Grade	4	Subject	DT	Lesson number	1	Week number	1
Unit		Date		Time		Page number	
1		02/09/18		45 minutes		9-17	

Equipment required:	Learning objectives
DT book G4 Computers/laptops Scratch	1.1. Define the term programming and its features. Complete activities 1-3.
Keywords	Programming language, coding

Starter/Introduction activity

Time	
5 mins	Introduce Unit 1 overview. Outline keywords and the learning outcomes of Unit 1. **Activity 1:** Starter word search on keywords. This does NOT need to be completed today. (Give 5 mins for word search and then move on)
5 mins	**Introduction to Scratch**  Y W E Z V F H Q I R Q P H Q C K L Z Y B N Y A R F L O W C H A R T L J O F T M S P R I T E R M G P A M X C D K F R Z T R S E A C B H D D F X D A J Q N R C B B I A A K M C O D I N G L C C M K M M X S T A G E M E W Z I A I B D C G Z J U Y F N A L G O R I T H M Y E G I D K K P S C R A T C H

Main

Time	
10 mins	This lesson will introduce **programming**, it will focus on the absolute basics of **programming** or, as it's also called, **coding.** Encourage classroom discussion here to create interest in the classroom. See if any students are already using **coding** at home or if they have any prior knowledge about it. Use analogies and examples of **coding** which students can identify with at this current time: **Example:** Computer games: Fortnite is very popular. Use this to gain interest. **Activity 2:** This can be completed via discussion or in groups. Work with students' prior knowledge and find out how they know these words, if any.

15 mins	Introduce **Programming language:** Students will only need to understand the basics. To keep students interested make sure to use popular examples of programming language. Explain that programming languages can work like a spoken language. For example, the students can understand Arabic and are learning to understand English. In programming, one specific language will be used to create a software, game etc. **Activity 3:** Write down if the images show possible programming languages or regular speaking languages. Teacher's answers: 1. No 2. Yes 3. No 4. Yes 5. Yes
Plenary	
Time 5-10 mins	Summarise lesson. Do students have a greater understanding of programming? Can they give some examples of programming? Use peer correction for activity 3 (Swap books and correct). If time allows students can finish word search.
Assessment focus	Identify what **programming/coding** is. Acknowledge there are multiple **programming languages**.
Learning curve	The entire course plus specific instructional videos are available on Learning curve via this link. https://learningcurve.moe.gov.ae/en/default/Course#/view/2280/false/2335/Home Access code: CdScISPHcUaRPaZSe_9tHg

Grade	4	Subject	DT	Lesson number	2	Week number	1
Unit		Date		Time		Page number	
1		02/09/2018		45 minutes		17-23	

Equipment required: DT book G4	<u>Learning objectives</u> 1.2. Explain the term algorithm and show a basic understanding of it. Complete activities 4-6.
keywords	Algorithm, Scratch, Interface

Starter/Introduction activity	
Time 5 mins	Brief recap of previous lesson on **Programming/languages.** Introduce **Algorithms**. Outline Keywords and learning outcomes for lesson. Watch YouTube video to help explain algorithms: Video 1: https://www.youtube.com/watch?v=Da5TOXCwLSg Create some examples of algorithms on the boards and complete with the whole class. **Activity 4:** Complete activity 4. Fill in the blanks. Ensure students understand algorithms (instructions) from previous discussion and example videos. Teacher's answers 2. Get on the bus. 5. Go to assembly. 8. Go on break. 9. End
10mins	

Main	
Time	This lesson will introduce **Algorithms**, it will focus on the importance of algorithms to help with **programming**. Algorithms can be described as specific instructions a programming language will follow to produce results.

5 mins

Algorithm	Steps
Get in car.	6
Get dressed.	2
Go home.	11
Get up.	1
Have fun in the park.	9
Enter Motiongate.	8
Brush teeth.	3
Leave Motiongate.	10
Pack bag.	5
Drive to Motiongate.	7
Eat breakfast.	4

Activity 4: Motiongate

Complete the 2nd part of activity 4 by ordering the algorithm from 1-11.

Teacher's answer

Activity 5:

10 mins

Students can complete **activity 5** in pairs/groups.
They should be able to describe how to go to the mall.

This can be broken down and created on the boards by getting groups to come up and write their algorithms or at least some steps in their algorithm.

Teacher's answers:

Will vary as no 2 trips to the mall will be identical.
Main objective is to clarify that students know why and how algorithms are used:

10 mins

Introduce Scratch briefly. Question students to see if any are familiar with the program.

Explain 'interface' briefly. Look at the example in the book and describe more examples

Activity 6:

	Students should make a sketch to show their favourite website's homepage interface. **Answers will vary, looking for understanding of an interface here only. Sketch quality is not vital, but always encourage best practice.**
Plenary	
Time 5 mins	Summarise lesson. Do students understand **algorithms**? Can they create examples of **algorithms** and complete activities? Can they identify what an 'interface' is and give examples of this from their favourite websites/games?
Assessment focus	Identify what **algorithms** are. Acknowledge there are multiple **programming languages**. Sketch a basic interface from a website/game.
Learning curve	The entire course plus specific instructional videos are available on Learning curve via this link: https://learningcurve.moe.gov.ae/en/default/Course#/view/2280/false/2335/Home Access code: CdScISPHcUaRPaZSe_9tHg

Grade	4	Subject	DT	Lesson number	3	Week number	2
Unit		Date		Time		Page number	
1		09/09/2018		45 minutes		23-30	

Equipment required:	Learning objectives
DT book G4 Scratch 2.0 or later	1.3. Describe the block programming interface of Scratch. Complete activity 7
keywords	Stage, sprite, script

Starter/Introduction activity	
Time 5 mins	Brief recap of previous lesson on **algorithms:** Introduce **Scratch interface:** Outline Keywords and learning outcomes for lesson. Previously, students will have looked at interface briefly and created a sketch to help with their understanding.
5mins	Now focus on interface for **Scratch,** particularly looking at **'Sprite', 'Stage'** and **'script'**. This can be displayed by using Scratch through the projector or on a smart board. There are also a lot of videos on YouTube which may help you. Video 2 https://www.youtube.com/watch?v=DBDROODrxD8&t=56s (Skip to 46 seconds.)
Main	
Time	Get students to open **Scratch 2.0** on the desktop computers or laptops. Version of 2.0 or later should be used and previously installed on all computers/laptops by the MOE. A new version of Scratch 3.0 will be released soon and can be used if available in schools.

10-15mins 15 mins	**Explore:** Allow students some time to explore Scratch and get familiar with the interface/controls. **Activity 7:** Students should then complete activity 7 by following the step-by-step guide in the book. Focus needs to be given to **'Saving the Scratch file'.** As multiple students may use the same work space/ computer. It is important students can save the files into specific folders on the PC. With their name and class number included: **Example:** **'Scratch 1_MariamAbdulla_4.2'**
Plenary	
Time 5 mins	Summarise lesson. Do students understand **interface**? Can they access Scratch 2.0 and use the interface? Have all students got a good understanding of how to save the Scratch files correctly?
Assessment focus	Identify Scratch **interface**. Explore within Scratch 2.0 and complete activity 7. Saving files properly is essential.
Learning curve	The entire course plus specific instructional videos are available on Learning curve via this link: https://learningcurve.moe.gov.ae/en/default/Course#/view/2280/false/2335/Home Access code: CdScISPHcUaRPaZSe_9tHg

Grade	4	Subject	DT	Lesson number	4	Week number	2
Unit		Date		Time		Page number	
1		09/09/2018		45 minutes		30-35	
Equipment required: DT book G4 Scratch 2.0 or later				<u>Learning objectives</u> 1.4. Apply basic control commands in Scratch by writing small programs.			
Keywords				Stage, sprite, script			

Starter/Introduction activity	
Time 5 mins	Brief recap of previous lesson on **interface and Scratch:** Outline Keywords and learning outcomes for lesson. Discuss the importance of saving files yet again. Ask some students to come up and give an example of this on the board.
5mins	All students should be able to open previously saved file from **activity 7** in the last lesson. Example: **'Scratch 1_MariamAbdulla_4.2'**
Main	
Time 10-15mins	Students will continue to work through the book and learn new block coding within Scratch. Students should be continuing to work with the saved file from the previous lesson. Follow the step-by-step guide under **'Using Scratch'**. This is a good opportunity to learn about different programming features of Scratch, while creating small activities and games. Save work and run the code: **Activity 8:** Write down what happens in the stage area when you run the code: Run the code. It acts as a **Test** to see if the program works.

15 mins	Teacher's answers The sprite says 'hello'. The sprite says 'Hmm…. What will I do after school today?' The sprite 'switches costume'. Continue to follow step-by-step guides for **'moving in Scratch'**. Save the program again and run the code: For activities 9 and 10, some discussion can be introduced to help students with describing what happens while the program is running. **Activity 9:** Teacher's answers You can see the sprite move around the stage. It is clear to see how it moves. It starts from the centre every time the program runs. **Activity 10:** Teacher's answers The sprite jumps from start point to end. It moves very fast. It looks like the sprite is moving in a circle around the stage. You cannot see it take steps. You cannot see it change direction. You cannot see it start in the centre each time you run the program.
Plenary	
Time 5 mins	Summarise lesson. What do **'look'** blocks make the program do? What do **'motion'** blocks make the program do? What different stages may be created by combining these together? Ensure all files are being saved correctly and with the appropriate **'file name'.**
Assessment focus	Learn about different block commands in Scratch programming, specifically '**looks'** and **'motion'** for this lesson. Save files properly with the appropriate file name.
Learning curve	The entire course plus specific instructional videos are available on Learning curve via this link: https://learningcurve.moe.gov.ae/en/default/Course#/view/2280/false/2335/Home Access code: CdScISPHcUaRPaZSe_9tHg

Grade	4	Subject	DT	Lesson number	5	Week number	3
Unit		Date		Time		Page number	
1		16/09/2018		45 minutes		35-39	

Equipment required:	Learning objectives
DT book G4 Scratch 2.0 or later	1.4. Apply basic control commands in Scratch by writing small programs. Pop Quiz 1
Keywords	

Starter/Introduction activity	
Time 5 mins	Brief recap of the previous lesson on **using Scratch and moving in Scratch:** Outline keywords and learning outcomes for the lesson. Discuss main features of '**looks'** and '**motion'** blocks.
Main	
Time 10mins 10 mins 15 mins	Students will continue to work through the book and learn new block coding within Scratch. Students will work on '**moving continued'.** Follow the guide in the book and complete **Activity 11:** First discuss activity 11 in small groups, then fill in the blanks on the image in the book before completing the activity in Scratch. Save work and run the code: Introduce '**End of Unit Summary'.** This is time to reflect on the complete Unit 1 and all LO's specified throughout the lessons to date: Ask questions and discuss the main objectives. This full recap and summary will prepare students for **'Pop Quiz 1'** **Pop Quiz 1:** Complete pop quiz 1.

Plenary	
Time 5 mins	Summarise lesson. What has been covered to date in Unit 1? What is programming? What are algorithms? What is Scratch?
Assessment focus	Complete '**Pop Quiz 1**'.
Learning curve	The entire course plus specific instructional videos are available on Learning curve via this link: https://learningcurve.moe.gov.ae/en/default/Course#/view/2280/false/2335/Home Access code: CdScISPHcUaRPaZSe_9tHg

<table>
<tr><td>Grade</td><td>4</td><td>Subject</td><td>DT</td><td>Lesson number</td><td>6</td><td>Week number</td><td>3</td></tr>
<tr><td colspan="2">Unit</td><td colspan="2">Date</td><td colspan="2">Time</td><td colspan="2">Page number</td></tr>
<tr><td colspan="2">2</td><td colspan="2">16/09/2018</td><td colspan="2">45 minutes</td><td colspan="2">43-51</td></tr>
<tr><td colspan="3">Equipment required:
DT book G4
Scratch 2.0 or later</td><td colspan="5"><u>Learning objectives</u>
2.1. Explain input and output functions.</td></tr>
<tr><td colspan="3">Keywords</td><td colspan="5">Input, output, X coordinate, Y coordinate</td></tr>
<tr><td colspan="8">Starter/Introduction activity</td></tr>
<tr><td>Time
5 mins</td><td colspan="7">Brief recap of Unit 1 and all keywords, LOs.

Introduce Unit 2, Loops.
Outline Keywords and learning outcomes for Unit 2.

Briefly discuss input and output in terms of Unit 1 and other interests of the students. (video games etc.)

Gauge prior knowledge by completing starter activity:
Activity 1:
Without giving students too much information, see what their prior knowledge and understanding of ‘input’ and ‘output’ is.

Teacher’s answers
<table><tr><td>Input</td><td>Output</td></tr><tr><td>Move
Say
Wait
Turn
Think
When Green Flag is clicked</td><td>After the green flag is clicked
When the sprite is moving
Is saying/thinking
Is turning
What you can see happen in the stage</td></tr></table></td></tr>
<tr><td>10 mins</td><td colspan="7">Activity 2:
Complete the word search to focus on Keywords. (5 minutes and can be finished at any stage if time allows throughout term.)</td></tr>
</table>

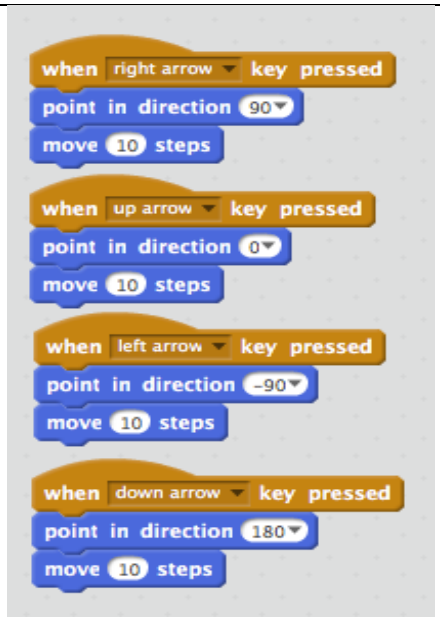
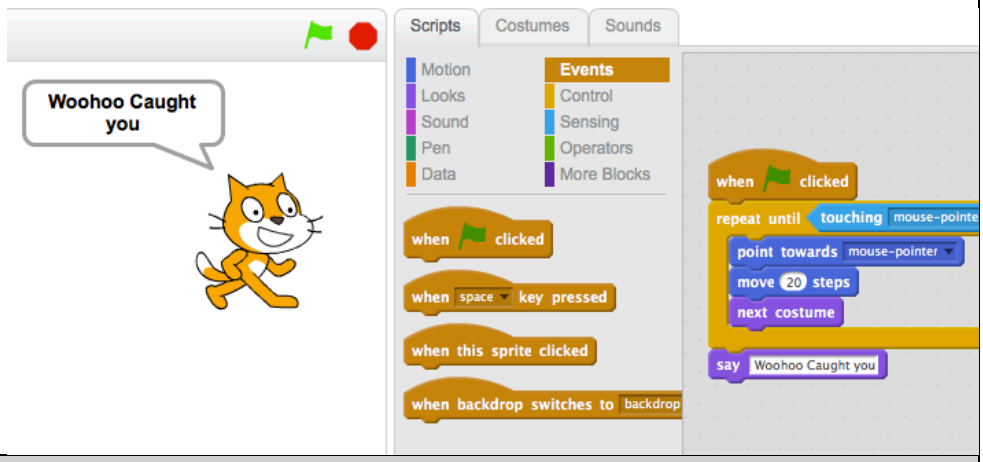
	Teacher's answer 
Main	
Time 10mins 10 mins	Introduce '**Input' and 'Output'**. Link to activity 1 and discuss **input and output** functions in terms of computer programming. Create some live examples in Scratch on the data show. Introduce '**X and Y coordinates'.** See if any students have heard of these before, use Scratch to show how coordinates work in the stage area for movement. Link to maths and steam education. Complete the step-by-step process in green to help see coordinates visually. Students will also learn how to insert a background from library here. Select the **'x-y grid'** to help their understanding. Move onto **activity 3** if time allows:
Plenary	
Time 5-10 mins	Summarise lesson. What has been introduced today in Unit 2. What are '**input' and 'output'** functions in relation to programming? How familiar are students with '**input/output'** and have they used them before? What are coordinates and why are they used? (Show example of coordinates for addresses all over the world.) Map software via data show could make an interesting discussion by asking students to make up coordinates and finding out where in the world it lands.
Assessment focus	Explain **input and output** functions. Understand **x and y coordinates.**

Learning curve	The entire course plus specific instructional videos are available on Learning curve via this link: https://learningcurve.moe.gov.ae/en/default/Course#/view/2280/false/2335/Home Access code: CdScISPHcUaRPaZSe_9tHg

Grade	4	Subject	DT	Lesson number	7	Week number	4
Unit		Date		Time		Page number	
2		23/09/2018		45 minutes		51-59	

Equipment required: DT book G4 Scratch 2.0 or later	**Learning objectives** 2.2. Define the importance of loops and how to use them in Scratch.
Keywords	loops, script, block menu

Starter/Introduction activity	
Time 5 mins 10 mins	Brief recap of previous lesson on **Input, output and coordinates:** Finish **activity 3** if needed: Introduce **loops.** You can create a program on Scratch to show a code repeated lots of times. Then use a code written just once using a repeat loop. Complete starter **activity 4:** Note the difference between to 2 programs. Edit 1 of these programs to add in own variations of loop blocks and save as: **'Loops-** Insert Your Name**'**
Main	
Time 10mins	Introduce '**movement with keyboard**. Complete step-by-step process in **Activity 5:** Encourage students to add in a background and make the Sprite forward and backward roll. **Teacher's answer:** Anything like this:

15 mins	 Introduce **'Cat and Mouse'.** Complete the step-by-step process and save as: 'Cat and mouse- Insert Your Name' **Activity 6:** Edit the '**cat and mouse**' game to complete activity 6. **Teacher's answer** (All answers will be valid once some values and sayings are changed.) 
Plenary	
Time 5 mins	Summarise lesson. What are **loops**? Why are they used in programming? Explain the difference between **repeat loops and forever loops.**
Assessment focus	Explain **loops**. Display an understanding of how/where to use in Scratch.

Learning curve	The entire course plus specific instructional videos are available on Learning curve via this link: https://learningcurve.moe.gov.ae/en/default/Course#/view/2280/false/2335/Home Access code: CdScISPHcUaRPaZSe_9tHg

<table>
<tr><td>Grade</td><td>4</td><td>Subject</td><td></td><td>Lesson number</td><td>8</td><td>Week number</td><td>4</td></tr>
<tr><td colspan="2">Unit</td><td colspan="2">Date</td><td colspan="2">Time</td><td colspan="2">Page number</td></tr>
<tr><td colspan="2">2</td><td colspan="2">23/09/2018</td><td colspan="2">45 minutes</td><td colspan="2">59-65</td></tr>
<tr><td colspan="3">Equipment required:
DT book G4
Scratch 2.0 or later</td><td colspan="5"><u>Learning objectives</u>
2.3. Demonstrate how to control sprites using various block menu options.

2.4. Demonstrate coding skills by completing activities in Scratch.</td></tr>
<tr><td colspan="3">Keywords</td><td colspan="5"></td></tr>
<tr><td colspan="8">Starter/Introduction activity</td></tr>
<tr><td>Time
10mins</td><td colspan="7">Brief recap of previous lesson on Loops:

Open previously save 'Cat and mouse' file.

Complete steps for 'Cat and Mouse 2'

Save file as 'Cat and Mouse 2- Insert Your Name'

Run the Cat and mouse 2 program, complete activity 7:
Teacher's answer:
Any noted answers that explain what students see in the game while its running.</td></tr>
<tr><td colspan="8">Main</td></tr>
<tr><td>Time

30mins</td><td colspan="7">Introduce 'Task sheet 1'

Follow the guides and complete 'Task sheet 1' to include different background, Sprites and code.

There are examples provided in the book. Students may use any backgrounds, characters, new code to help them obtain full marks:

Teacher's answer

<table>
<tr><td rowspan="2">No.</td><td rowspan="2">Points</td><td colspan="2">Student evaluation</td><td rowspan="2">Teacher evaluation</td></tr>
<tr><td>I needed help (1)</td><td>I did it myself (2)</td></tr>
<tr><td>1</td><td>Change two sprites into new characters.</td><td></td><td>2</td><td>√</td></tr>
</table>
</td></tr>
</table>

15 mins		2	Insert a background from background library.		2	√
		3	Change the 'motion' and 'say' values to match the new game.		2	√
		4	Add in one piece of new code to the game.		2	X
		5	Save the program as: 'Task sheet 1- Insert Your Name'	1		√
		Maximum achievable points		10		
		Summarisation of actual points		Student: 9		Teacher: 8
		Student Comments		Good work. You did need help adding 'New code' to this Task sheet so you only get 1 mark for No. 4.		

Plenary	
Time 5 mins	Summarise lesson. Ensure all students are finished with their Task sheets and have saved the file. Make sure all students have completed their Task sheet Evaluations in the books. Collect all books to correct Task sheets.
Assessment focus	Task sheet 1
Learning curve	The entire course plus specific instructional videos are available on Learning curve via this link: https://learningcurve.moe.gov.ae/en/default/Course#/view/2280/false/2335/Home Access code: CdScISPHcUaRPaZSe_9tHg

Grade	4	Subject	DT	Lesson number	9	Week number	5
Unit		Date		Time		Page number	
2		30/09/2018		45 minutes		63-71	

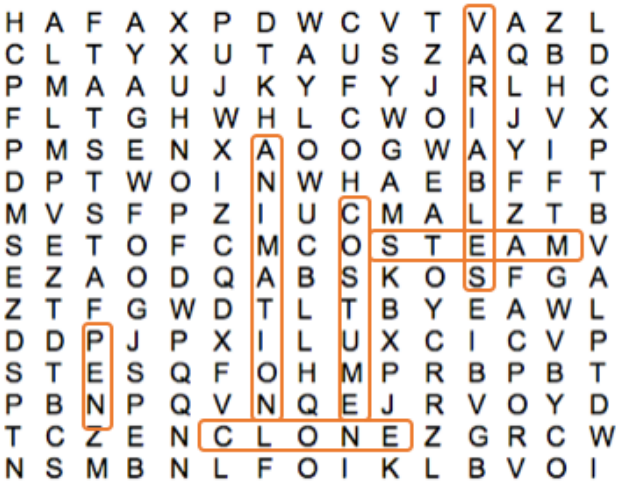
Equipment required: DT book G4 Scratch 2.0 or later	**Learning objectives** 2.3. Demonstrate how to control sprites using various block menu options. 2.4. Demonstrate coding skills by completing activities in Scratch.
Keywords	

Starter/Introduction activity	
Time 10mins	Recap of previous lesson and complete the Task sheet: Introduce the '**Keeping Score'** step-by-step activity. Encourage students to complete the step-by-step guide to add scores to the previous '**Task sheet' or 'Cat and Mouse'** game.
Main	
Time 25mins	While students are working on the '**Keeping score'** guided activity, call each student up to give individual feedback for '**Task sheet 1'**. It is very important to give students feedback on a regular basis while completing activities in class or when correcting books. Make sure all students can follow the steps for the "**keeping score'** activity. Complete demonstration on the data show. Summarise the lesson and give the whole class feedback from **'Task sheet 1'**. Recap entire Unit 2 and go through the **End of Unit summary**: Discuss keywords and LOs from Unit 2.
Plenary	
Time 5-10mins	Complete **End of Unit Quiz**.
Assessment focus	Task sheet 1 Feedback, End of unit quiz, adding a variable to a program

Learning curve	The entire course plus specific instructional videos are available on Learning curve via this link: https://learningcurve.moe.gov.ae/en/default/Course#/view/2280/false/2335/Home Access code: CdScISPHcUaRPaZSe_9tHg

Grade	4	Subject	DT	Lesson number	10	Week number	5
Unit		Date		Time		Page number	
3		30/09/2018		45 minutes		74-83	

Equipment required: DT book G4 Scratch 2.0 or later	Learning objectives 3.1. Identify variables and how to use them in Scratch.
Keywords	Variables

Starter/Introduction activity	
Time 10mins	Briefly recap Unit 2 with a quick discussion and some questions. (Refer to End of unit summary/Quiz.) Introduce Unit 3 Work through overview and identify keywords and LOs. **Activity 1:** Complete Activity 1 (5 minutes, can be returned to later if time allows)
5 mins	Teacher's answer 

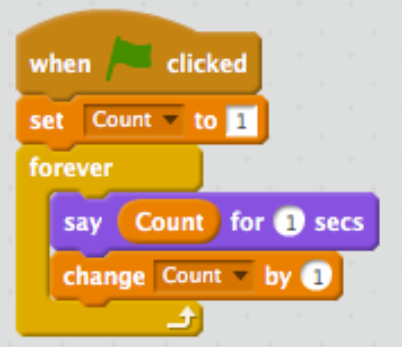
Main	
Time 10 mins	Work through '**Variables'** and question the class to see if they are familiar. **(Used at end of Unit 2 for Keeping Score)** You can refer to keywords in Word search. Work through **'Using Variables in Scratch'**.

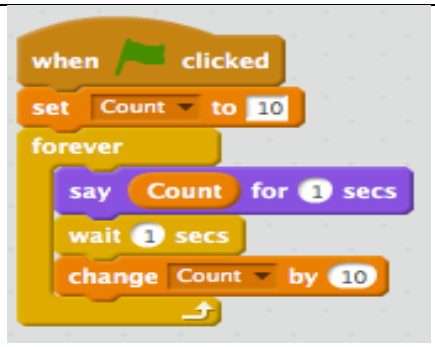
15mins	Students can reload previous activity **'Keeping Score'** and try out some more variable features while working through the **'Variable blocks'** section of Unit 3.
Plenary	
Time 5 mins	Summarise lesson. Make sure all the students are familiar with variables and can identify where they are used in programming (Discussion, questions). Get some students to come up to the board and show how to use 'Variable blocks' within a Scratch game/program.
Assessment focus	Identify variables and how/where to use them in Scratch.
Learning curve	The entire course plus specific instructional videos are available on Learning curve via this link: https://learningcurve.moe.gov.ae/en/default/Course#/view/2280/false/2335/Home Access code: CdScISPHcUaRPaZSe_9tHg

Grade	4	Subject	DT	Lesson number	11	Week number	6
Unit		Date		Time		Page number	
3		07/10/2018		45 minutes		84-89	

Equipment required: DT book G4 Scratch 2.0 or later	Learning objectives 3.1. Identify variables and how to use them in Scratch.
Keywords	

Starter/Introduction activity	
Time 10mins	Recap previous lesson and get some students to come explain variables on the board or through the data show. Introduce **'Counting in Scratch'** Complete the step-by-step guide and run the program. Here you want students to try entering correct blocks without directly giving the code. Various combinations will work as long as the sprite counts. Teacher's code 
Main	
Time 12mins	Continue to work through **'Counting in Scratch'**. Insert an **'Events'** block to the start of the previous code. Insert '**change count'** block under **'say'** block. Run the program again: **Activity 2:** Encourage students to write down all the things they notice about the new program. Again, this can be done through discussion or by

8 mins	asking students to come up in groups/pairs to write some ideas on the board. **Teacher's answers:** The sprite counts. It counts by adding 1 every time. The sprite counts like in real life. The count starts at '1' each time the program runs.  Continue adding in the extra steps for activity 2 following the step-by-step guide. Note what takes place in the space provided each time: **Teacher's answers: (possible answers)** The sprite counts. The 'say' images flashes for each new value (goes on and off). It counts slower. When the program restarts, it continues counting from the number it stopped on. It does not reset to 1. **Next:** Change the variable data to anything you like and run the program again: **Save the code as 'Counting- Insert Your Name'** It is very important to give students feedback on a regular basis while completing activities in class or when correcting books. **Teacher's answers** Any working program is acceptable. Here are some possible answers.

10 mins	 **'Using Scratch to help with Maths'** Complete step-by-step guide. Write down what happen in the spaces provided. **Activity 3:** **Teacher's answers:** (any variation of the following answers) The sprite counts in multiples of 4. You can only see the sprite say up to 48.
Plenary	
Time 5 mins	Summarise lesson. Ensure all students are able to use variables, loops, and say blocks to make the sprite count in Scratch. Identify STEAM and the importance of using co-curricular subjects.
Assessment focus	Linking Scratch programming to other subjects (STEAM). Creating a program that can make the sprite count like a student would.
Learning curve	The entire course plus specific instructional videos are available on Learning curve via this link: https://learningcurve.moe.gov.ae/en/default/Course#/view/2280/false/2335/Home Access code: CdScISPHcUaRPaZSe_9tHg

<table>
<tr><td>Grade</td><td>4</td><td>Subject</td><td>DT</td><td>Lesson number</td><td>12</td><td>Week number</td><td>6</td></tr>
<tr><td colspan="2">Unit</td><td colspan="2">Date</td><td colspan="2">Time</td><td colspan="2">Page number</td></tr>
<tr><td colspan="2">3</td><td colspan="2">07/10/2018</td><td colspan="2">45 minutes</td><td colspan="2">88-95</td></tr>
<tr><td colspan="3">Equipment required:
DT book G4
Scratch 2.0 or later</td><td colspan="5"><u>Learning objectives</u>

3.2. Demonstrate drawing skills in Scratch by drawing different Sprites and backgrounds.</td></tr>
<tr><td colspan="3">Keywords</td><td colspan="5">Pen</td></tr>
<tr><td colspan="8">Starter/Introduction activity</td></tr>
<tr><td>Time

10-15 mins</td><td colspan="7">Recap previous lesson. Focus on using Scratch as a program that can help you with other subject in school (i.e. Maths).

Activity 4:
Complete activity 4, this will be very similar to the previous step-by-step guide example for 4 multiplication tables.

Save the new code as ‘My new multiplication table- Insert Your Name’
Teacher’s answer:
Students will demonstrate how to create a multiplication table using any number from 1-12 by recreating a similar code to the example provided:

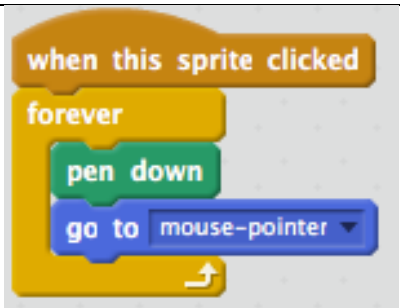
This will give students a chance to expand their programming skills and aid them with tools to help study for other subjects in a fun way.</td></tr>
<tr><td colspan="8">Main</td></tr>
<tr><td>Time
5-10mins</td><td colspan="7">Introduce ‘Drawing in Scratch’

Activity 5:
See if students can name these shapes, pair up or work in larger groups for some of the more difficult shapes.

Work through the ‘Pen’ blocks in Scratch and demonstrate what they can do on the data show.

Try out the code provided in book:</td></tr>
</table>

10mins



Activity 6:

Write down what you can see happen when the above code runs:

Teacher's answers: (Any variations of the possible answers are acceptable.)

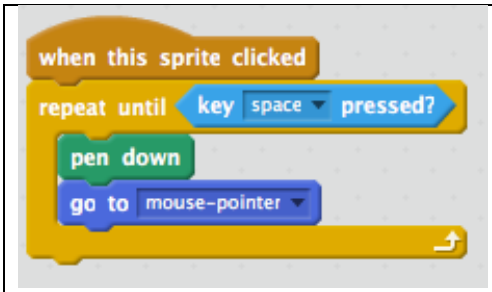
The sprite keeps drawing forever.
It is hard to make accurate drawings.
Lines go everywhere.
It looks messy.

Continue to work through the various **'Pen'** blocks and their features.

Activity 7:

By just looking at the code provided, write down what will happen when the program runs:

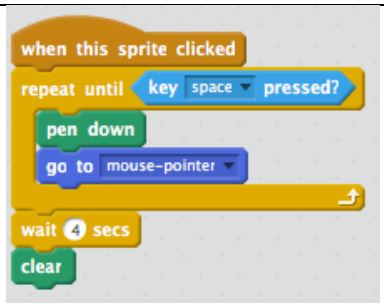
This does **NOT** need to be completed in Scratch, but **YOU** can create the code as an example and display it on the data show for differentiation etc.



When the sprite is clicked, the program will run.

When the space bar is clicked, the program will stop.

The pen will follow the mouse-pointer to draw.



When the sprite is clicked, the program will run.

When the space bar is clicked, the program will stop.

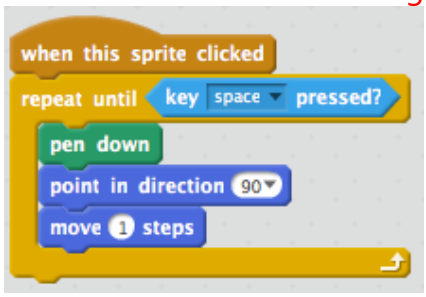
The pen will follow the mouse-pointer to draw.

	The stage will not clear when the program stops.	When the program stops, it will 'wait' 4 seconds before clearing the stage. If the sprite is clicked and the program runs again before 'wait' time is over, the stage will not clear.

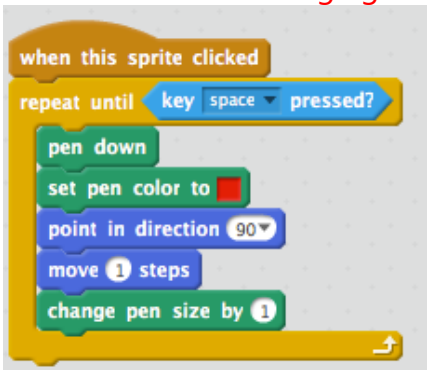
10 mins

Activity 8:
Complete activity 8 to draw a straight line in Scratch.
This can be done by getting the Sprite to **'move' or 'glide'** in a specific direction.
Encourage students to design the code by themselves in pairs/groups.
Once completed, they can add in blocks to change **'line size and colour'**

Teacher code for a basic straight line



Teacher code for changing colour and size



(This is for students to explore. Try to lead students towards doing this on their own.)
Potential solutions can be endless variations of the above examples.

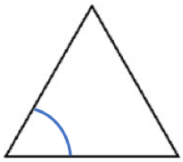
Plenary	
Time 5 mins	Summarise lesson. Ensure all students are familiar with 'Pen' blocks in Scratch and can identify how to use the various features involved with these blocks. Walk around to check students work and make sure all files are saved correctly.
Assessment focus	Create code which will allow a sprite to make a drawing in Scratch.
Learning curve	The entire course plus specific instructional videos are available on Learning curve via this link: https://learningcurve.moe.gov.ae/en/default/Course#/view/2280/false/2335/Home Access code: CdScISPHcUaRPaZSe_9tHg

Grade	4	Subject	DT	Lesson number	13	Week number	7
Unit		Date		Time		Page number	
3		14/10/2018		45 minutes		96-102	

Equipment required:	Learning objectives
DT book G4 Scratch 2.0 or later	3.2. Demonstrate drawing skills in Scratch by drawing different Sprites and backgrounds.
Keywords	Pen

Starter/Introduction activity	
Time 15mins	Recap previous lesson. Focus on drawing in Scratch, discuss the difference between drawing freehand using a sprite and using set code to draw a 'straight line' for example: Introduce **'Drawing Shapes'**, explain that you will need to understand angles to help make shapes using Scratch. A protractor is used to measure angles and it is a concept which also links to STEAM via maths and other subjects. **Activity 9:** Complete activity 9 to measure the internal angles of the 4 shapes using a protractor. Teacher's answer: Triangle= 60 Square= 90 Pentagon= 108 Hexagon= 120
Main	
Time 10mins	Continue to work through **'internal' and 'external'** angles. Do some examples of how to get these angles on the board: $180 - internal\ angle\ = external\ angle$ Example: $\mathbf{180 - 72\ = 108}$ Focus on using external angles in Scratch to draw shapes. This is done by moving in a direction and then turning a set degree:  **Activity 10:**

Complete the following activity.

Shape	No. of sides	Internal angle	External angle
 Square	4	90	90°
 _____	3	60	120
 _____	5	108°	72
 _____	6	120	60

10- 15 mins

Teacher's answer:

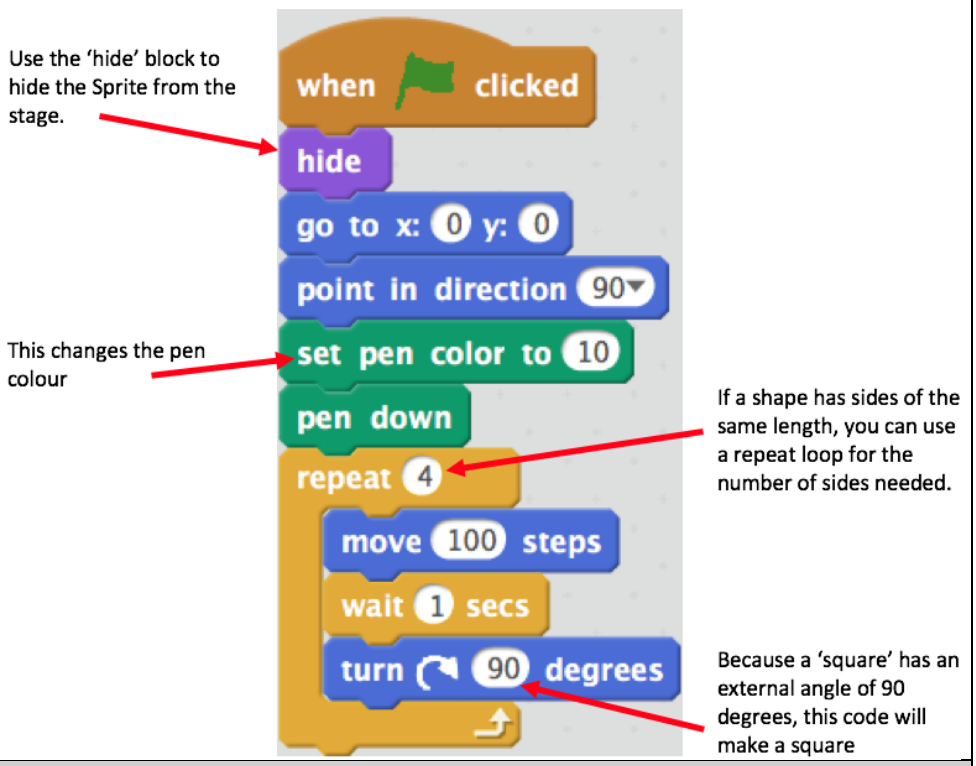
With the skills students have gained in Scratch so far and with their new understanding of angles and movement students should be able to create the code to draw a square in Scratch.

For example, **a 'square'** has **4 sides = same length** and **90°** external angles.

Activity 11:

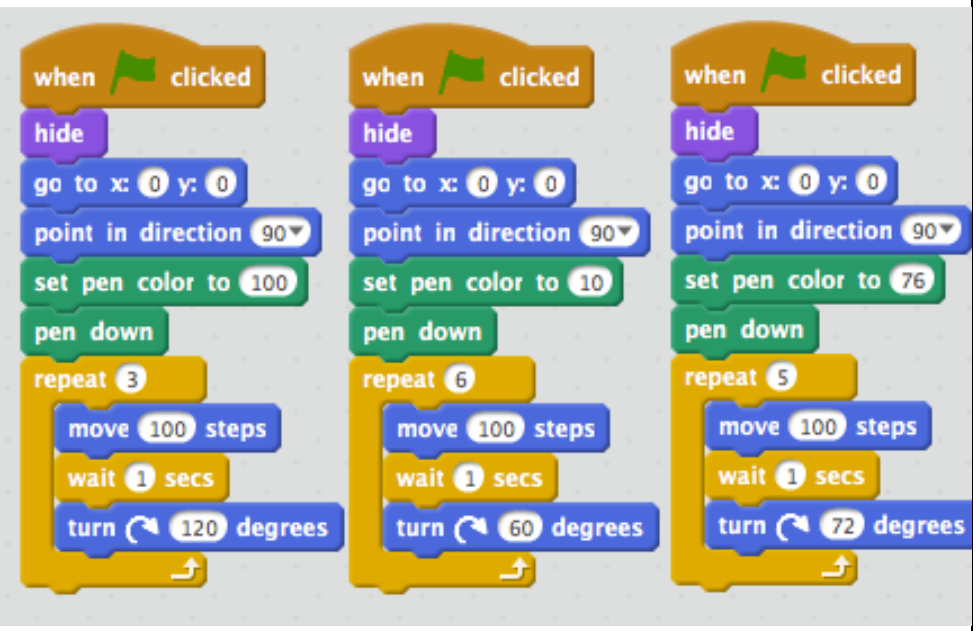
Create a simple program to draw a square. Students have previously made straight lines using 'Pen' and 'motion'. Now they will need to use 

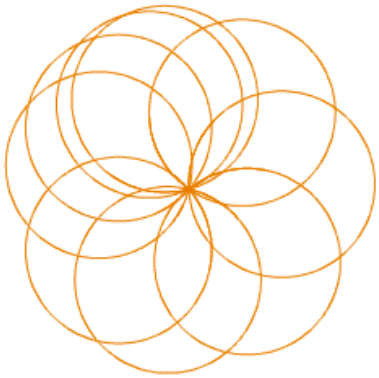
blocks also.

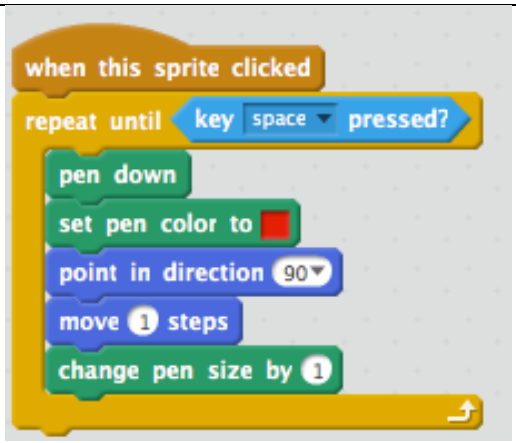
	Teacher's answer: Students' explanations are used to aid differentiation. 
Plenary	
Time 5 mins	Summarise lesson. Ensure all the students are familiar with shapes, angles and how to measure/calculate internal and external angles. Identify the blocks required to make shapes such as a square in Scratch.
Assessment focus	Measure and calculate internal and external angles. Create a shape using these angles in Scratch.
Learning curve	The entire course plus specific instructional videos are available on Learning curve via this link: https://learningcurve.moe.gov.ae/en/default/Course#/view/2280/false/2335/Home Access code: CdScISPHcUaRPaZSe_9tHg

Grade	4	Subject	DT	Lesson number	14	Week number	7
Unit		Date		Time		Page number	
3		14/10/2018		45 minutes		102-105	

Equipment required:	Learning objectives
DT book G4 Scratch 2.0 or later	3.2. Demonstrate drawing skills in Scratch by drawing different Sprites and backgrounds.
Keywords	

Starter/Introduction activity	
Time 10mins	Recap previous lesson. Focus on Internal and external angles. Why do we need these to draw shapes in Scratch? How can we measure/calculate angles of shapes? Discuss the angles of the shapes from previous activities and make notes on the board. (You can get students to go up to board to draw shapes and write angles.) **Activity 12:** Complete activity 12. Students will need to fill in the blanks on the code to program Scratch to draw the shapes given. Teacher's answer code  The number of steps and pen colours can vary. The repeat number and the turn number are vital.
Main	
Time 15mins	**Activity 12:** **Part 2:**

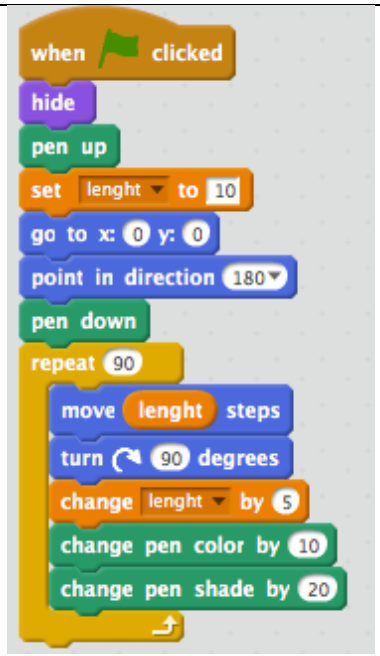
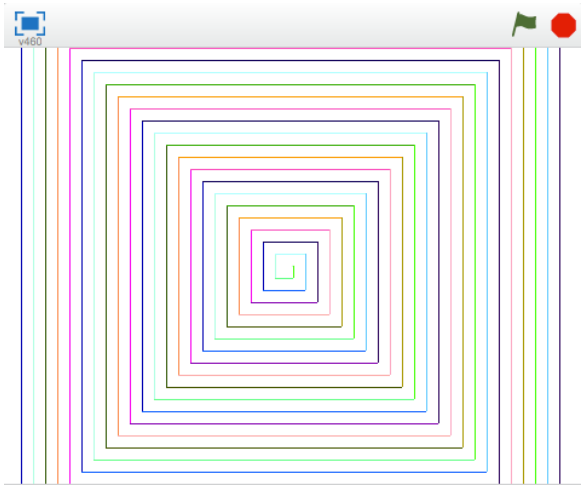
	Now students should make the code to test their answers in Scratch. They can correct work or peer correct upon the teacher's approval after creating the shapes in Scratch. **NOTE: Students can duplicate the code 3 times and just change the data to create each shape.** Introduce '**Making a circle'**. As a circle has no angles, it is hard to visualise making it in Scratch using:  However, students can make what appears as a circle by using minimal steps and minimal degree turns. Follow the steps in the book to create a circle. After making 1 circle, try to create a shape like the following by stopping and starting the program. 
15 mins	**Activity 13:** This Extension activity can be completed by all students if time allows. Otherwise students who are working ahead can explore activity 13. **Teacher's answer:** A possible exploration answer code: All experimental changes will be accepted.

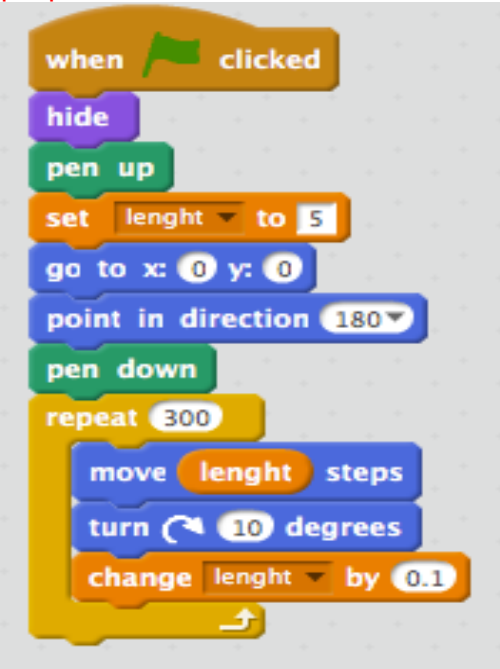
	 **Encourage students to explore with various changes in the code.**
Plenary	
Time 5 mins	Summarise lesson. Ensure all students are familiar with how to create circles in Scratch without using exact internal/external angles. Ask several students to explain what they have created during 'explore' and get them to describe this to the classroom.
Assessment focus	Create circles in Scratch. Learn to control different features within **'Pen'** blocks to edit styles, colours etc. of drawings.
Learning curve	The entire course plus specific instructional videos are available on Learning curve via this link: https://learningcurve.moe.gov.ae/en/default/Course#/view/2280/false/2335/Home Access code: CdScISPHcUaRPaZSe_9tHg

Grade	4	Subject	DT	Lesson number	15	Week number	8
Unit		Date		Time		Page number	
3		21/10/2018		45 minutes		106-109	

Equipment required: DT book G4 Scratch 2.0 or later	Learning objectives 3.2. Demonstrate drawing skills in Scratch by drawing different Sprites and backgrounds.
Keywords	

Starter/Introduction activity	
Time 10mins	Recap previous lesson. Focus on creating circular shapes in Scratch and how this can be done without exact internal/external angles to work with. Introduce **'Creating new shapes in Scratch'** Work through the steps in the book and create a squiral using the code provided. Ask students how they can remove the sprite from their new drawing? **Note: Group discussion and teacher samples on board can be used for activities 14-16 if required.**
Main	
Time 10mins	**Activity 14:** Using the previous squiral code, make some changes to make the shape more colourful, different sizes etc. **Teacher's answer:** (There are lots of possible changes; all similar answers are acceptable.)

15 mins	  Introduce the concept of a **'Spiral'**. Encourage students to think of ways to make a spiral using the skills gained while making a **'squiral'**. **Activity 15:** Lead a discussion and refer to making a simple square and a simple circle to help students visualise the changes required for making a **spiral.** Teacher's answers: Change repeat number (much bigger). Change degree number (much smaller). Change length by number (much smaller). **Activity 16:** Once students have decided on the changes required to make a **'spiral'**, they can create the shape on Scratch.

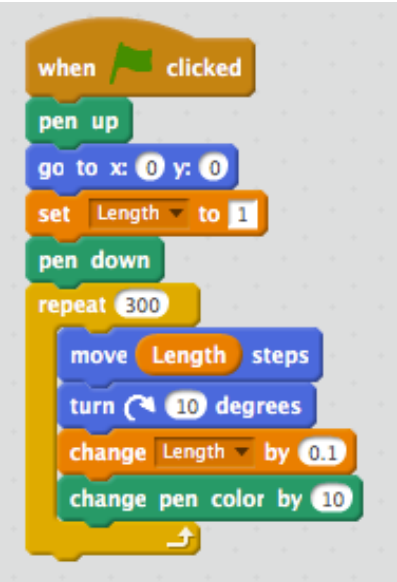
	Teacher code to create a basic spiral: This may be shared with some students for differentiation purposes.  If students are finished they can move onto Activity 17.
Plenary	
Time 5 mins	Summarise lesson. The main focus is on familiarising students with the changes required to make various shapes within Scratch, deciding on the correct blocks to use and the correct data to enter in these blocks. It should be fun for students to create new colourful shapes and also give them all key skills for drawing in Scratch.
Assessment focus	Create circles in Scratch. Learn to control different features within **'Pen'** blocks to edit styles, colours etc. of drawings.
Learning curve	The entire course plus specific instructional videos are available on Learning curve via this link: https://learningcurve.moe.gov.ae/en/default/Course#/view/2280/false/2335/Home Access code: CdScISPHcUaRPaZSe_9tHg

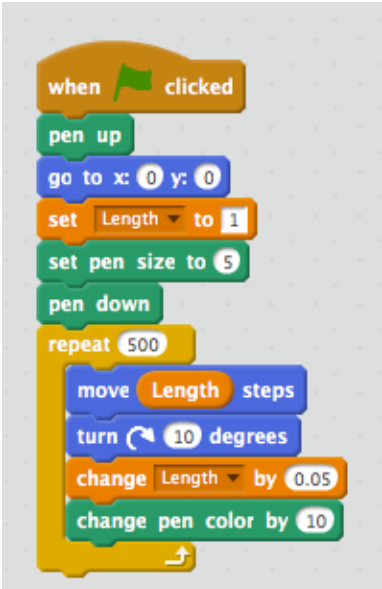
Grade	4	Subject	DT	Lesson number	16	Week number	8
Unit		Date		Time		Page number	
3		21/10/2018		45 minutes		110-114	

Equipment required:	Learning objectives
DT book G4 Scratch 2.0 or later	3.3. Illustrate an animation in Scratch.
Keywords	animation, costume

Starter/Introduction activity

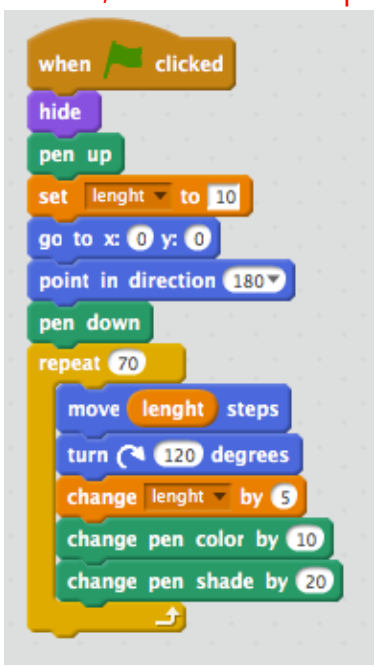
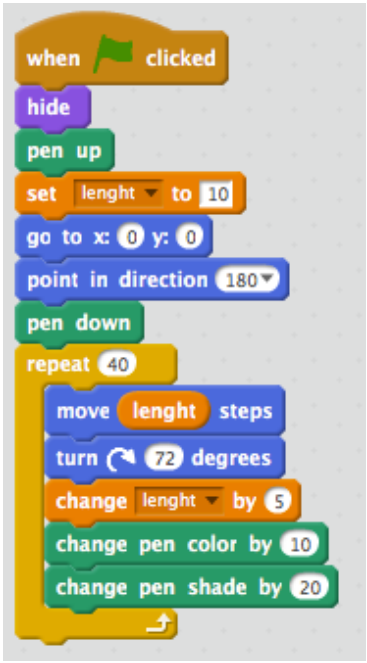
Time	
10mins	Recap previous lesson. Focus on creating new shapes using various 'Pen' blocks to increase size, colour and distance. Look at previous completed activities as they can help with the activities for today's lesson. **Activity 17:** Using the code created in activity 16, make changes to the 'Spiral' to change the size, colour etc. **Save the code as** 'Spiral- Insert Your Name' **Teacher's answer:** (There are lots of possible changes; all similar answers are acceptable.)

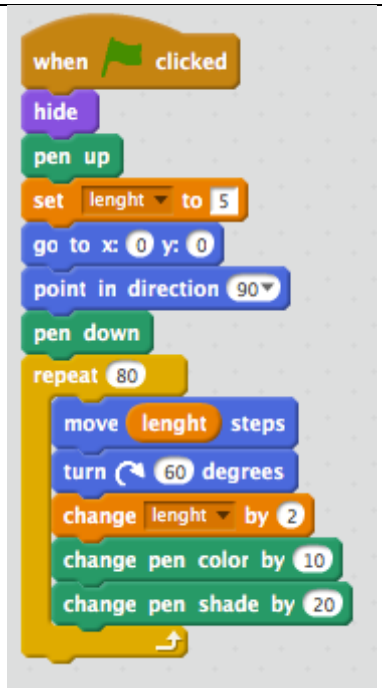




Main

Time	
10mins	**Activity 18:** Using the knowledge gained earlier in this unit, try and create some of the designs provided in the book.

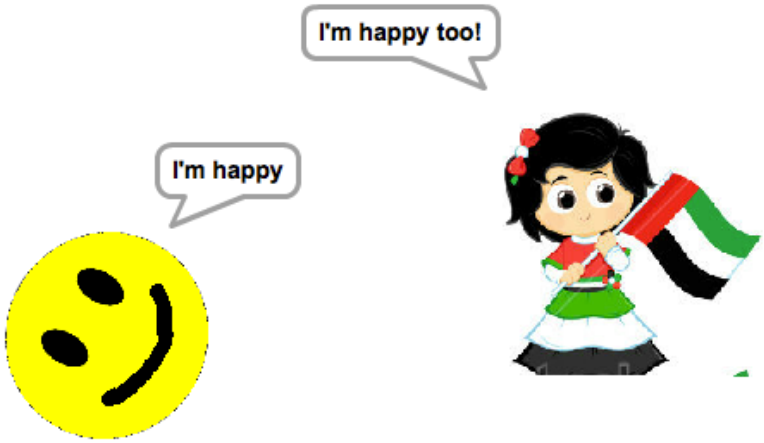
10 mins	Remember students have already done the hard work in working out and calculating angles etc. Now they can put it into practice to make new and fun designs while expanding skills for programming in Scratch. **Extension:** Change the  starting point and rerun the code to create very fun shapes: Complete activity 18 to make some cool shapes that could be printed or used for the students' screensavers/backgrounds. **Teacher's answer code:** (If the correct external angle is used to answer, then this is acceptable.)  

10 mins	 Introduce **'Creating animation in Scratch'**. Follow the step-by-step guide to make a 'sprite' in Scratch. Students can use their own design. Keep it basic and easy to make. Demonstrate a possible design on the board and through Scratch via the data show. 
Plenary	
Time 5 mins	Summarise lesson. Recap all key skills developed while learning to draw in Scratch and creating various shapes using the programming software. Outline plans for making your own animations in Scratch by creating characters and backgrounds etc.
Assessment focus	Create circles in Scratch. Learn to control different features within **'Pen'** blocks to edit styles, colours etc. of drawings.

Learning curve	The entire course plus specific instructional videos are available on Learning curve via this link: https://learningcurve.moe.gov.ae/en/default/Course#/view/2280/false/2335/Home Access code: CdScISPHcUaRPaZSe_9tHg

Grade	4	Subject	DT	Lesson number	17	Week number	9
Unit		Date		Time		Page number	
3		28/10/2018		45 minutes		115-118	

Equipment required: DT book G4 Scratch 2.0 or later	Learning objectives 3.4. Create a new sprite and background using skills learned so far.
Keywords	

Starter/Introduction activity	
Time 10mins	Recap previous lesson. Focus on creating '**animation in Scratch**'. Students should know the basic controls and skills in order to make a simple sprite character in Scratch. Follow the step-by-step guide to help students upload a sprite using a picture from the device or the internet. **Save the code as:** 'Sprite from file- Insert Your Name'  This guide/activity will help students introduce new characters to any future games they make that are not available in the sprite library. The link below shows some examples of Scratch games from experienced programmers using uploaded sprites and backgrounds: Video 3 https://www.youtube.com/watch?v=9drwiPhf1Vw&t=69s
Main	
Time	**Creating a background in Scratch:**

10mins 10 mins	Students will be familiar with choosing different backgrounds from previous activities. Here they will get an opportunity to design their own background. This would allow students to completely design their own games from sprites (characters) to backgrounds (settings/levels) in the future. Follow the step-by-step guide and create a simple background to start with for this activity. Changing colour and inserting some background objects will be perfect for starters. **Save the code as:** 'Creating a background- Insert Your Name' **Activity 19:** Introduce activity 19 and begin to design sprites and backgrounds in the sketch boxes provided.
Plenary	
Time 5 mins	Summarise lesson. Recap all key skills required for creating your own background and uploading images as a sprite. Students should have time to start sketching for **Activity 19.** They should complete any unfinished sketches for HW and plan the code they will use to create a program using criteria provided.
Assessment focus	Create a new sprite and background in Scratch using drawing and animation skills. Plan and sketch for activity 19.
Learning curve	The entire course plus specific instructional videos are available on Learning curve via this link: https://learningcurve.moe.gov.ae/en/default/Course#/view/2280/false/2335/Home Access code: CdScISPHcUaRPaZSe_9tHg

<table>
<tr><td>Grade</td><td>4</td><td>Subject</td><td>DT</td><td>Lesson number</td><td>18</td><td>Week number</td><td>9</td></tr>
<tr><td colspan="2">Unit</td><td colspan="2">Date</td><td colspan="2">Time</td><td colspan="2">Page number</td></tr>
<tr><td colspan="2">3</td><td colspan="2">28/10/2018</td><td colspan="2">45 minutes</td><td colspan="2">119-123</td></tr>
<tr><td colspan="3">Equipment required:
DT book G4
Scratch 2.0 or later</td><td colspan="5"><u>Learning objectives</u>

3.4. Create a new sprite and background using skills learned so far.</td></tr>
<tr><td colspan="3">Keywords</td><td colspan="5"></td></tr>
<tr><td colspan="8">Starter/Introduction activity</td></tr>
<tr><td>Time

5-10 mins</td><td colspan="7">Recap previous lesson. Focus on planning element for creating students' own 'sprite' and background in Scratch.

Look over sketches from previous lesson or HW and give a little feedback before students begin to create their sprite in Scratch.

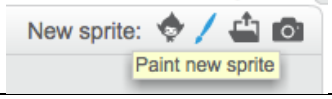
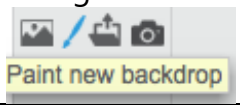
It is very important to ensure students are sketching to a good standard. However, if their design is too complicated for their abilities in Scratch, it is acceptable to make an easier version of the sprite/background for activity 19.</td></tr>
<tr><td colspan="8">Main</td></tr>
<tr><td>Time
20-30 mins</td><td colspan="7">Activity 19:
From the student's sketches, create a new Sprite character in Scratch.
Students have the option to create from their imagination and designs or upload a character from the internet.

The same applies to creating a background.

NOTE: Time may be an issue, so it is VITAL that all students at least make their own 'sprite' as it will help them with the final project in Unit 5.

If time is short for some students, they can return to designing/making a background later.

Follow the work steps and tick when completed:
<table>
<tr><th>No.</th><th>Work steps</th><th>Step completion and values</th><th>Remarks</th></tr>
</table></td></tr>
</table>

	1.	Create a sketch of a new sprite on paper.		
	2.	Create a sketch of a new background on paper.		
	3.	Open Scratch 2.0. 		
	4.	Illustrate your designed sprite in Scratch using: 		
	5.	Illustrate your designed background in Scratch using: 		
	6.	Create a program for the new sprite in Scratch to demonstrate: a. moving. b. saying. c. turning.		
	7.	Run the program.		

5 mins

Save the code as: 'My new Sprite- Insert Your Name'

When complete recap on lesson and all previous lessons in Unit 3:

Work through the **End of unit summary** and allow students to prepare for **'Pop Quiz 2'**.

Plenary	
Time 5-10 mins	Complete '**Pop Quiz 2**'. If time permits you can go through answers with students on the data show once ALL the pop quizzes are collected. **Teacher's answer:** 1. True 2. False 3. True 4. False 5. True

Assessment focus	Complete **activity 19** and **Pop Quiz 2**.
Learning curve	The entire course plus specific instructional videos are available on Learning curve via this link: https://learningcurve.moe.gov.ae/en/default/Course#/view/2280/false/2335/Home Access code: CdScISPHcUaRPaZSe_9tHg

<table>
<tr><td>Grade</td><td>4</td><td>Subject</td><td>DT</td><td>Lesson number</td><td>19</td><td>Week number</td><td>10</td></tr>
<tr><td colspan="2">Unit</td><td colspan="2">Date</td><td colspan="2">Time</td><td colspan="2">Page number</td></tr>
<tr><td colspan="2">4</td><td colspan="2">04/11/2018</td><td colspan="2">45 minutes</td><td colspan="2">126-135</td></tr>
<tr><td colspan="3">Equipment required:
DT book G4
Scratch 2.0 or later</td><td colspan="5"><u>Learning objectives</u>

4.1 Identify Boolean operators and the purpose of each operator.</td></tr>
<tr><td colspan="3">Keywords</td><td colspan="5">Boolean, operator</td></tr>
<tr><td colspan="8">Starter/Introduction activity</td></tr>
<tr><td>Time

10 mins</td><td colspan="7">Recap previous lesson. Go over Pop Quiz 2 questions and answers. Briefly summarise unit 3 again to recap on LO's and keywords.

Introduce Unit 4. Work through overview, keywords and LO's. Introduce 'Operator Blocks'. Work through operator blocks and specifically focus on Boolean.

Complete starter Activity 1:
Teacher's answer
<table><tr><td></td><td>Sensing</td></tr><tr><td></td><td>Operators</td></tr><tr><td></td><td>Pen</td></tr><tr><td></td><td>Data</td></tr><tr><td></td><td>Sound</td></tr><tr><td></td><td>Events</td></tr><tr><td></td><td>Motion</td></tr></table></td></tr>
<tr><td colspan="8">Main</td></tr>
<tr><td>Time
10 mins</td><td colspan="7">Introduce 'conditional statements'.
Work through content and explain 'if', 'else' statements and how a statement must be 'true' for the specified action to take place.

Show some examples of using 'Conditional statements' with Boolean operators on the data show to help students' understanding.

Create the given program using conditional statements and Boolean operators.</td></tr>
</table>

	Add a **second** sprite of your choice into the program. Complete **Activity 2:** **Teacher's answer:** When the space bar is pressed.
15 mins	Continue to work through '**Conditional statements with operators**'. Create the given program in Scratch and test it out. Students will need to create a variable called 'answer 1'. Teacher demonstration can be used to help here. Complete **Activity 3:** Any acceptable variation of TA is ok. Students need to meet the criteria in Activity 3 only. It doesn't matter in what way they change the code or which quiz questions they ask. **Teacher's answer:**

<table>
<tr><td></td><td> 

Save the code as: ‘Conditional statement- Insert Your Name’</td></tr>
<tr><td colspan="2"><u>Plenary</u></td></tr>
<tr><td>Time
10 mins</td><td>Summarise lesson. Recap all new keywords and LO’s from the beginning of the lesson. Explain what an operator is and how conditional statements work.
Ask questions in relation to the number of programmes created in the lesson.</td></tr>
<tr><td><u>Assessment focus</u></td><td>Explain the purpose of each operator and when/where to use conditional statements.</td></tr>
<tr><td><u>Learning curve</u></td><td>The entire course plus specific instructional videos are available on Learning curve via this link:
https://learningcurve.moe.gov.ae/en/default/Course#/view/2280/false/2335/Home
Access code: CdScISPHcUaRPaZSe_9tHg</td></tr>
</table>

Grade	4	Subject	DT	Lesson number	20	Week number	10
Unit		Date		Time		Page number	
4		04/11/2018		45 minutes		135-143	

Equipment required:	Learning objectives
DT book G4 Scratch 2.0 or later	4.1 Identify Boolean operators and the purpose of each operator. 4.2 Demonstrate how to use Boolean operators in Scratch.
Keywords	broadcast, receive

Starter/Introduction activity	
Time 15 mins	Recap previous lesson. Discuss operators, Boolean and conditional statements. Ask students to give some examples of where conditional statements can be used and show examples on the board or via the data show. Introduce **'Broadcast and receive':** Explain that broadcast and receive allow the program to communicate without anything displayed on the stage. This means certain actions taken place within the program can trigger other actions to take place. Complete the step-by-step program provided to learn how '**Broadcast and receive'** blocks are used.

Main	
Time 10 mins	Complete **Activity 4:** Using the step-by-step code, add additional blocks to make the dragon (or 2nd sprite) say a name while the program is running and specific conditions are met. Continue with Unit 4. Reload the background created in unit 3 and follow the step-by-step guide to help create a program using broadcast and receive: NOTE: Students can use any sprites they choose. **Activity 5: (Time permitting)** Students can now edit the step-by-step activities to help create their own 'Broadcast and receive' game.

15 mins	NOTE: This does not need to take up much time. It is only for assessing that the students understand the new blocks introduced and their functions. Introduce '**Bat and Paddle'**. Begin to create code following the step-by-step guide.
Plenary	
Time 10 mins	Summarise lesson. Recap key points from today's lesson. Start summary and revision for exam. Look at unit summaries for units specified in exam detail. Recap end of unit quizzes, pop quizzes etc. to help revise for the upcoming exam. Sample questions can be done for HW. Students should be made aware exactly what units are required to study for the exam.
Assessment focus	The accurate use of '**broadcast and receive'** blocks in Scratch, including Boolean operators and conditional statements: Overview of units and content to study for upcoming exam
Learning curve	The entire course plus specific instructional videos are available on Learning curve via this link: https://learningcurve.moe.gov.ae/en/default/Course#/view/2280/false/2335/Home Access code: CdScISPHcUaRPaZSe_9tHg

<table>
<tr><td>Grade</td><td>4</td><td>Subject</td><td>DT</td><td>Lesson number</td><td>21</td><td>Week number</td><td>11</td></tr>
<tr><td colspan="2">Unit</td><td colspan="2">Date</td><td colspan="2">Time</td><td colspan="2">Page number</td></tr>
<tr><td colspan="2">4</td><td colspan="2">11/11/2018</td><td colspan="2">45 minutes</td><td colspan="2">143-148</td></tr>
<tr><td colspan="3">Equipment required:
DT book G4
Scratch 2.0 or later</td><td colspan="5"><u>Learning objectives</u>
4.3. Apply broadcast and receive blocks appropriately to a game in Scratch.
4.4 Create a soundtrack for mini-game activities.</td></tr>
<tr><td colspan="3">Keywords</td><td colspan="5">soundtrack</td></tr>
<tr><td colspan="8">Starter/Introduction activity</td></tr>
<tr><td>Time

10 mins</td><td colspan="7">Recap previous lessons in Unit 4. Refresh students understanding of operators, broadcast and receive blocks.

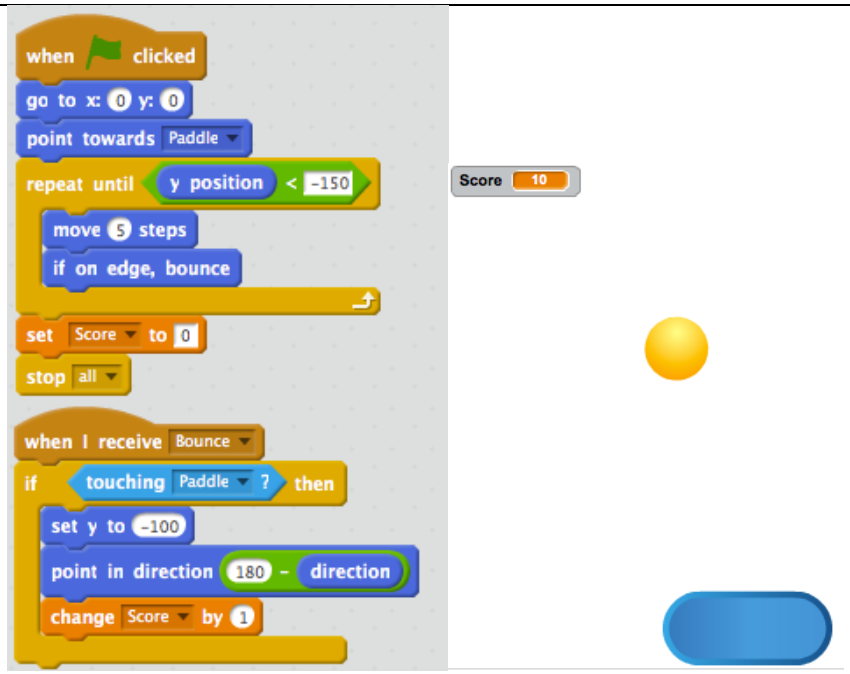
Continue with 'Bat and Paddle' step-by-step activity. Students should be able to follow the guide and create a game that they can enjoy playing with.

While students are working on this activity you will have time to call some students up individually to give feedback on exams.</td></tr>
<tr><td colspan="8">Main</td></tr>
<tr><td>Time

15 mins</td><td colspan="7">Complete Activity 6:
Teacher's answers
The ball bounces off the paddle.
The ball bounces off the edges.
The game stops when the ball hits the ground.
The paddle moves in the direction of the mouse.

Activity 7:
Students can now add a variable to the game to keep score. This is like using variables in previous units, so most students will be able to do this without any help.

Teacher's answers
Create a variable.
Name it 'score'.
When the ball hits paddle, the score goes up by 1.
When the ball hits ground, the game is over.
Score resets to zero.</td></tr>
</table>

15 mins	 Introduce **'Sounds, music, soundtracks'**. Work through the blocks and allow students to explore the different sounds each sprite can make. (Students may already be familiar as the could have added sound in previous games/programmes.) Show some examples of making music/soundtracks via the data show by composing using various instruments and notes. Demonstrate how recording one's own sounds/voice can also be done. Introduce **'Task sheet 2'**. Explain the key skills and components required and let students plan. If time permits, students can start '**Task sheet 2'**.
Plenary	
Time 5 mins	Summarise lesson. Recap key points from today's lesson. Focus on sounds, music and soundtracks. Also reinstate the key points required to complete **Task sheet 2** and ensure students are prepared to complete it in the next lesson.
Assessment focus	Add score variables into the bat and paddle activity. Identify different sounds and how to use the blocks when creating a game/program. **Task sheet 2**

Learning curve	The entire course plus specific instructional videos are available on Learning curve via this link: https://learningcurve.moe.gov.ae/en/default/Course#/view/2280/false/2335/Home Access code: CdScISPHcUaRPaZSe_9tHg

Grade	4	Subject	DT	Lesson number	22	Week number	11
Unit		Date		Time		Page number	
4		11/11/2018		45 minutes		148-154	

Equipment required:	Learning objectives
DT book G4 Scratch 2.0 or later	4.3. Apply broadcast and receive blocks appropriately to a game in Scratch. 4.4 Create a soundtrack for mini-game activities
Keywords	soundtrack

Starter/Introduction activity	
Time 5 mins	Recap previous lesson. Ask questions to clarify students are well prepared to complete '**Task sheet 2**'. Continue with '**Task sheet 2**'. Students can use any colour for the background. The key point is matching the colours with the sensing blocks to complete the program.
Main	
Time 25-30 mins	Continue with '**Task sheet 2**'. Students can use any colour for the background. The key point is matching the colours with the sensing blocks to complete the program. Some students may require more help with the task. As you know your class best, prepare for the students who need more differentiation. That way they can also complete the task on time. Complete **Task sheet 2:** Students should **'tick'** the step completion box as they work through the Task sheet. Students should give themselves an accurate '**Self-evaluation**'. In most cases the student's marks should be correct.

	Teacher's answers  Example of Cat Sprite Code Sprite code Example of Mouse
Plenary	
Time 10 mins	Summarise unit 4 and work through end of unit summary. Ensure all students have had sufficient time to complete '**Task sheet 2**'. If not, students can continue to work on it for the remainder of the lesson.

	'End of Unit Quiz' This can be completed in class or for HW. It depends on TIME. So, judge this accordingly to meet your students' needs. **Teacher's answer**  **Teacher's answer** 1. False 2. True 3. True 4. True 5. False
Assessment focus	**Task sheet 2** End of Unit Summary
Learning curve	The entire course plus specific instructional videos are available on Learning curve via this link: https://learningcurve.moe.gov.ae/en/default/Course#/view/2280/false/2335/Home Access code: CdScISPHcUaRPaZSe_9tHg

Grade	4	Subject	DT	Lesson number	23	Week number	12
Unit		Date		Time		Page number	
5		18/11/2018		45 minutes		158-166	
Equipment required: DT book G4 Scratch 2.0 or later				**Learning objectives** Project			
Keywords				Design			
Starter/Introduction activity							
Time 10 mins	Introduce '**Unit 5'** Project. Work through keywords and LOs. Work through the Scratch online examples and watch the video provided. https://Scratch.mit.edu/explore/projects/games/ Video 4 https://youtu.be/9drwiPhf1Vw						
Main							
Time 25-30 mins	Introduce the '**Project'**. Explain the key points and components to take into consideration when designing and making the project. A sample 'Project' PDF will be available on SharePoint. This will show a very basic racing game as an example to how a background can be made and how to include more '**variables'** and **'list'** blocks, should students design a racing game. SHAREPOINT LINK YOU should create this program and let students see how it works. Any UAE themed game that meets all the criteria is fine. However, for students who find it difficult, they can use a previous program. Edit it and make sure they meet all criteria: Work through the '**Brief' and 'Criteria'** provided. Students should complete '**Brainstorm'** for their project.						
Plenary							
Time 5-10 mins	Recap today's lesson. Focus on meeting the brief and criteria required in unit 5. The example code to make a racing game is provided via PDF. Students must use a UAE theme in their projects.						

	For HW students should create sketches of the sprites they will use and decide on the blocks they will use.
Assessment focus	**Project**
Learning curve	The entire course plus specific instructional videos are available on Learning curve via this link: https://learningcurve.moe.gov.ae/en/default/Course#/view/2280/false/2335/Home Access code: CdScISPHcUaRPaZSe_9tHg

Grade	4	Subject	DT	Lesson number	24	Week number	12
Unit		Date		Time		Page number	
5		18/11/2018		45 minutes		167-171	

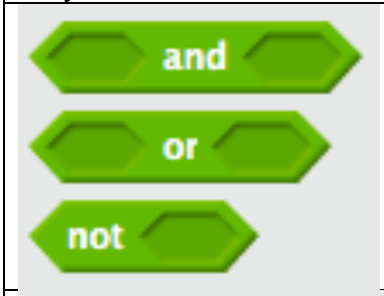
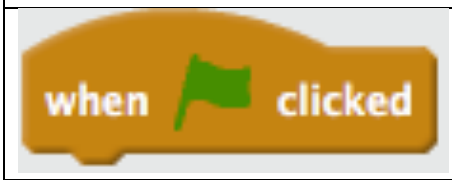
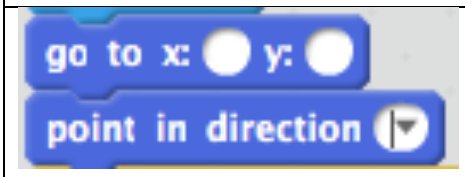
Equipment required: DT book G4 Scratch 2.0 or later	Learning objectives 5.1. Plan and Design a game in Scratch.
Keywords	Design

Starter/Introduction activity

Time	
10 mins	Recap '**Project Brief**' and '**Criteria**'. Continue to work on '**Planning and Design**'. Students should complete all sketches and outline the blocks they plan to use in their project. Teacher's answers TA: 1 mark for selecting appropriate blocks and naming the type.

Planning and design

Circle the blocks you plan to use. Write down the type of block they are. (Maximum **4 Marks)**

	Not used
	Sensing block
	Event block
	Motion block

		Not used
		Variable block
Main		
Time 25-30 mins	Begin to write the program for the '**Project**'. All students will have different ideas. They can use previous programmes/backgrounds/sprites to help them with the final project. As the teacher, look at the marking criteria and ensure all students can meet these. Some students will be more advanced in programming than others So, if you may find that some students need to do more, or some students need to work on an easier program. This is where you need to organise and control the classroom and make sure ALL the students are achieving the LOs.	
Plenary		
Time 5-10 mins	Give students feedback on their work to date. If any of them are falling behind and need to complete HW, make sure it is given in this time.	
Assessment focus	**Project**	
Learning curve	The entire course plus specific instructional videos are available on Learning curve via this link: https://learningcurve.moe.gov.ae/en/default/Course#/view/2280/false/2335/Home Access code: CdScISPHcUaRPaZSe_9tHg	

<table>
<tr><td>Grade</td><td>4</td><td>Subject</td><td>DT</td><td>Lesson number</td><td>25</td><td>Week number</td><td>13</td></tr>
<tr><td colspan="2">Unit</td><td colspan="2">Date</td><td colspan="2">Time</td><td colspan="2">Page number</td></tr>
<tr><td colspan="2">5</td><td colspan="2">25/11/2018</td><td colspan="2">45 minutes</td><td colspan="2">169-175</td></tr>
<tr><td colspan="3">Equipment required:
DT book G4
Scratch 2.0 or later</td><td colspan="5"><u>Learning objectives</u>
5.2. Demonstrate creativity in designing a game.</td></tr>
<tr><td colspan="3">Keywords</td><td colspan="5"></td></tr>
<tr><td colspan="8">Starter/Introduction activity</td></tr>
<tr><td>Time

10 mins</td><td colspan="7">Continue working on the 'Project'.
Any students who needed to complete HW should run ideas by the teacher before continuing to write a program in Scratch.

Remind all the students to follow the criteria and try meet as many points as possible.</td></tr>
<tr><td colspan="8">Main</td></tr>
<tr><td>Time
30 mins</td><td colspan="7">Complete the programming for the 'Project'.

All students will have different designs and different code in their games.

To make sure the project is successful; the students will demonstrate to the teacher and at least one peer.

During the demonstration it should be clear that all criteria from the brief is achieved.

When students run their program, they will have time to fix any problems that might occur. (Testing and Debugging)
Teacher's Answers
Testing
Run your program once. Complete to test for the following: (Maximum 5 marks)

Tick the result box [√] if the program runs correctly or [X] if it fails.

Testing
Test | Result [√] or [X]</td></tr>
</table>

	Sprites **costume change** when the project is running.	Eg. √
	The sprite **'moves'** and makes **'sound/music'** when project is running.	Eg. √
	One **loop block** is in the project instead of repeating the code.	Eg. √
	Two **variable blocks** are displaying values while the project is running (e.g. Time, Score).	Eg. √
	One **Boolean** block is controlling some settings in the project.	Eg. X
	Debugging **If you failed any tests you should make changes to remove errors (debug).**	
Plenary		
Time 5 mins	Students should work through the checklist for programming and tick off all the completed areas.	
Assessment focus	**Project**	
Learning curve	The entire course plus specific instructional videos are available on Learning curve via this link: https://learningcurve.moe.gov.ae/en/default/Course#/view/2280/false/2335/Home Access code: CdScISPHcUaRPaZSe_9tHg	

Grade	4	Subject	DT	Lesson number	26	Week number	13
Unit		Date		Time		Page number	
5		25/11/2018		45 minutes		169-175	

Equipment required:	Learning objectives
DT book G4 Scratch 2.0 or later	5.3. Self-evaluate the design process and the finished project. 5.4. Evaluate peer games created in Scratch and provide feedback using set criteria.
Keywords	evaluate, feedback

Starter/Introduction activity	
Time 5 mins	By now most students should have completed their projects and the debugging stages. If some students need to complete these stages make sure it happens now as it is the final lesson.

Main	
Time 30 mins	Complete the '**Self-evaluation'** and **'Peer-evaluation'** components of Unit 5. '**Two stars and a wish'** Students may already be familiar with this concept of evaluation. Basically, it is 2 good points and 1 point that they can improve on for each area specified in the evaluation. You can give a demonstration of this on the data show, so students understand how to do self-evaluation and peer-evaluation. If any students need extra help to complete their designs and project, it needs to be done now. **'Teacher evaluation'** You can complete the teacher evaluation to award overall marks for the project. The marking schemes for each section are available throughout the project. As the teacher, you will have total discretion to whether students have met the criteria successfully.

Plenary	
Time 10 mins	Wrap up the term. Briefly recap the term and test the students' knowledge on as many elements of Scratch programming as possible in the remaining time of the lesson.
Assessment focus	Project
Learning curve	The entire course plus specific instructional videos are available on Learning curve via this link: https://learningcurve.moe.gov.ae/en/default/Course#/view/2280/false/2335/Home Access code: CdScISPHcUaRPaZSe_9tHg

Grade	4	Subject	DT	Lesson number	27	Week number	14
Unit		Date		Time		Page number	
1-5		2/12/2018		45 minutes		All	
Equipment required: DT book G4 Scratch 2.0 or later				Learning objectives			
Keywords							
Starter/Introduction activity							
		Contingency time, use this to finish any incomplete activities or assessments from the student book.					
Main							
		Contingency time, use this to finish any incomplete activities or assessments from the student book.					
Plenary							
Assessment focus							
Learning curve		The entire course plus specific instructional videos are available on Learning curve via this link: https://learningcurve.moe.gov.ae/en/default/Course#/view/2280/false/2335/Home Access code: CdScISPHcUaRPaZSe_9tHg					

Grade	4	Subject	DT	Lesson number	28	Week number	14
Unit		Date		Time		Page number	
1-5		2/12/2018		45 minutes		All	
Equipment required: DT book G4 Scratch 2.0 or later				Learning objectives			
Keywords							
Starter/Introduction activity							
		Contingency time, use this to finish any incomplete activities or assessments from the student book.					
Main							
		Contingency time, use this to finish any incomplete activities or assessments from the student book.					
Plenary							
Assessment focus							
Learning curve		The entire course plus specific instructional videos are available on Learning curve via this link: https://learningcurve.moe.gov.ae/en/default/Course#/view/2280/false/2335/Home Access code: CdScISPHcUaRPaZSe_9tHg					