in the worksheet (4) and ask them to think of a way to turn the original painting into the final painting and set the time required for them to implement it on paper, then discusse with them to come up with the methods that are used to modify the drawing.
- Use the data show to explain the undo tool and its importance during drawing.
- Direct the groups to implement activity p.42 in 10 mins. Follow up their work, and remind them to use the undo tool when necessary.
- Assign the students to implement (Do & Observe) p. 42 then ask them about their observations.
- Teach the students how to use the eraser tool and how to determine its size and color.
- Direct the students to carry out the activity p. 43.
- Ask the students, what to do if they want to take a part of an image?
- Listen to their answers to learn about the previous experience and discuss them until you reach to the importance of selection.
- Show how to select a part of an image.
- Teach them how to cut. How to use the cut tool to move a part of the drawing to another place or delete it.

- Follow up the students during the implementation.
- Direct the groups to implement (Do & Observe) p.44 and ask them about their observations.
- Ask the students if they need to duplicate a part of drawing, what can they do? Did they draw it again? Or is there a way that facilitate the task?
- Explain in front of the students how they can duplicate a part of drawing.
- Direct them to carry out the activity p. 46 and follow up on their work and provide the necessary assistance.
- Direct the groups to do (Do & Observe) p.46 and ask them about their observations.
- Record your notes each time the students implement an activity.

Resources

- worksheet (4)
- E-evaluation (Edit Painting).

Evaluation Strategies

- Performance-based evaluation

Evaluation Tools

- Rating scale.

Enrichment Activity

Remedial Activity

- Assign the weak students to draw the painting in the worksheet (4).
- Assign them to make the changes in the worksheet to the image and save the changes.

Lesson 5: Shapes

Learning Outcomes

- To recognize 2D shapes and 3D shapes.
- To draw two-dimensional shapes.
- To edit two-dimensional shapes.
- To draw three-dimensional shapes.
- To edit three-dimensional shapes.

Time needed

Two class lesson

Teaching strategies and classroom management

- Direct Learning.
- Inquiry.
- Collaborative Learning.

Preparing the portion

- Divide the students into groups.
- Provide 2D images and 3D images for the same things.

Warm Up

- Show the images for the same thing in 2D and 3D and ask the students to explore the difference between them and keep that in their mind until the end of the lesson.

Instructions

- Show a group of pictures that represent different shapes (2 Dimensional) and ask the students to name them.
- Direct the students to explore a group of 2D shapes by clicking the 2D shapes tool then point the arrow over the shape to be provided. Ask them to name three shapes.
- Use the data show to show how to draw a shape with a colored frame.
- Give the students 10 mins to draw a 2D shape and follow up the students during the implementation.
- Use the data show to show the filling tool and assign the students to draw two shapes, one filled with color and the other unfilled, then discuss with them the importance of colors for drawing.
- Direct the students to try to draw a shape with a colored frame filled with color and provide them with the necessary support.
- Direct the students to carry out the activity p. 49 and follow up on their work.
- Direct the students to do (Do & Observe) p. 49 and ask them about their observations.
- Give the groups 10 mins to draw a 3D shape as they did in the 2D shapes and follow up the students during the implementation.

- Assign them to explore how to change the color of 3D shape and provide them with the necessary support.
- Draw a 3D shape in front of the students and edit the color.
- Direct the students to carry out the activity p. 51, follow up on their work, record your notes.

Evaluation Strategies

- Performance-Based Evaluation

Evaluation Tools

- Rating scale.

Enrichment Activity

- Let the best student use the 3D shapes to draw a cover photo for a story.

Remedial Activity

- Let weak students combine the 2D shapes and 3D shapes to draw a painting.

Lesson 6: Pictures

Learning Outcomes

- To adjust the size of an image.
- To recognize rotation options.
- To rotate the image and the shape.
- To recognize the crop tool.
- To cut out a part of a figure or image using crop tool.

Time needed

Two class lesson

Teaching strategies and classroom management

- Direct learning.
- Active learning.
- Cooperative learning.
- Exploration.
- Traffic light cups.

Preparing the portion

- Prepare a set of pictures and shapes, distribute them to the groups, and ask each group to classify them into pictures and shapes, then discuss with them the concept of pictures and shapes.
- Ask the students to bring scissors and a mirror.
- Print worksheet (4) according to the number of groups.

Do you remember?

- This box lists the skills the students should already have before starting the unit.

Warm Up

- Distribute the worksheet (4) to the groups and ask each group to have a specific task (according to what is shown in the worksheet).
- Provide them with the necessary support and remind them to use traffic lights cups, then present them with each task to

Instructions

- Use the data show to show how to resize an image and watch the students in action.
- Direct the students to explore the list of rotations and its options and apply them to the image (Sea) that is stored on the desktop in practice, and to notice the difference on the image and connect It to what they did in the worksheet to reach the concept of each type of rotation
- Use the data show to show each type of rotation and to show the students the difference between them.
- Direct the students to select a part of the image, choose Crop, then undo, select the same part again, and choose Cut, and ask them about the difference between cropping and cutting.
- Direct the students to do the activities p.56 and 57 and follow up on their work.
- Direct the students to implement (Do & Observe) p. 55 and ask them about their observations.
- Follow the students while the paint program is closed on the computer.

Resources

- worksheet (4)

Evaluation Strategies

- Performance/observation-based evaluation.

Evaluation Tools

- Anecdotal Record.

Lesson 7: I'm Creative Painter

Learning Outcomes

- To measure the extent to which the unit's outputs are achieved.
- To measure the student's ability to use the skills he/she has learnt to produce a beautiful and expressive painting.
- To measure the student's ability to be creative and innovative.

Time needed

Two class lesson

Teaching strategies and classroom management

- Learning based projects.

Preparing the portion

- Tell the students about the projects and they have to use all the skills they have learnt in the unit and the standards they will be evaluated on them.

Instructions

- Direct the groups to choose a topic from the topics mentioned in the lesson or any topic they prefer.
- Determine the time required to complete the painting (at least two sessions).
- Inform the students how to evaluate the painting.

Evaluation Strategies

- Performance based evaluation.

Evaluation Tools

- Numerical rating scale.

Unit Four

Introduction to Scratch

4

Lesson 1: Scratch Program

Learning Outcomes

- To know the usage of Scratch program.
- To download Scratch program.
- To run Scratch program.
- To change the language that is used in Scratch program.
- To recognize the usage of the file

Time needed

Two class lesson

Teaching strategies and classroom management

- Direct Learning.
- Inquiry.
- Collaborative Learning

Did the student remember?

- How to open Paint 3D program?

Preparing the portion

- Divide the students into groups.
- Install Scratch program into students' devices.

Warm Up

- Ask the students if they play electronic games? Let the students who play games raise their hands.
- Ask them if anyone knows how these games were designed.
- Discuss the students until you reach the coding concept.
- Let the students play the cat scratch puzzle from the resource part without tell them what is the picture in 10 mins.
- If no one solves it in 10 mins, show the Scratch cat on the board and ask them if anyone has known it before.
- Tell the students that you will teach them one of the most beautiful and simplest coding programs which is called Scratch. And this cat will accompany us in this unit because it is the main character in the Scratch program.

Instructions

- Download Scratch program in front of the students on your device and tell them that you have installed it previously in their devices. And you teach them that to install the program on their home devices.
- Give the students 5 mins to open Scratch program. (Activity P. 61).
- Ask them about the second activity p. 61.
- Tell the students that there is another Scratch editor they can use it online if they don`t have a computer, they can use it on the smart phone or tablet.
- Open the online editor in front of them, then let them open it.

- Let groups read what was written on About Scratch silently by pressing the button in 5 mins. And summarize what is the advantage of learning Scratch coding.
- Ask them what is the globe icon means for them.
- Listen to their answers and tell them how to change the language using this icon.
- Remind the students how they were saving a painting or
- opening another one and connect it with the Scratch file menu.
- Remind them again how they were closing Paint 3D program and connect it with Scratch program.
- Record your notes until you followed the students up.

Resources

- Scratch Cat puzzle.
- Scratch Program.
- Online Scratch editor.

Evaluation Strategies

- Observation.
- Performance based evaluation.

Evaluation Tools

- Check list.

Enrichment Activity

- Let the good students support the weak students.

Remedial Activity

- Let weak students open the program, change the language and close it.

Lesson 2: Project

Learning Outcomes

- To explain what is meant by: (project, block, stack, script).
- To explain the importance of blocks.
- To plan for his own project.
- To identify the name of his project and the main Idea.
- To select the characters of his/ her project.
- To identify what the characters can do.

Time needed

One class lesson

Teaching strategies and classroom management

- Direct learning/ Lecture/ Use the book.

Did the student remember?

- How to run Scratch program?
- How to change the language of the program?

Preparing the portion

- Bring Lego blocks.

Warm Up

- Show how we can save water more. Select the video from the multimedia folder.
- Ask the students these questions:
  - What is the article of the video?
  - What is the Idea of the video?

Instructions

- Explain to students that the project consists of characters which are called Sprites in Scratch program. These sprites are controlled by scripts which consist of stacks, and each stack consists of blocks. This like make a building from a group of Lego blocks, each block in Scratch program is like a Lego block, you can build using these blocks.
- Assign the students to do the activity P. 65.
- Ask the students to donate one of them to be asked in front of his/her classmate.
- Ask the students about his/her favorite story , what is it?
- What is the title of it?
- Who is the main character for it?
- What is the idea of the story?
- After the student answers the questions, ask the students if anyone wants to ask him anything else about his/her favorite story?
- Let them ask him/her.
- Let the students do the activity p.66, evaluate the students.

Resources

- How we can save water more video saved in multimedia folder.

Evaluation Strategies

- Pencil and paper (activities).

Evaluation Tools

- Overall evaluation of the Fourth unit

Enrichment Activity

- Let these students talk about their projects in front of the students.

Remedial Activity

- Let weak students draw their projects using the Paint 3D program.

Lesson 3: Let's Start with Scratch

Learning Outcomes

- To recognize the main parts of Scratch program.
- To recognize the color of each blocks category.

Time needed

Two class lesson

Teaching strategies and classroom management

- Direct learning/ Lecture.

Did the student remember?

- How to run Scratch program?
- What is the project, blocks and scripts?

Preparing the portion

- Divide the students into pairs groups, each group consists of an excellent student and a weak student.

Warm Up

- Run the Scratch program in front of students using data show.
- Ask the students if the main screen of Scratch program is similar with the main screen of Paint 3D program.
- Ask them about the similarities between the two screens and the differences as well.
- Listen to their answers.

Instructions

- Explain the Menu bar contents in Scratch program and the importance of each one.
- Give the students 5 mins to do the activity p. 68 and correct it.

- Explain the other parts of the main screen of Scratch program and the importance of each one.
- Let the students do the activity p. 69.
- Do the activity in front of the classmate.
- Explain the block area and how it is classified into categories, the color of each category, what is the usage of it and if it has special shape.
- Give the students 10 mins to do the activity p. 70.
- Follow the students up during they do the activity and record your notes.
- Explain the scripts area and how to drag and drop the blocks.
- Give them 10 mins to do the activity p. 71.
- Follow them up and record your observations.
- Explain the sprites list in front of the classmate.

Evaluation Strategies

- Communication / Questions & Answers.

Evaluation Tools

- Rating scale.

Enrichment Activity

- Let this student make a stack from different blocks and see what happened for the sprite.

Remedial Activity

- Let this student repeats the parts in front of his partner in pairs groups.

Computational Thinking

- Ask the students how can we make the sprites move?

Lesson 4: Scratch Sprites

Learning Outcomes

- To recognize the two parts of the scratch list.
- To rename the sprite.
- To change the location of the sprite.
- To resize the sprite.
- To hide the sprite.
- To delete the sprite.
- To restore the sprite.
- To add a new sprite.
- To add a background.

Time needed

Two class lesson

Teaching strategies and classroom management

- Learning based activity.
- Practice.
- Exploring.

Did the student remember?

- How to run Scratch program?
- What is the project, blocks and scripts?
- The parts of the main screen of the Scratch program.

Warm Up

- Run the Scratch program and ask one student to remind his/her classmate the parts of the main screen of the program.
- Ask the groups to change the values on the Scratch list parts one each time and notice what is the difference.

Instructions

- Explain to the students that the scratch list consists of two main parts (Miniature sprites and miniature stage).
- Change the name of the sprite in front of them.
- Let them change the name of the sprite in their devices in 2 mins.
- Change the location of the sprite in front of them.
- Let them do the second activity p. 73.
- Change the size of the sprite in front of them.
- Let them do the third activity p. 73.
- Ask the students to explore what will happen if they click on the eye button (not shown).
- What do they notice?
- Let them click on the eye again.
- What do they notice?
- Delete the sprite in front of the students.
- Ask them to delete their sprites.
- Teach them how to restore the sprite and let them do that. (Activity p.74)
- Let them do the (Do & Observe) p.74 and ask them about their observation.
- Add a new sprite in front of them using search tool.
- Give them 5 mins to do the first activity p75.

- Let them do the (Do & Observe) p.75 in 15 mins and ask them about their observation.
- Upload a sprite from your device in front of the students.
- Let them try that.
- Add a background in front of them.
- Let them do the second activity page 75. Record your notes and give them support if necessary.

Evaluation Strategies

- Observation.
- Performance based evaluation.

Evaluation Tools

- Rating scale.

Enrichment Activity

- Let them draw their own sprites and write on their notebooks what are the options available in the Scratch paint editor.

Remedial Activity

- Let them add sprites from library and a suitable background.

Computational Thinking

- Ask the students if they can add more than 2 sprites and how they can interactive with each other.

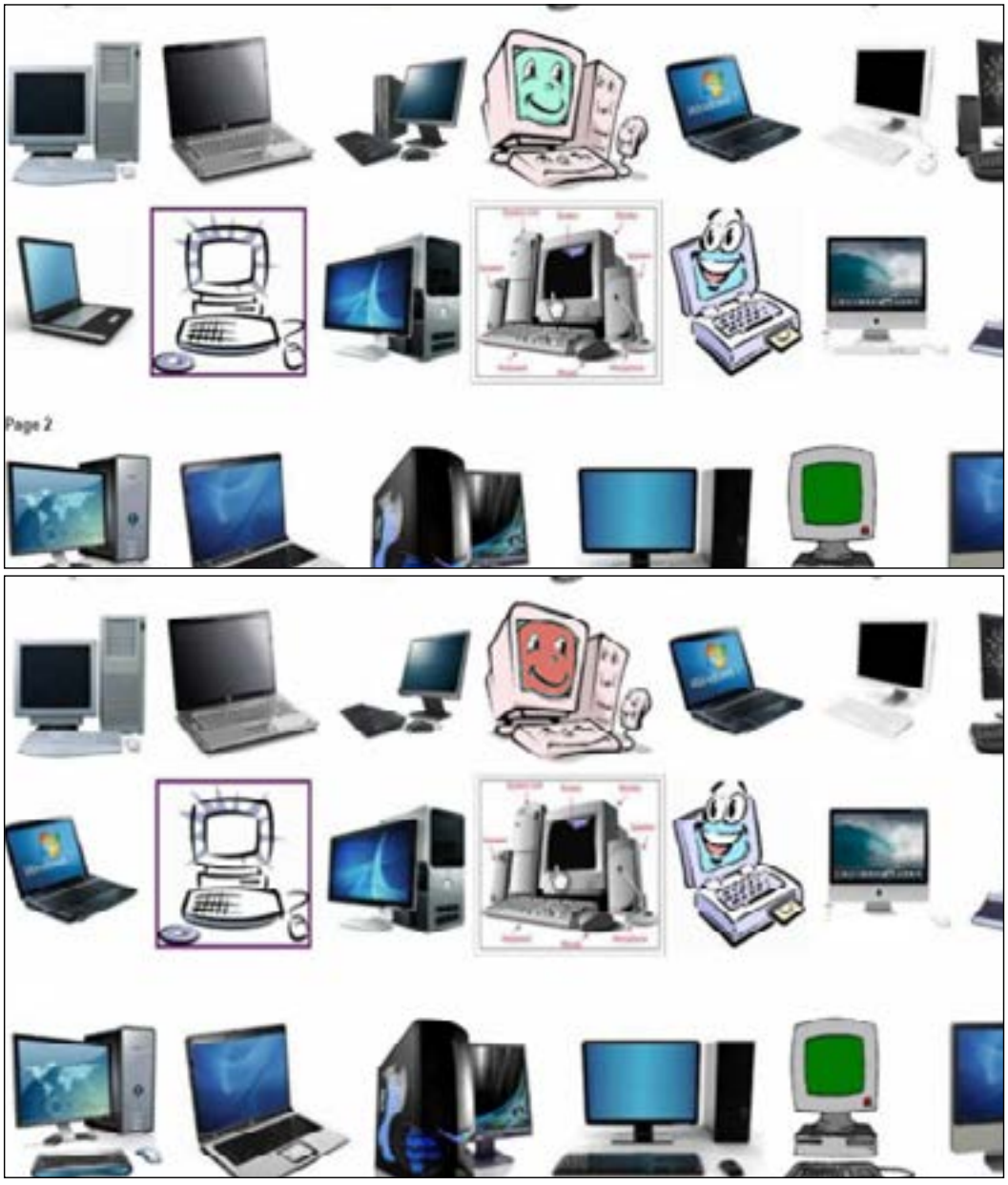
Appendices & Worksheets

Unit One 1: Computer and life

Lesson2: Computer Components

Worksheet (1)

Little thinker: Find the difference between the two images.



Lesson3: Right Rules to Use a Computer

Worksheet (2)

- Click on one of the letters in the table, you will see a picture that shows a right or wrong behavior in dealing with the computer. Discuss the situation with your group, decide if it is right or wrong. Then put a sign (√) or (×) in the table below and what is the error and right points in it.

A	
B	
C	
D	
E	

- **Note:** Each time the teacher chooses a student from the groups to represent the situation, and discuss the students with the errors they saw in dealing with the computer.

- The teacher must save the work sheet pictures that attached to the teacher guide (L1) in the folder named L1 on the desktop and check the links.

Overall evaluation of the first unit / Chick list

Assessment Strategy: Observation (structured observation).

Assessment too: Check list.

No	Name	Determine places where the computer is used		Define the computer		Explain the computer principle of work	
							

Differentiate between the input units and output units		Distinguish the correct and incorrect behavior in dealing with the computer		Shut down the computer properly		Notes
						

First unit Exam

- In the following table, color the box for the input units in red and the box for the output units in yellow.

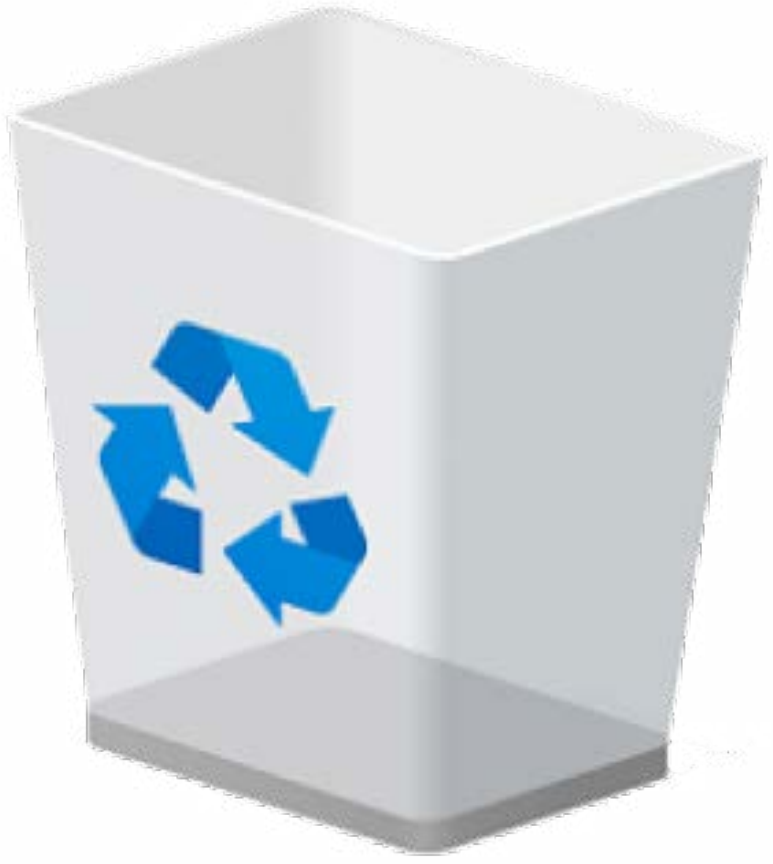
- Put (√) in front of the place where the computer is used and put (X) in the place where we do not see the computer.


- Look at the following pictures and then circle the wrong behaviors.


Unit Two 2: Windows 10

Lesson1: Operating System

- The teacher cuts the icons pictures and their names separately to use them as described in the lesson



Recycle Bin

This PC

User Files

Networks

Start Button

- The teacher cuts the (Who Am I) cards and uses them as described in the lesson:

Who Am I

A blue screen appears when you press the power button.

A small graph or picture that represents a gate to program or file.

An icon that allows you to access everything stored on your computer.

An icon that enables you to view all your files and folders.

A virtual place where the deleted files and folders kept.

Contain the devices connected to the network.

A bar at the bottom of the screen, you can access many components using it (from it).

Lesson2: Task Bar

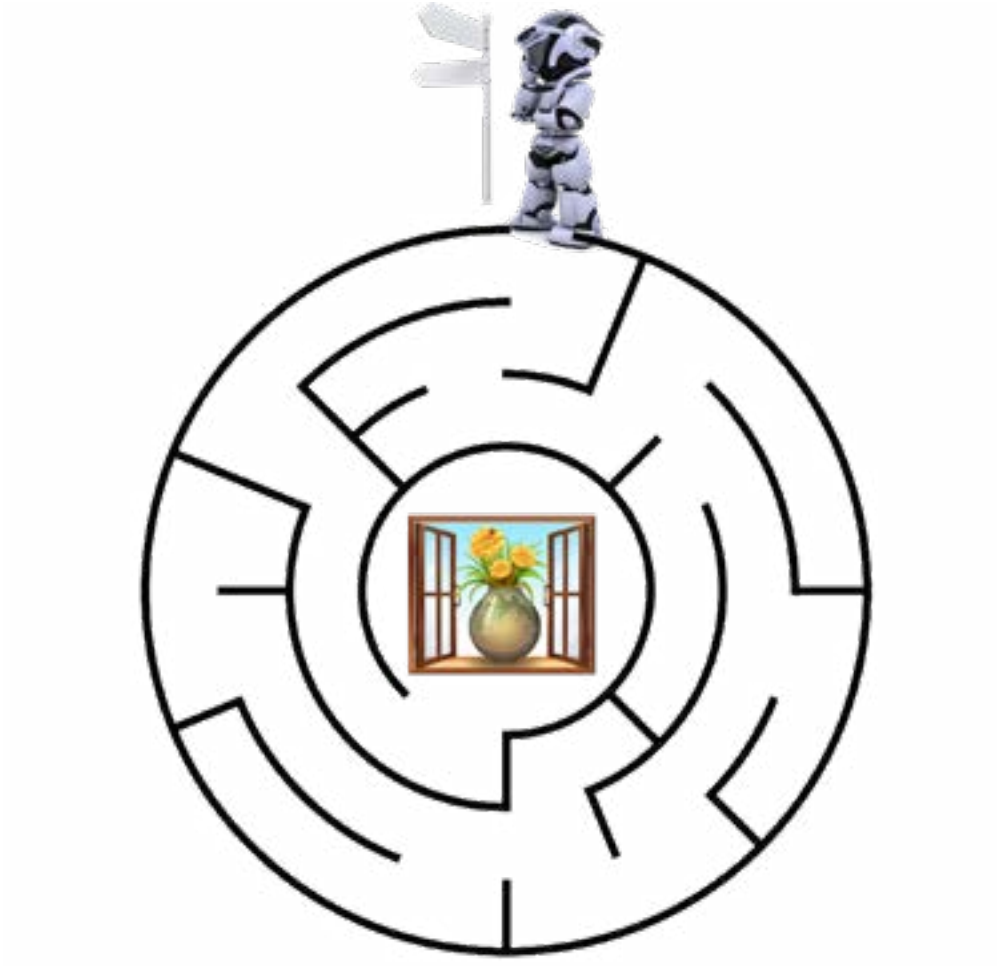
Taskbar worksheet

- Draw the missing parts in the following taskbar and write the names of taskbar components.

Lesson4: Windows 10

Robot Maze

- Little Creator: Use your beautiful colors to draw a colorful path that connects our friend robot to the window



General Assessment of the Second Unit

Assessment Strategy: Observation

Assessment tool: Rubric

	First Level	Second Level	Third Level	Fourth Level
	Shows very little knowledge and the skills required are limited (The investigator is a lot lower than the standard).	Shows some knowledge and skills required. (The investigator is approaching the standard).	Most knowledge appears and skills required (Check the standard results).	Shows almost all knowledge and skills required (Results exceed standard).
Define the operating system, desktop, and its components.	Knows that the device only works when it is turned on and does not know that the operating system also works.	Knows that the first screen appears called the desktop but does not know the importance of the operating system or the components of the desktop.	Knows that the first screen appears called the desktop and knows its components, but does not know the importance of the operating system.	knows that the first screen appears called the desktop and knows its components and knows the importance of the operating system.
Defines the taskbar and its parts	Can use the Start button but does not know that it is part of the taskbar	knows the taskbar and knows that the Start button is one of its main parts and knows the rest of its parts	knows the taskbar and identifies its components and changes the language of the device	knows the taskbar and determines its components and changes the language of the device as well as the clock and date
Mouse	does not hold the mouse properly but distinguishes between its buttons	Holds the mouse correctly and distinguishes between the left and right buttons and does not know it uses	Holds the mouse correctly, distinguishes between the left and right buttons, knows it uses.	Holds the mouse correctly, distinguishes between the left and right buttons, knows its uses, and apply.

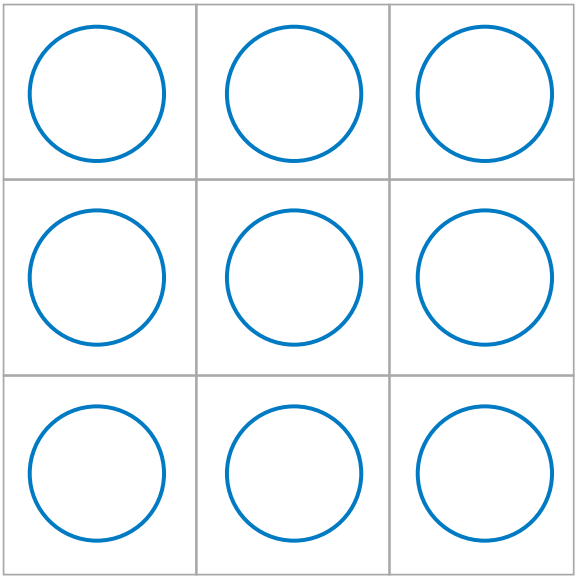
	First Level	Second Level	Third Level	Fourth Level
Defines the window its main components	Defines the window	Defines the window and defines its main components	Defines the window and identifies its main components and marks them	Defines the window, defines its main components, indicates them and mentions their importance
Changes the size and position of the window and shows more than one window at the same time	Can only change the location of the window	Changes the location of the window and resizes it	Can change the location and size of the window and shows more than one window at the same time	Can change the location and size of a window, show more than one window at the same time, and appear the desktop.

Lesson2: Task Bar

Exit cards

Assessment Strategy: Performance-based evaluation / questions and answers.

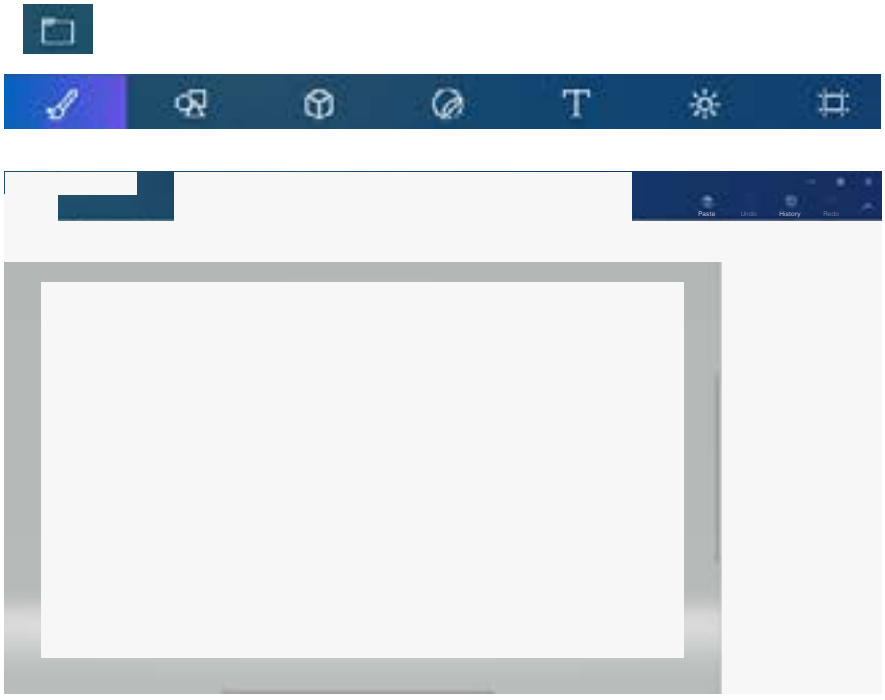
Assessment tool: Exit card



Unit Three 3: Paint 3D

Lesson1: Paint 3D

Paint 3D Worksheet (1)



Lesson1: Paint 3D

Assessment tool (1)

Assessment Strategy: Observation

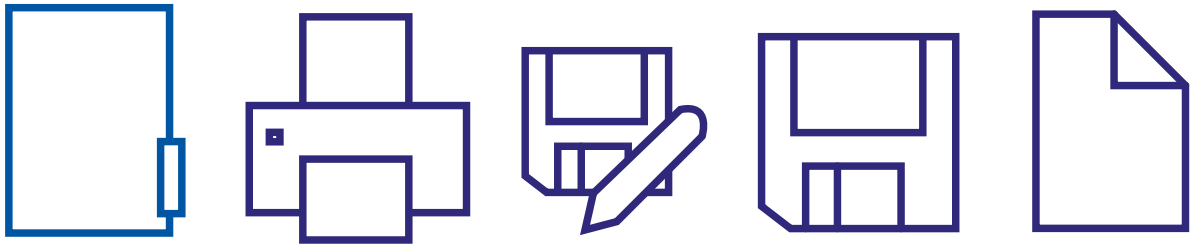
Assessment too: Check list.

No	Name	Run Paint 3D program	Distinguish the components of Paint 3D Program	Close Paint Program	Degree of mastery

Lesson 2: Menu List

Work sheet (2)

- Cut the following images and words for Paint Button commands and use them as described in the lesson



حفظ Save	جديد New
حفظ باسم Save as	فتح Open

Lesson 2: Menu List

Assessment (2)

Assessment Strategy: Observation

Assessment tool: Check list.

No	Name	Mentions List Menu commands	Recognizes the functions of List Menu commands	Create a new panel

Saves a panel with a new name	Opens a pre-stored panel	Save a panel	Degree of mastery	
			Yes	No

Lesson 3: Paint Tools

Worksheet (3)

- Little painter: Consider the following picture:

- Circle the tools used in the drawing:

a.  b.  c. 

- The tool that used to write (Lovey Home) is:

a.  b.  c. 

- The colorbox that is used for the line of drawing is:

a.  b. 

Lesson 3: Paint Tools

Assessment (3)

Assessment Strategy: Performance-based evaluation

Assessment too: Rating scale

No	Name	Recognizes the pen tool (pen)			Uses the pen tool for drawing			Uses the brush tool for drawing		
		Excellent	Very Good	Good	Excellent	Very Good	Good	Excellent	Very Good	Good

Recognizes the Text Tool (Text)			Uses a text tool		
Excellent	Very Good	Good	Excellent	Very Good	Good

Lesson 4: Edit Painting

Worksheet (4)

- Little Painter: Think about how to turn the original image into each of the corresponding images:

Original Image

Lesson 4: Edit Painting

Assessment (4)

Assessment Strategy: performance-based evaluation

Assessment tool: Rating scale

Name: **Date:**

No.	Standard	Mastery		
		Excellent	Very Good	Good
1.	Distinguish the undo tool			
2.	Use the Undo tool to edit the graphic			
3.	Distinguish the eraser tool			
4.	Use the eraser tool to modify the drawing			
5.	Distinguishes the importance of selection			
6.	Distinguish the cut tool			
7.	Use a cut tool to modify the drawing			
8.	Distinguish the copy tool			
9.	Use the copy tool to modify the drawing			

Lesson 5:Shapes

Assessment (5)

Assessment Strategy: performance-based evaluation

Assessment tool: Rating scale

Name: **Date:**

No.	Standard	Mastery		
		Excellent	Very Good	Good
1.	Recognize 2D shapes and 3D shapes.			
2.	Edit two- dimensional shapes.			
3.	Draw two- dimensional shapes.			
4.	Draw three - dimensional shapes.			
5.	Edit three - dimensional shapes.			

Lesson 6: Pictures

Worksheet (5)

Original Image




- The teacher will cut the pictures, distribute the original pictures and one of the modified pictures to the students and ask the groups to use the tools they brought (scissors, mirror) to access the modified image.

The Original Picture



Assessment (6)

Assessment Strategy: performance-based evaluation

Assessment tool: Rating scale

Name:	**Class:**
Subject:	
Problem:	
Notes:	
Suggestions:	

Assessment (7)

Assessment Strategy: performance-based evaluation

Assessment tool: A Numerical Rating scale

Name: **Date:**

No.	Standard	Degree of Mastery		
		Excellent	Very Good	Good
1.	Run Paint 3D			
2.	Use the pen tool to draw			
3.	Use the brush tool to paint			
4.	Use text tool to write texts on the board			
5.	Use the Undo tool to modify the drawing			
6.	Use the eraser tool to adjust the drawing			
7.	Use Select tool correctly			
8.	Use crop tool to edit the drawing			
9.	Coordinating the colors of the drawing			
10.	Draw a 2D shape with a colored frame			
11.	Use the Fill tool to fill a shape with color			
12.	Draw a filled 3D shape with color			
13.	Draw an expression of the idea			
14.	Save the drawing correctly			
15.	Paint closes properly			

Unit One 4: Introduction to Scratch Program

Overall evaluation of the Fourth unit / Check list

Assessment Strategy: Observation (structured observation).

Assessment too: Check list.

No	Name	Open Scratch Program		Change the language		Know the parts of the program screen	
							

Explain the importance of each part.		Deal with sprite		Change the background		Notes