<table>
<tr><td>Grade</td><td>7</td><td>Subject</td><td>DT</td><td>Lesson number</td><td>1</td><td>Week number</td><td>1</td></tr>
<tr><td>Unit</td><td colspan="3">Date</td><td colspan="2">Time</td><td colspan="2">Page number</td></tr>
<tr><td>1</td><td colspan="3">2nd September</td><td colspan="2">45 minutes</td><td colspan="2">14 - 20</td></tr>
<tr><td colspan="4">Equipment required:</td><td colspan="4">Learning objectives</td></tr>
<tr><td colspan="4">Python book</td><td colspan="4">1.1 Recognise the importance of programming.
1.3 Recognise algorithms in our daily lives.</td></tr>
<tr><td colspan="4">Keywords</td><td colspan="4">Computer, program, programming, programming language</td></tr>
<tr><td colspan="8">Starter/Introduction activity</td></tr>
<tr><td>Time
10 minutes approx.</td><td colspan="7">Introduce e-safety guidelines as per the introduction in the book (after unit 1 contents). You may choose to do this as an activity (crossword, word search, etc.)</td></tr>
<tr><td colspan="8">Main</td></tr>
<tr><td>Time</td><td colspan="7">This lesson will introduce what programming is and its uses and importance around us.

Each keyword will be covered as it appears in the lesson.

Start with an introduction to the unit (programming) from page 14.
This leads onto current and future jobs that use programming.

Activity 1:
Students discuss job roles and how they will change with the use of technology. Activity 1 is a table that needs to be filled in by the students. The table can be completed as a class discussion or in pairs. See model answers below.

<table>
<tr><th>Job role</th><th>The job role now</th><th>The job role in future</th></tr>
<tr><td>Computer scientist</td><td>Uses technology to solve problems. Writes programs and code to make tasks easier on computers, smartphones, etc.</td><td>Any answer that builds upon the current job role and considers future improvements in technology.</td></tr>
<tr><td>Engineer</td><td>Works in many fields to analyse, develop</td><td>Any answer that builds upon the</td></tr>
</table>
</td></tr>
</table>

	and evaluate systems, to make new systems or improve existing systems.	current job role and considers future improvements in technology.
Information technologist	Supports company computer systems for different types of companies. Needs knowledge of technology, databases, computers and security.	Any answer that builds upon the current job role and considers future improvements in technology.

Before starting activity 2 provide an example to the students of one computer in the house and what it does. Do not use examples of a personal computer, laptops, tablets or smartphones. This could be an example of a computer system inside an appliance. For example, a microwave, which heats up food according to the temperature and time setting.

Activity 2:
Students can complete the table in pairs. Some solutions below.

Number	Computer	What does it do?
1.	House alarm	Senses when an intruder is in the house and sounds the alarm.
2.	Washing machine	Washes clothes according to the wash cycle selected. Lasts for a certain length of time and keeps the water at a certain temperature.
3.	Fridge freezer	Keeps the inside running at a certain temperature that is cold enough for the food to stay fresh.

Discuss how these computers link to **programming** in terms of how they process the program step-by-step and how this is important in the technology around us. Refer to the 'did you know' box to explain high and low-level languages.

	Look at the timeline of **programming languages** and identify the popular **programming languages** with the students. Explain the examples for each on page 20. **Activity 3:** Students will read the passages and fill in the blanks according to the popular programming languages discussed. Solutions below: **Answers:** 1. The first computer algorithm was created by **Ada Lovelace** 2. **Short Code** was one of the first high level languages made for a computer. 3. **C** is the world's most popular programming language. Other languages such as **C#, Java and Python** have been developed from this. 4. Pinterest and Instagram have been made using the **Python** programming language.
Plenary	
Time	Summarise the lesson, recapping the Learning objectives and key vocabulary used throughout. Complete any activities not completed in class as homework.
Assessment focus	Recognise the importance of programming and the use of algorithms in our lives.
Learning Curve	The entire course plus specific instructional videos are available on Learning Curve via this link (USE bit.ly): https://learningcurve.moe.gov.ae/en/default/Course#/view/2280/false/2335/CourseMap/Session/View/51a2c7d8-5c0d-4430-bc17-6430e7a2462d The access code is:

<table>
<tr><td>Grade</td><td>7</td><td>Subject</td><td>DT</td><td>Lesson number</td><td>2</td><td>Week number</td><td>1</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">1</td><td colspan="2">2nd September</td><td colspan="2">45 minutes</td><td colspan="2">21 - 23</td></tr>
<tr><td colspan="4">Equipment required:</td><td colspan="4">Learning objectives</td></tr>
<tr><td colspan="4">Computers with PyCharm
Python book</td><td colspan="4">1.3 Recognise algorithms in our daily lives.</td></tr>
<tr><td colspan="4">Keywords</td><td colspan="4">program, algorithm, flowchart</td></tr>
<tr><td colspan="8">Starter/Introduction activity</td></tr>
<tr><td>Time
10 minutes approx.</td><td colspan="7">Recap computers in the home from last lesson. You may choose to do this as an activity (crossword, word search, etc.).</td></tr>
<tr><td colspan="8">Main</td></tr>
<tr><td>Time</td><td colspan="7">Start introducing algorithms on page 21.

Look at what algorithms are and how a computer uses them. Use an example to explain this: cup of coffee, page 21.
Talk the students through the example explaining that the steps must be followed to achieve a result.
What would happen if the order was changed? Answer on the same page after Fig 1.10.

Activity 4:
This is a matching task in which students need to match the images to the algorithm needed. This is to be done individually.
Solutions below:

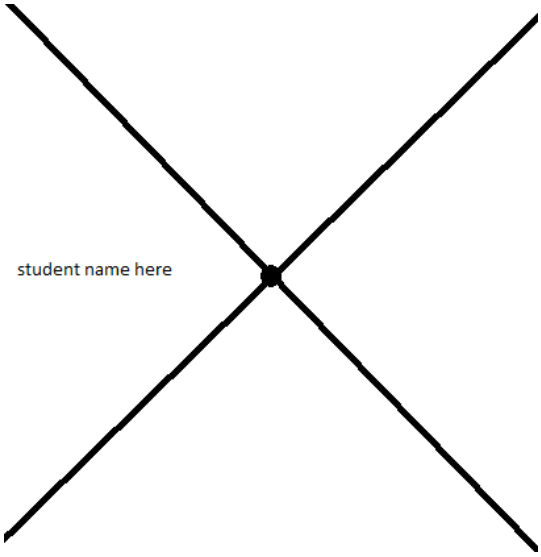
  You can find the algorithm to solve this problem in a cookbook!

  The algorithm you need is a set of direc
There might be different ways to the ge
there, so you can have different algorith</td></tr>
</table>

The algorithm you need here is the list of instructions for building a toy.

Activity 5:

Students follow the instructions to draw an image using an algorithm. It should look like the image below. Follow the steps and show the solution on the board after each student has attempted it individually.



Activity 6:

Now, students attempt to write their own algorithm for a cup of tea. Students may work in pairs; however, the teacher must not support the students. This task is to check how well they have understood the concept of algorithms. Solutions will vary but one solution is shown below:

	Take a cup. Put water in the kettle. Boil the water in the kettle. Put the teabag into the cup. Pour boiling water into the cup. Remove the teabag. Add milk if required. Add sugar if required.
Plenary	
Time	Summarise the lesson through student feedback. Students to present their solution for Activity 6. Teacher to clarify any issues with the algorithms. Complete any activities not completed in class for homework.
Assessment focus	Recognise the importance of algorithms in our lives
Learning Curve	The entire course plus specific instructional videos are available on Learning Curve via this link (USE bit.ly): https://learningcurve.moe.gov.ae/en/default/Course#/view/2280/false/2335/CourseMap/Session/View/51a2c7d8-5c0d-4430-bc17-6430e7a2462d The access code is: …

Grade	7	Subject	DT	Lesson number	3	Week number	1
Unit		**Date**		**Time**		**Page number**	
1		2nd September		45 minutes		24 - 27	
Equipment required:				**Learning objectives**			
Computers with PyCharm Python book				1.2 Identify the key **programming terms.** 1.5 Practise **Python** using **PyCharm** interface.			
Keywords				program, programming, programming language, Python, PyCharm			
Starter/Introduction activity							
Time 10 minutes approx.	Recap previous lesson about algorithms. You may choose to do an algorithm on the board together as a class.						
Main							
Time	This lesson will introduce students to **programming** in **Python** using the software **PyCharm**. Start with introducing the Python programming language, page 24. Then, introduce PyCharm as the IDE we will be using to program in Python, page 24. **Activity 7: page 24** Explain the two main elements that will be used in the program (print() function and " "). Demonstrate to the whole class how to set up a new PyCharm project. Use the steps in the book (steps 1-3). Allow the students to follow the steps as you do them. Then, show them how to create a new Python file. Explain that the project folder can store many Python files. Each Python file contains the code for one program. Let students follow the remaining steps to complete the hello world program and run it. Clarify step 7 to the students. They will then answer the question on page 27. What did the print() function do in this program?						

	The print function displayed the text between the brackets – hello world
Plenary	
Time	Summarise the lesson, recapping the learning objectives and the key vocabulary used throughout. Complete any activities not completed in class as homework.
Assessment focus	Be able to use PyCharm to create a Python program
Learning Curve	The entire course plus specific instructional videos are available on Learning Curve via this link (USE bit.ly): https://learningcurve.moe.gov.ae/en/default/Course#/view/2280/false/2335/CourseMap/Session/View/51a2c7d8-5c0d-4430-bc17-6430e7a2462d The access code is: …

Grade	7	Subject	DT	Lesson number	1	Week number	2
Unit	Date		Time		Page number		
1	9th September		45 minutes		28 - 29		
Equipment required:			Learning objectives				
computers with PyCharm Python book			1.2 Identify the key **programming terms**. 1.6 Review the code for **debugging** purposes.				
Keywords			programming, Python, PyCharm, debugging				
Starter/Introduction activity							
Time 10 minutes approx.	Recap previous lesson on how to set up a new project and Python file in PyCharm. You may choose to do this as a student-led activity.						
Main							
Time	Introduce the concept of error handling through the example on page 28. Students input the new code (below) into a Python file and answer the question. `print(hello world)` Answer: The code will not work. The output will display a syntax error. Use the book to explain how to identify errors in a code and what debugging is: the process of finding and solving errors in code. Activity 8: Students to identify the error in the code, they may also choose to correct the code. Solution: The print function is missing a closing quotation mark and closing bracket. print(“My name is Asma.”) Students work through the two tasks on the next page. Solutions below: Answer 1: SyntaxError: EOL while scanning string literal						

	Answer 2: Both are syntax errors, which means the interpreter doesn't know how to run the code. SyntaxError: invalid syntax – this error means the code has not been written correctly. SyntaxError: EOL while scanning string literal – this means you are missing the end quotation mark
Plenary	
Time	Summarise the lesson by recapping the learning objectives and the key vocabulary used throughout. Complete any activities not completed in class as homework.
Assessment focus	Be able to identify errors in programs/code
Learning Curve	The entire course plus specific instructional videos are available on Learning Curve via this link (USE bit.ly): https://learningcurve.moe.gov.ae/en/default/Course#/view/2280/false/2335/CourseMap/Session/View/51a2c7d8-5c0d-4430-bc17-6430e7a2462d The access code is: …

Grade	7	Subject	DT	Lesson number	2	Week number	2
Unit		Date		Time		Page number	
1		9th September		45 minutes		30 - 31	
Equipment required:				Learning objectives			
Python book				1.4 Construct **flowcharts** from **algorithms**. 1.7 Translate **algorithms** into working **programs**.			
Keywords				program, algorithm, flowchart			
Starter/Introduction activity							
Time 10 minutes approx.	Recap previous lesson on debugging and finding errors in code. Provide the students with some code snippets and allow them to solve the error.						
Main							
Time	Recap what an algorithm is. This can be done as a quiz. **Activity 9:** This lesson will start with students writing an algorithm for getting ready for school. Solutions for this will vary. It is encouraged to allow each student to come up with their own ideas. Therefore, working individually is best. The teacher then introduces the basics of a flowchart. Ensure students are familiar with the four different shapes and when they should be used. Clarify that the flowchart must have a start and stop point and that all the shapes are connected with an arrow, not a line. The arrow shows the direction the information flows in. **Activity 10:** Students will translate their algorithm for getting ready for school into a flowchart. They have been provided a starting point and must continue using the correct shapes as they go. The teacher may wish to do this together as a class depending on the ability of the class. Students need to use the output box to print each step of their algorithm. They should complete the flowchart with the stop symbol.						

Plenary	
Time	Summarise the lesson by recapping the learning objectives and the key vocabulary used throughout. Show the flowchart shapes and allow the students to match the correct use of the shape. Students should complete any activities not completed in class as homework.
Assessment focus	Be able to create flowchart from an algorithm
Learning Curve	The entire course plus specific instructional videos are available on Learning Curve via this link (USE bit.ly): https://learningcurve.moe.gov.ae/en/default/Course#/view/2280/false/2335/CourseMap/Session/View/51a2c7d8-5c0d-4430-bc17-6430e7a2462d The access code is: …

<table>
<tr><td>Grade</td><td>7</td><td>Subject</td><td>DT</td><td>Lesson number</td><td>3</td><td>Week number</td><td>2</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">1</td><td colspan="2">9th September</td><td colspan="2">45 minutes</td><td colspan="2">32</td></tr>
<tr><td colspan="4">Equipment required:</td><td colspan="4">Learning objectives</td></tr>
<tr><td colspan="4">Python book
Computers with PyCharm</td><td colspan="4">1.5 Practise Python using PyCharm interface.
1.7 Translate algorithms into working programs.</td></tr>
<tr><td colspan="4">Keywords</td><td colspan="4">program, programming, algorithm, flowchart</td></tr>
<tr><td colspan="8">Starter/Introduction activity</td></tr>
<tr><td>Time
10 minutes approx.</td><td colspan="7">Recap previous lesson on flowchart shapes and their uses. Provide a blank flowchart and allow the students to complete it for a basic algorithm.</td></tr>
<tr><td colspan="8">Main</td></tr>
<tr><td>Time</td><td colspan="7">Activity 11:
Students will translate the algorithm from the previous lesson into code. To do this, they will use the print() function for each step in the algorithm.

The students can create a new Python file inside their existing project folder in PyCharm. Teacher to recap how to do this. The teacher will support students in writing their code and help with debugging.

Students should be encouraged to debug error for themselves. Some common errors are:
• The text inside the print() function is not surrounded with “ “
• A small p has not been used for the print() function

Answers will be in the format of:
print(“step 1”) – where step 1 is the text for the first step in the algorithm
print(“step 2”)
print(“step 3”) etc.

Students to answer the question on page 32.
Answer: The output shows the steps in the algorithm.</td></tr>
<tr><td colspan="8">Plenary</td></tr>
</table>

Time	Summarise the lesson by recapping the learning objectives and the key vocabulary used throughout. Students should complete any activities not completed in class as homework.
Assessment focus	Be able to create a flowchart from an algorithm and translate this into a program
Learning Curve	The entire course plus specific instructional videos are available on Learning Curve via this link (USE bit.ly): https://learningcurve.moe.gov.ae/en/default/Course#/view/2280/false/2335/CourseMap/Session/View/51a2c7d8-5c0d-4430-bc17-6430e7a2462d The access code is: …

Grade	7	Subject	DT	Lesson number	1	Week number	3
Unit	Date			Time		Page number	
1	16th September			45 minutes		33 - 35	

Equipment required:	Learning objectives
Python book computers with PyCharm	1.2 Identify the key **programming terms**.
Keywords	Program, programming, programming language, Python, PyCharm, debugging, algorithm, flowchart
Starter/Introduction activity	
Time 10 minutes approx.	Recap the previous lesson about translating an algorithm/flowchart into code. Provide an algorithm and allow the students to hand write the code.
Main	
Time	**Activity 12:** Students will be introduced to basic formatting: new line \n and tab \t The teacher should explain what each of these do (use the book for reference). Students will then apply their own details into the code snippet in the book to write a small piece of text formatted in code. They should add to this any information they like. Teacher to provide pop quiz for students to complete. ****End of Unit 1****
Plenary	
Time	Summarise the lesson by recapping the learning objectives and the key vocabulary used throughout. Students can type the code from the starter to see if it works. Students should complete any activities not completed in class as homework.
Assessment focus	To apply formatting to a program
Learning Curve	The entire course plus specific instructional videos are available on Learning Curve via this link (USE bit.ly): https://learningcurve.moe.gov.ae/en/default/Course#/view/2280/fa

	lse/2335/CourseMap/Session/View/51a2c7d8-5c0d-4430-bc17-6430e7a2462d The access code is: …

<table>
<tr><td>Grade</td><td>7</td><td>Subject</td><td>DT</td><td>Lesson number</td><td>2</td><td>Week number</td><td>3</td></tr>
<tr><td>Unit</td><td colspan="2">Date</td><td colspan="3">Time</td><td colspan="2">Page number</td></tr>
<tr><td>2</td><td colspan="2">16th September</td><td colspan="3">45 minutes</td><td colspan="2">38 - 45</td></tr>
<tr><td colspan="3">Equipment required:</td><td colspan="5">Learning objectives</td></tr>
<tr><td colspan="3">Python book
computers with PyCharm</td><td colspan="5">2.1 Define variables and constants.
2.2 Identify how to use variables to store and output data.</td></tr>
<tr><td>Keywords</td><td colspan="7">variable, data, user</td></tr>
<tr><td colspan="8">Starter/Introduction activity</td></tr>
<tr><td>Time
10 minutes approx.</td><td colspan="7">Activity to recap the meaning of the keywords from Unit 1. This can be done as a matching or crossword exercise.</td></tr>
<tr><td colspan="8">Main</td></tr>
<tr><td>Time</td><td colspan="7">Start with an introduction to the unit (page 38).
Introduce variables and good practice when naming variables (page 40).
Key points to stress:
• It cannot have spaces.
• It should not start with a lowercase letter (this is good programming practice).
• It cannot start with a number.

Refer to the example on page 40 explaining how a name can be stored. A key point to stress is that the name of the variable does not change, but what is stored inside does change.

Activity 1:
Students will complete Activity 1 to identify suitable variable names based on the information that needs to be stored. Solutions below:
<table>
<tr><th>Information to store</th><th>Variable name</th></tr>
<tr><td>Example:
My age</td><td>Example:
myAge</td></tr>
<tr><td>Your address</td><td>yourAddress</td></tr>
<tr><td>First name</td><td>firstName</td></tr>
<tr><td>Second name</td><td>secondName</td></tr>
</table></td></tr>
</table>

Date of birth	dateOfBirth

This will lead to assigning a value to a variable. The following table must be explained.

Variable name		Value
myName	=	"Asma"

Activity 2:

Students practise assigning values to a variable. They have been provided with the variable name (they know the information required). The students will need to come up with a value to assign to it and then the full code to assign the value.

Variable name	Value	Assigning
Example: studentGrade	Example: 7	Example: studentGrade = 7
myAge	Any answer, e.g. 11	myAge = 11
teacherName	Teachers name, e.g. Mohammed	Remind students about using quotation marks around text: teacherName = "Mohammed"
numOfStudentsInClass	The number of student in the class, e.g. 30	numOfStudentsInClass = 30
friendsName	Any friend name of the student, e.g. Asma	friendsName = "Asma"

Activity 3:

<table>
<tr><td></td><td>This activity will take the students through the process of creating a variable in a Python file. Support the students during this process as they answer the questions. Solutions below:

<table><tr><td>numOfFalcons = 4</td><td>This line assigns the value 4 to the variable numOfFalcons.</td></tr><tr><td>print(numOfFalcons)</td><td>This line prints the value, 4, assigned to the numOfFalcons variable.</td></tr></table></td></tr>
<tr><td colspan="2">Plenary</td></tr>
<tr><td>Time</td><td>Summarise the lesson by recapping the learning objectives and the key vocabulary used throughout. Students can practise entering variables and values from Activity 2. Students should complete any activities not completed in class as homework.</td></tr>
<tr><td>Assessment focus</td><td>To understand how variables work</td></tr>
<tr><td>Learning Curve</td><td>The entire course plus specific instructional videos are available on Learning Curve via this link (USE bit.ly):
https://learningcurve.moe.gov.ae/en/default/Course#/view/2280/false/2335/CourseMap/Session/View/51a2c7d8-5c0d-4430-bc17-6430e7a2462d

The access code is: …</td></tr>
</table>

<table>
<tr><td>Grade</td><td>7</td><td>Subject</td><td>DT</td><td>Lesson number</td><td>3</td><td>Week number</td><td>3</td></tr>
<tr><td>Unit</td><td colspan="3">Date</td><td colspan="2">Time</td><td colspan="2">Page number</td></tr>
<tr><td>2</td><td colspan="3">16th September</td><td colspan="2">45 minutes</td><td colspan="2">46 - 49</td></tr>
<tr><td colspan="4">Equipment required:</td><td colspan="4">Learning objectives</td></tr>
<tr><td colspan="4">Python book
computers with PyCharm</td><td colspan="4">2.2 Identify how to use variables to store and output data.
2.3 Use the input function to get information from a user.</td></tr>
<tr><td colspan="4">Keywords</td><td colspan="4">Variable, data, user, input, output</td></tr>
<tr><td colspan="8">Starter/Introduction activity</td></tr>
<tr><td>Time
10 minutes approx.</td><td colspan="7">Recap previous lesson on good practice for naming variables. This can be done as a quiz.</td></tr>
<tr><td colspan="8">Main</td></tr>
<tr><td>Time</td><td colspan="7">Students will be introduced to the difference between variables that change values and those that don’t. These are called variables and constants.

Start on page 46 and explain how a variable’s value can change. Solution for the question: 5

Then compare this to using constant values in a variable. Explain the content on page 46.

Activity 4:
Students complete Activity 4 to identify variables and constants from a requirement. They will be provided with the use of the variable and the variable name. Solutions below:

<table>
<tr><th>Example</th><th>Variable name</th><th>Variable or constant?</th></tr>
<tr><td>The level number in a computer game</td><td>level</td><td>Variable – the level will increase during the game</td></tr>
<tr><td>High score in a game</td><td>highScore</td><td>Variable – the score is always changing and updating during the game</td></tr>
</table>
</td></tr>
</table>

Player name in a game	playerName	Constant – this stays the same throughout the game
Bonus multiplier in a game	bonus	Constant – this is always set to multiply a value by this amount, for example: If the player collects an item worth 10 points but they have a bonus multiplier active, it will multiply 10 by the value in the bonus variable.

Activity 5:

This activity will involve the students trying code in PyCharm to see how it behaves. It is important that the students try this code for themselves and answer the questions through their own experiences. Solutions below:

Run the program. What are the outputs?

Answer:
13
155

Which variable(s) change their value?

Answer: myHeight

Which variable(s) are constant?

Answer: grade7Age and grade8Age

Plenary	
Time	Summarise the lesson by recapping the learning objectives and the key vocabulary used throughout. Students should complete any activities not completed in class as homework.
Assessment focus	To understand how variables work

Learning Curve	The entire course plus specific instructional videos are available on Learning Curve via this link (USE bit.ly): https://learningcurve.moe.gov.ae/en/default/Course#/view/2280/false/2335/CourseMap/Session/View/51a2c7d8-5c0d-4430-bc17-6430e7a2462d The access code is: …

<table>
<tr><td>Grade</td><td>7</td><td>Subject</td><td>DT</td><td>Lesson number</td><td>1</td><td>Week number</td><td>4</td></tr>
<tr><td>Unit</td><td colspan="3">Date</td><td colspan="2">Time</td><td colspan="2">Page number</td></tr>
<tr><td>2</td><td colspan="3">23rd September</td><td colspan="2">45 minutes</td><td colspan="2">50 - 51</td></tr>
<tr><td colspan="4">Equipment required:</td><td colspan="4">Learning objectives</td></tr>
<tr><td colspan="4">Python book
computers with PyCharm</td><td colspan="4">2.2 Identify how to use variables to store and output data.
2.3 Use the input function to get information from a user.</td></tr>
<tr><td colspan="4">Keywords</td><td colspan="4">variable, data, user, input, output</td></tr>
<tr><td colspan="8">Starter/Introduction activity</td></tr>
<tr><td>Time
10 minutes approx.</td><td colspan="7">Recap previous lesson on good practice for naming variables. This can be done as a quiz.</td></tr>
<tr><td colspan="8">Main</td></tr>
<tr><td>Time</td><td colspan="7">Introduction to inputs in code: start on page 50 and explain how inputs work and how they are used when we require an input from the user.

Activity 6:
Student will write and run the code so they can answer the question. This is multiple choice, solution below:
<table>
<tr><td>The program will not ask for the user’s age.</td><td>The program asks the user for their age, then outputs the value entered.</td></tr>
<tr><td>The program prints nothing.</td><td>The program asks the user for their age, then outputs nothing.</td></tr>
</table>

Activity 7:
Students practise with more code to see how it behaves. In this task, the students need to find the correct code to ask for the user’s name and age; however, it only prints the name. They must try each code to see what the output is. Solution below:

name = “”
age = 0
print(name)
print(age)</td></tr>
</table>

	name = input("Enter your name") age = input("Enter your age") print(name)
	name = input("Enter your name") print(name) print(age)
	name = input("Enter your name") age = input("Enter your age")

Plenary	
Time	Summarise the lesson by recapping the learning objectives and the key vocabulary used throughout. Students should explain what the other blocks of code do for activity 7. Students should complete any activities not completed in class as homework.
Assessment focus	To understand how an input works
Learning Curve	The entire course plus specific instructional videos are available on Learning Curve via this link (USE bit.ly): https://learningcurve.moe.gov.ae/en/default/Course#/view/2280/false/2335/CourseMap/Session/View/51a2c7d8-5c0d-4430-bc17-6430e7a2462d The access code is: …

<table>
<tr><td>Grade</td><td>7</td><td>Subject</td><td>DT</td><td>Lesson number</td><td>2</td><td>Week number</td><td>4</td></tr>
<tr><td>Unit</td><td colspan="2">Date</td><td colspan="3">Time</td><td colspan="2">Page number</td></tr>
<tr><td>2</td><td colspan="2">23rd September</td><td colspan="3">45 minutes</td><td colspan="2">52 - 53</td></tr>
<tr><td colspan="3">Equipment required:</td><td colspan="5">Learning objectives</td></tr>
<tr><td colspan="3">Python book
computers with PyCharm</td><td colspan="5">2.1 Define variables and constants.
2.2 Identify how to use variables to store and output data.
2.3 Use the input function to get information from a user.
2.4 Demonstrate the skills learned by writing short programs.</td></tr>
<tr><td colspan="3">Keywords</td><td colspan="5">variable, data, user, input, output</td></tr>
<tr><td colspan="8">Starter/Introduction activity</td></tr>
<tr><td>Time
10 minutes approx.</td><td colspan="7">Recap previous lesson on using inputs in code. Provide the students with snippets of code to identify what the inputs and outputs are.</td></tr>
<tr><td colspan="8">Main</td></tr>
<tr><td>Time</td><td colspan="7">This lesson will introduce the students to planning code before they write any.

Activity 8:
Spend some time with the students explaining each stage of the planning document. This can be done step-by-step with the whole class. Students must understand the importance of planning code.

Explain that students must know how the code will work, what variables are needed and which functions will be used before they can write the code.

Solution for the planning table below:

<table>
<tr><td>What variables will you need?</td><td>age
address</td></tr>
<tr><td>What will the input text say?</td><td>input(“Enter your age”)
input(“Enter your address”)</td></tr>
<tr><td colspan="2">Write the whole code below</td></tr>
<tr><td colspan="2">age = input("Enter your age")
address = input("Enter your address")</td></tr>
</table>
</td></tr>
</table>

	print(age) print(address) Students will then type their code in to a new PyCharm file to see if it works.
Plenary	
Time	Summarise the lesson by recapping the learning objectives and the key vocabulary used throughout. Students should complete any activities not completed in class as homework.
Assessment focus	To understand the importance of planning code To be able to write their own code from planning
Learning Curve	The entire course plus specific instructional videos are available on Learning Curve via this link (USE bit.ly): https://learningcurve.moe.gov.ae/en/default/Course#/view/2280/false/2335/CourseMap/Session/View/51a2c7d8-5c0d-4430-bc17-6430e7a2462d The access code is: …

<table>
<tr><td>Grade</td><td>7</td><td>Subject</td><td>DT</td><td>Lesson number</td><td>3</td><td>Week number</td><td>4</td></tr>
<tr><td>Unit</td><td colspan="3">Date</td><td colspan="2">Time</td><td colspan="2">Page number</td></tr>
<tr><td>2</td><td colspan="3">23rd September</td><td colspan="2">45 minutes</td><td colspan="2">53, 58 and 59</td></tr>
<tr><td colspan="4">Equipment required:</td><td colspan="4">Learning objectives</td></tr>
<tr><td colspan="4">Python book
computers with PyCharm</td><td colspan="4">2.1 Define variables and constants.
2.2 Identify how to use variables to store and output data.
2.3 Use the input function to get information from a user.
2.4 Demonstrate the skills learned by writing short programs.</td></tr>
<tr><td colspan="4">Keywords</td><td colspan="4">variable, data, user, input, output</td></tr>
<tr><td colspan="8">Starter/Introduction activity</td></tr>
<tr><td>Time
10 minutes approx.</td><td colspan="7">Recap previous lesson on reasons for planning code and why it is important. This can be done as a multiple-choice quiz.</td></tr>
<tr><td colspan="8">Main</td></tr>
<tr><td>Time</td><td colspan="7">Continue completing any outstanding code from the previous lesson.

Activity 8:
Students complete the second program for Activity 8. The box provides a reminder of how to start a new line and how to indent.

Solution for the planning table below:

<table>
<tr><td>What variables do you need?</td><td>nickname
message</td></tr>
<tr><td>What will the input text say?</td><td>input(“Enter your nickname”)
input(“Enter your message”)</td></tr>
<tr><td colspan="2">Write the whole code below</td></tr>
<tr><td colspan="2">nickname input(“Enter your nickname”)
print(“Hello”, nickname)
message = input(“Enter your message”)
print(message)</td></tr>
</table>
</td></tr>
</table>

	Anything similar to this is fine, as long as it meets the requirements. Students then type their code in to a new PyCharm file to see if it works. Students to complete the end of unit assessment.
Plenary	
Time	Summarise the lesson by recapping the learning objectives and the key vocabulary used throughout. Students should complete any activities not completed in class as homework.
Assessment focus	To understand the importance of planning code To be able to write own code from planning Complete end of unit assessment to test understanding
Learning Curve	The entire course plus specific instructional videos are available on Learning Curve via this link (USE bit.ly): https://learningcurve.moe.gov.ae/en/default/Course#/view/2280/false/2335/CourseMap/Session/View/51a2c7d8-5c0d-4430-bc17-6430e7a2462d The access code is: …

<table>
<tr><td>Grade</td><td>7</td><td>Subject</td><td>DT</td><td>Lesson number</td><td>1</td><td>Week number</td><td>5</td></tr>
<tr><td>Unit</td><td colspan="3">Date</td><td colspan="2">Time</td><td colspan="2">Page number</td></tr>
<tr><td>2</td><td colspan="3">30th September</td><td colspan="2">45 minutes</td><td colspan="2">54 - 57</td></tr>
<tr><td colspan="2">Equipment required:</td><td colspan="6">Learning objectives</td></tr>
<tr><td colspan="2">Python book</td><td colspan="6">2.1 Define variables and constants.
2.2 Identify how to use variables to store and output data.
2.3 Use the input function to get information from a user.
2.4 Demonstrate the skills learned by writing short programs.</td></tr>
<tr><td colspan="2">Keywords</td><td colspan="6">variable, data, user, input, output</td></tr>
<tr><td colspan="8">Starter/Introduction activity</td></tr>
<tr><td>Time
10 minutes approx.</td><td colspan="7">Introduction to the task sheet.</td></tr>
<tr><td colspan="8">Main</td></tr>
<tr><td>Time</td><td colspan="7">Students will work on the Unit 2 task sheet.
Teacher will introduce the task.

Student will create a simple Python program that makes use of:
• inputs
• outputs
• formatting

The program will ask the user to enter a title and each line of a poem. The poem will be four lines long. The poem output will only happen after all the lines have been entered.

The title must be indented; each line of the poem must start on a new line.

Before they start, the program must be planned. They must use the table given to plan your program.

This lesson will focus on the planning stage of the task sheet.
Solution below:

<table><tr><td>What variables will you need?</td><td>poemTitle
poemLine1
poemLine2</td></tr></table></td></tr>
</table>

	poemLine3 poemLine4
What will the input text say?	input("Enter the title for the poem") input("Enter line 1 of the poem") input("Enter line 2 of the poem") input("Enter line 3 of the poem") input("Enter line 4 of the poem")
What will you use to start a new line?	\n
What will you use to indent?	\t

Write the whole code below

Solution 1

```
poemTitle = input("Enter the title for the poem")
poemLine1 = input("Enter line 1 of the poem")
poemLine2 = input("Enter line 2 of the poem")
poemLine3 = input("Enter line 3 of the poem")
poemLine4 = input("Enter line 4 of the poem")

print("\t", poemTitle)
print(poemLine1)
print(poemLine2)
print(poemLine3)
print(poemLine4)
```

Solution 2

```
poemTitle = input("Enter the title for the poem")
poemLine1 = input("Enter line 1 of the poem")
poemLine2 = input("Enter line 2 of the poem")
poemLine3 = input("Enter line 3 of the poem")
poemLine4 = input("Enter line 4 of the poem")

print("\t", poemTitle, "\n", poemLine1, "\n",
      poemLine2, "\n", poemLine3, "\n", poemLine4)
```

Plenary	
Time	Summarise the lesson by recapping the learning objectives and the key vocabulary used throughout. Students should complete any activities not completed in class as homework.
Assessment focus	To be able to plan own code

Learning Curve	The entire course plus specific instructional videos are available on Learning Curve via this link (USE bit.ly): https://learningcurve.moe.gov.ae/en/default/Course#/view/2280/false/2335/CourseMap/Session/View/51a2c7d8-5c0d-4430-bc17-6430e7a2462d The access code is: …

<table>
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<tr><td>Unit</td><td colspan="3">Date</td><td colspan="2">Time</td><td colspan="2">Page number</td></tr>
<tr><td>2</td><td colspan="3">30th September</td><td colspan="2">45 minutes</td><td colspan="2">54 - 57</td></tr>
<tr><td colspan="4">Equipment required:</td><td colspan="4">Learning objectives</td></tr>
<tr><td colspan="4">Python book
computers with PyCharm</td><td colspan="4">2.1 Define variables and constants.
2.2 Identify how to use variables to store and output data.
2.3 Use the input function to get information from a user.
2.4 Demonstrate the skills learned by writing short programs.</td></tr>
<tr><td colspan="4">Keywords</td><td colspan="4">variable, data, user, input, output</td></tr>
<tr><td colspan="8">Starter/Introduction activity</td></tr>
<tr><td>Time
10 minutes
app</td><td colspan="7">Recap planning from last lesson and address any issues.</td></tr>
<tr><td colspan="8">Main</td></tr>
<tr><td>Time</td><td colspan="7">Students will continue work on the Unit 2 task sheet. Planning should be completed from the previous lesson. Students must now type the code into PyCharm. The solution is below:

Solution 1
<pre>
poemTitle = input("Enter the title for the poem")
poemLine1 = input("Enter line 1 of the poem")
poemLine2 = input("Enter line 2 of the poem")
poemLine3 = input("Enter line 3 of the poem")
poemLine4 = input("Enter line 4 of the poem")

print("\t", poemTitle)
print(poemLine1)
print(poemLine2)
print(poemLine3)
print(poemLine4)
</pre>
</td></tr>
</table>

Solution 2

```
poemTitle = input("Enter the title for the poem")
poemLine1 = input("Enter line 1 of the poem")
poemLine2 = input("Enter line 2 of the poem")
poemLine3 = input("Enter line 3 of the poem")
poemLine4 = input("Enter line 4 of the poem")

print("\t", poemTitle, "\n", poemLine1, "\n",
      poemLine2, "\n", poemLine3, "\n", poemLine4)
```

Students should then test that it all works as expected. By completing the table below, student should tick either yes or no:

	Yes	No
Does the program run with no errors?		
Can you enter each line of the poem?		
Does the output show the title indented?		
Does the output show each line of the poem on a new line?		

Students to complete the evaluation.

End of Unit 2

Plenary	
Time	Summarise the lesson by recapping the learning objectives and the key vocabulary used throughout. Students should complete any activities not completed in class as homework.
Assessment focus	To be able to write and test own code
Learning Curve	The entire course plus specific instructional videos are available on Learning Curve via this link (USE bit.ly): https://learningcurve.moe.gov.ae/en/default/Course#/view/2280/false/2335/CourseMap/Session/View/51a2c7d8-5c0d-4430-bc17-6430e7a2462d The access code is: …

<table>
<tr><td>Grade</td><td>7</td><td>Subject</td><td>DT</td><td>Lesson number</td><td>3</td><td>Week number</td><td>5</td></tr>
<tr><td>Unit</td><td colspan="3">Date</td><td colspan="2">Time</td><td colspan="2">Page number</td></tr>
<tr><td>3</td><td colspan="3">30th September</td><td colspan="2">45 minutes</td><td colspan="2">62 - 67</td></tr>
<tr><td colspan="4">Equipment required:</td><td colspan="4">Learning objectives</td></tr>
<tr><td colspan="4">Python book
computers with PyCharm</td><td colspan="4">3.1 Define data types and their purpose.
3.2 Recognise the three main data types.</td></tr>
<tr><td colspan="4">Keywords</td><td colspan="4">data type, string, integer, float, convert</td></tr>
<tr><td colspan="8">Starter/Introduction activity</td></tr>
<tr><td colspan="2">Time
10 minutes app</td><td colspan="6">Recap how to input data from a user. Provide the students with some questions on the board for them to come up with a whole Python statement for input.</td></tr>
<tr><td colspan="8">Main</td></tr>
<tr><td>Time</td><td colspan="7">Use the book to introduce data types in a program.
In the table, students must be shown the three main data types and examples of each. The teacher must explain the coding examples clearly. Stress that for string data type the text must be surrounded with “ ”

Activity 1
Students will complete the table for Activity 1. The students are given a variable name and must identify the data to store in the variable and which of the three main data types it is: float, integer or string. Solutions below:

<table>
<tr><th>Variable</th><th>Data</th><th>Data type</th></tr>
<tr><td>Example:
name</td><td>Example:
“Asma”</td><td>Example:
string</td></tr>
<tr><td>friendName</td><td>“Mohammed”
(any name is fine but must be surrounded by quotation marks)</td><td>string</td></tr>
<tr><td>age</td><td>11
(any integer value is correct)</td><td>integer</td></tr>
<tr><td>emirateLiving</td><td>“Dubai”</td><td>string</td></tr>
<tr><td>gameScore</td><td>2000</td><td>integer</td></tr>
</table>
</td></tr>
</table>

gameLevel	1	integer
distanceToSchoolKm	10.5	float

Player
Time
Level
Yellow dot
Jewels
Enemies

Go through page 66 to explain how and why we move between different data types. Take the students through the stages of doing this using the explanation from the book. The two lines for input and converting to integer can be condensed into one line but explain this to the students as two separate lines to ensure they understand the process.

Activity 2:

This activity can be done on the computer. The students need to enter the two lines of code for each question and write the output. The teacher can encourage the students to attempt this in the book first, before trying it on the computer, depending on time. Solutions below:

weight = 45.5 weight = int(weight)	45
length = 100 length = float(length)	100.0
streetName = "34b street" streetName = int(streetName)	ValueError
airportCode = "DXB" airportCode = string(airportCode)	DXB

	shoeSize = input("Enter your shoe size") shoeSize = int(shoeSize)	Any number entered by the user without decimals

Plenary	
Time	Summarise the lesson by recapping the learning objectives and the key vocabulary used throughout. Recap the three main data types. Students should complete any activities not completed in class as homework.
Assessment focus	Knowing what data types are and the three main types as well as how to convert between them
Learning Curve	The entire course plus specific instructional videos are available on Learning Curve via this link (USE bit.ly): https://learningcurve.moe.gov.ae/en/default/Course#/view/2280/false/2335/CourseMap/Session/View/51a2c7d8-5c0d-4430-bc17-6430e7a2462d The access code is: …

<table>
<tr><td>Grade</td><td>7</td><td>Subject</td><td>DT</td><td>Lesson number</td><td>1</td><td>Week number</td><td>6</td></tr>
<tr><td>Unit</td><td colspan="2">Date</td><td colspan="2">Time</td><td colspan="2">Page number</td></tr>
<tr><td>3</td><td colspan="2">7th October</td><td colspan="2">45 minutes</td><td colspan="2">69 - 71</td></tr>
<tr><td colspan="3">Equipment required:</td><td colspan="5">Learning objectives</td></tr>
<tr><td colspan="3">Python book
computers with PyCharm</td><td colspan="5">3.2 Recognise the three main data types.
3.3 Formulate the code which will convert between data types.
3.6 Use correct operators to perform calculations.</td></tr>
<tr><td colspan="3">Keywords</td><td colspan="5">data type, string, integer, float, convert</td></tr>
<tr><td colspan="8">Starter/Introduction activity</td></tr>
<tr><td>Time
10 minutes
app</td><td colspan="7">Recap the three main data types and how to convert between them. This can be done as a series of statements to identify the correct one to convert.</td></tr>
<tr><td colspan="8">Main</td></tr>
<tr><td>Time</td><td colspan="7">Use page 68 to introduce how different data types can be combined and used together. Stress the keyword concatenation. This is when we join different bits of data together.

Activity 3
Students handwrite code for a game lobby as per the instructions in the book. They can then type this into PyCharm to test if it works. Solution below:

score = 0
username = input("Enter a username for the lobby")
print("Welcome ", username, "your current score is ", score)

Introduce operators, on page 70, and how they work in code. Use the examples in the table to explain that we can perform calculations.

Activity 4:
Students practice the use of operators through writing a score-keeper program as per the instructions in the book. Students first need to plan the different stages of the code. This will get them thinking about how the program is constructed. Solution below:
<table><tr><td>What variable names will you need?</td><td>score - variable
hitValue - constant</td></tr></table></td></tr>
</table>

	Which is a variable and which is a constant?	
	Which keyword will you use to output the score?	print( )
	Which operator will you use to deduct the value from the score?	- (subtract)
	Write the whole code below:	
	score = 100 hitValue = 5 score = score – hitValue score = score – hitValue print(score)	
	Write this code in a new Python file. What is the answer?	
	If your code did not work, try to debug it to see where any errors are. Check for any red lines in your code. Answer: score = 90	

Plenary	
Time	Summarise the lesson by recapping the learning objectives and the key vocabulary used throughout. Students can type their code into PyCharm to test if it works. Students should complete any activities not completed in class as homework. and solve any errors in the program code.
Assessment focus	To create programs that combine data types and use mathematical operators.
Learning Curve	The entire course plus specific instructional videos are available on Learning Curve via this link (USE bit.ly): https://learningcurve.moe.gov.ae/en/default/Course#/view/2280/false/2335/CourseMap/Session/View/51a2c7d8-5c0d-4430-bc17-6430e7a2462d The access code is: …

Grade	7	Subject	DT	Lesson number	2	Week number	6
Unit		Date		Time		Page number	
3		7th October		45 minutes		72 - 73	
Equipment required:				Learning objectives			
Python book computers with PyCharm				3.2 Recognise the three main **data types**. 3.4 Use the combination of different **data types** to form a meaningful **output**. 3.6 Use correct **operators** to perform **calculations**.			
Keywords				data type, string, integer, float, convert			

Starter/Introduction activity	
Time 10 minutes app	Recap concatenation and operators from previous lesson. Teachers can help by giving examples on the board for using concatenation and variables. Operators can be done as a fill-in-the-blanks exercise in which students must solve a mathematical problem by filling in the operator and saving the result in a variable.
Main	
Time	Students will spend the lesson planning and writing a program that combines using inputs, operators and concatenation. **Activity 5:** The teacher can either do the task step-by-step with students (recommended), or let the students attempt each step on their own before going through the solution. Whichever option you choose depends on the ability of the students. Plan and write a calculator program that: 1. asks the user for two numbers. 2. converts the numbers to a float or integer. 3. performs addition on the numbers. 4. prints the result in the following way: 'the addition answer is (answer)' 5. performs subtraction on the numbers. 6. prints the result in the following way: 'the subtraction answer is (answer)'. 7. performs multiplication on the numbers. 8. prints the result in the following way: 'The multiplication answer is (answer)'.

9. performs division on the numbers.
10. prints the result in the following way: 'The division answer is (answer)'.

Solution below:

What variable names will you need?	userNum1 userNum2 addAnswer subAnswer multiAnswer divAnswer
Which keyword will you use to output the results?	print( )

Write the whole code below

```
userNum1 = input("Enter a value for number 1")
userNum1 = float(userNum1)

userNum2 = input("Enter a value for number 2")
userNum2 = float(userNum2)

addAnswer = userNum1 + userNum2
print("The addition answer is", addAnswer)

subAnswer = userNum1 - userNum2
print("The subtraction answer is", subAnswer)

multiAnswer = userNum1 * userNum2
print("The multiplication answer is", multiAnswer)

divAnswer = userNum1 / userNum2
print("The division answer is", divAnswer)
```

Write this code in a new Python file. Did it work?

If your code did not work, try to debug it to see where any errors are. Check for any red lines in your code.

Plenary	
Time	Summarise the lesson by recapping the learning objectives and the key vocabulary used throughout. Students should complete any activities not completed in class as homework. and solve any errors in the program code.
Assessment focus	To create programs that uses inputs, concatenation and mathematical operators
Learning Curve	The entire course plus specific instructional videos are available on Learning Curve via this link (USE bit.ly): https://learningcurve.moe.gov.ae/en/default/Course#/view/2280/false/2335/CourseMap/Session/View/51a2c7d8-5c0d-4430-bc17-6430e7a2462d The access code is: …

Grade	7	Subject	DT	Lesson number	3	Week number	6
Unit		Date		Time		Page number	
3		7th October		45 minutes		74 - 76	

Equipment required:	Learning objectives
Python book computers with PyCharm	3.5 Apply the knowledge of **conditional statements** to determine the correct **output**.
Keywords	selection, if, elif, else, output

Starter/Introduction activity

Time 10 minutes app	Recap concatenation and operators from previous lesson. Teachers can help by giving examples on the board for using concatenation and variables. Operators can be done as a fill-in-the-blanks exercise in which students must solve a mathematical problem by filling in the operator and saving the result in a variable.

Main

Time

Use page 74 to introduce conditional statements and their uses in code. This will lead on to the 4 conditional operators and what they mean. Students will check their understanding of this in the next activity.

Activity 6:

Students will identify what a condition statement is asking and whether the condition is true or false as a result. Solutions are below:

Assign value	Condition	What is it asking?	True / False
lives = 5	lives > 0	Is lives more than zero?	true
	lives == 4	Is lives equal to 4?	false
emirate = “ajman”	emirate == “Ajman”	Is emirate equal to Ajman?	false
	emirate == “ajman”	Is emirate equal to ajman?	true
carEngine = 1.2	carEngine != 1.2	Is car engine not equal to 1.2?	false
height = 1.5	height < 1.0	Is height less than 1.0?	false

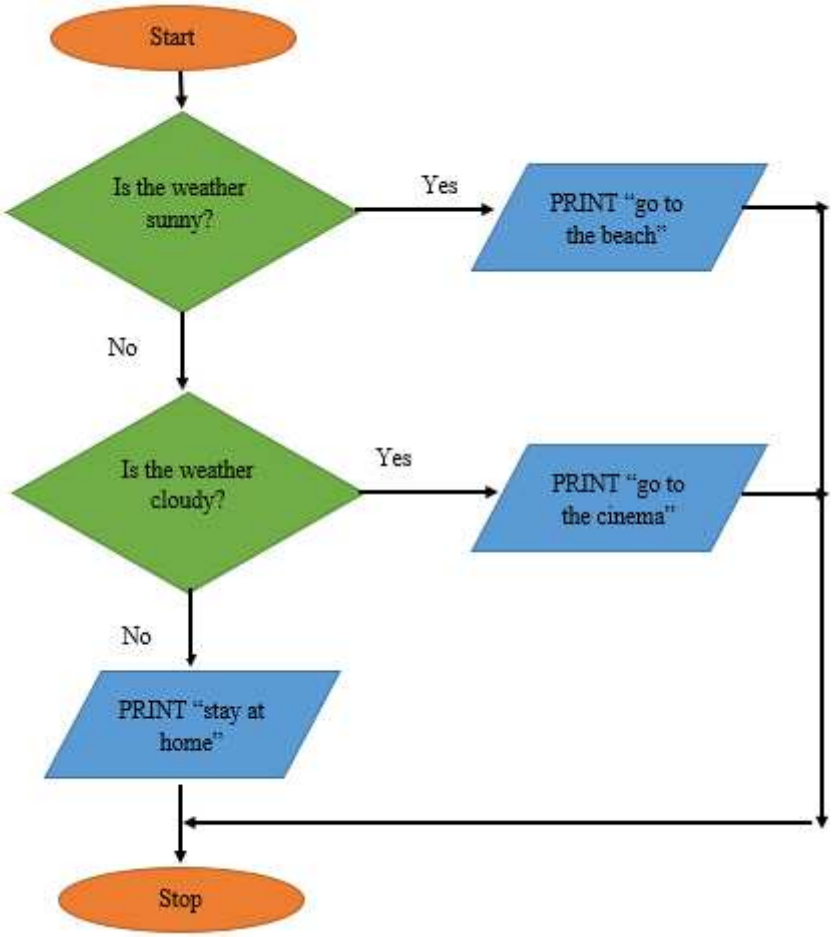
	height < 2.0	Is height less than 2.0?	true

Clarify the answers with the students before moving on to the next task.

Use page 75 to explain how we write condition in Python. This will be used in the next activity.

Activity 7:

Students draw a flowchart for a program to check the weather and produce the correct output based on the weather. They will make use of the diamond shape, not used previously, which is used for conditions.
Solution below:



Plenary

Time	Summarise the lesson by recapping the learning objectives and the key vocabulary used throughout. Students should complete any activities not completed in class as homework.
Assessment focus	To understand selection and produce a flowchart with selection.
Learning Curve	The entire course plus specific instructional videos are available on Learning Curve via this link (USE bit.ly): https://learningcurve.moe.gov.ae/en/default/Course#/view/2280/false/2335/CourseMap/Session/View/51a2c7d8-5c0d-4430-bc17-6430e7a2462d The access code is: …

<table>
<tr><td>Grade</td><td>7</td><td>Subject</td><td>DT</td><td>Lesson number</td><td>1</td><td>Week number</td><td>7</td></tr>
<tr><td>Unit</td><td colspan="3">Date</td><td colspan="2">Time</td><td colspan="2">Page number</td></tr>
<tr><td>3</td><td colspan="3">14th October</td><td colspan="2">45 minutes</td><td colspan="2">77 - 79</td></tr>
<tr><td colspan="4">Equipment required:</td><td colspan="4">Learning objectives</td></tr>
<tr><td colspan="4">Python book
computers with PyCharm</td><td colspan="4">3.5 Apply the knowledge of conditional statements to determine the correct output.</td></tr>
<tr><td colspan="4">Keywords</td><td colspan="4">selection, if, elif, else, output</td></tr>
<tr><td colspan="8">Starter/Introduction activity</td></tr>
<tr><td>Time
10 minutes
app</td><td colspan="7">Recap of the correct uses of the selection operators. This can be done as an activity in which the students must use the correct operator to make the condition true or false.</td></tr>
<tr><td colspan="8">Main</td></tr>
<tr><td>Time</td><td colspan="7">Students will be taught the keywords if, elif and else and how they are used for selection in Python code. Use the explanation and sample code on page 77 to help with this.

Activity 8:

Students analyse code to identify the correct output.
Solution:
Number 1 is equal to 15

Activity 9:

Students start the planning process for the code for the flowchart created last lesson. They must complete the variables and keywords section and understand why these must be used. Solution below:

<table>
<tr><td>What variable names will you need?</td><td>weather</td></tr>
<tr><td>Which keywords will you use in the program?</td><td>print( )
if
elif
else</td></tr>
</table>
</td></tr>
<tr><td colspan="8">Plenary</td></tr>
</table>

Time	Summarise the lesson by recapping the learning objectives and the key vocabulary used throughout. Students should complete any activities not completed in class as homework.
Assessment focus	To understand how to write selection statements in Python
Learning Curve	The entire course plus specific instructional videos are available on Learning Curve via this link (USE bit.ly): https://learningcurve.moe.gov.ae/en/default/Course#/view/2280/false/2335/CourseMap/Session/View/51a2c7d8-5c0d-4430-bc17-6430e7a2462d The access code is: …

<table>
<tr><td>Grade</td><td>7</td><td>Subject</td><td>DT</td><td>Lesson number</td><td>2</td><td>Week number</td><td>7</td></tr>
<tr><td>Unit</td><td colspan="3">Date</td><td colspan="2">Time</td><td colspan="2">Page number</td></tr>
<tr><td>3</td><td colspan="3">14th October</td><td colspan="2">45 minutes</td><td colspan="2">79</td></tr>
<tr><td colspan="4">Equipment required:</td><td colspan="4">Learning objectives</td></tr>
<tr><td colspan="4">Python book
computers with PyCharm</td><td colspan="4">3.5 Apply the knowledge of conditional statements to determine the correct output.</td></tr>
<tr><td colspan="4">Keywords</td><td colspan="4">Selection, if, elif, else, output</td></tr>
<tr><td colspan="8">Starter/Introduction activity</td></tr>
<tr><td>Time
10 minutes
app</td><td colspan="7">Recap of the correct uses of the selection operators. This can be done as an activity in which the students must use the correct operator to make the condition true or false.</td></tr>
<tr><td colspan="8">Main</td></tr>
<tr><td>Time</td><td colspan="7">Activity 9 continued:

Students complete the planning process for the code for the flowchart created for Activity 7. Solution below:

<table>
<tr><td>What variable names do you need?</td><td>weather</td></tr>
<tr><td>Which keywords will you use in the program?</td><td>print( )
if
elif
else</td></tr>
<tr><td colspan="2">Write the whole code below</td></tr>
<tr><td colspan="2">weather = input(“Enter the weather”)

if (weather == “sunny”):
print (“go to the beach”)
elif (weather == “cloudy”):
print (“go to the cinema”)
else:
print (“stay at home”)</td></tr>
<tr><td colspan="2">Write this code in a new Python file. Did it work?</td></tr>
<tr><td colspan="2">If your code did not work, try to debug it to see where any errors are. Check for any red lines in your code.</td></tr>
</table></td></tr>
</table>

	What is the output if you enter the types of weather below:
	sunny — go to the beach
	raining — stay at home
	cloudy — go to the cinema
	Students code their program in PyCharm and test their outputs.
Plenary	
Time	Summarise the lesson by recapping the learning objectives and the key vocabulary used throughout. Students should complete any activities not completed in class as homework.
Assessment focus	To understand how to write selection statements in Python
Learning Curve	The entire course plus specific instructional videos are available on Learning Curve via this link (USE bit.ly): https://learningcurve.moe.gov.ae/en/default/Course#/view/2280/false/2335/CourseMap/Session/View/51a2c7d8-5c0d-4430-bc17-6430e7a2462d The access code is: …

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<tr><td>Unit</td><td colspan="3">Date</td><td colspan="2">Time</td><td colspan="2">Page number</td></tr>
<tr><td>3</td><td colspan="3">14th October</td><td colspan="2">45 minutes</td><td colspan="2">80 - 83</td></tr>
<tr><td colspan="4">Equipment required:</td><td colspan="4">Learning objectives</td></tr>
<tr><td colspan="4">Python book
computers with PyCharm</td><td colspan="4">3.7 Distinguish between the different types of software licenses.
3.8 Describe UAE law around piracy.</td></tr>
<tr><td colspan="4">Keywords</td><td colspan="4">software usage, licensing, piracy</td></tr>
<tr><td colspan="8">Starter/Introduction activity</td></tr>
<tr><td>Time
10 minutes
app</td><td colspan="7">Recap the uses of if, elif and else. Apply this to the completed coded segments with these keywords.</td></tr>
<tr><td colspan="8">Main</td></tr>
<tr><td>Time</td><td colspan="7">Use the information from page 80 to explain the different versions of PyCharm.

Activity 10:
This can be done as a teacher-led class activity. Students will be introduced to the different versions of PyCharm, the licenses they have and why they have these particular licenses. Solutions below:
<table>
<tr><th>Software type</th><th>License type</th></tr>
<tr><td>PyCharm Professional Edition</td><td>Single user: the software can only be installed on one computer.</td></tr>
<tr><td>PyCharm Community Edition</td><td>Open source: cannot be sponsored by a company and does not provide profitable services.</td></tr>
<tr><td>PyCharm Educational Edition</td><td>Education software: marked for distribution to educational institutions and students at a reduced price.</td></tr>
</table>
Use the definition of software piracy on page 81 and why it is illegal, as well as the UAE law for piracy.

Activity 11:</td></tr>
</table>

	The answer for this task will come from explaining the box on page 81. Students to complete pop quiz. **End of Unit 3**
Plenary	
Time	Summarise the lesson by recapping the learning objectives and the key vocabulary used throughout. Students should complete any activities not completed in class as homework.
Assessment focus	To understand the different types of software licences and the laws around piracy.
Learning Curve	The entire course plus specific instructional videos are available on Learning Curve via this link (USE bit.ly): https://learningcurve.moe.gov.ae/en/default/Course#/view/2280/false/2335/CourseMap/Session/View/51a2c7d8-5c0d-4430-bc17-6430e7a2462d The access code is: …

<table>
<tr><td>Grade</td><td>7</td><td>Subject</td><td>DT</td><td>Lesson number</td><td>1</td><td>Week number</td><td>8</td></tr>
<tr><td>Unit</td><td colspan="3">Date</td><td colspan="2">Time</td><td colspan="2">Page number</td></tr>
<tr><td>4</td><td colspan="3">WC: 21/10/18</td><td colspan="2">45 minutes</td><td colspan="2">86 - 92</td></tr>
<tr><td colspan="4">Equipment required:</td><td colspan="4">Learning objectives</td></tr>
<tr><td colspan="4">Python book
computers with PyCharm</td><td colspan="4">4.1 Define iteration and use iteration in programs.
4.2 Practise loops by writing short programs.</td></tr>
<tr><td colspan="4">Keywords</td><td colspan="4">iteration/ loops, for loop, while loop</td></tr>
<tr><td colspan="8">Starter/Introduction activity</td></tr>
<tr><td>Time
10 minutes
app</td><td colspan="7">Recap some of the key terms covered so far as a word search or crossword puzzle.</td></tr>
<tr><td colspan="8">Main</td></tr>
<tr><td>Time</td><td colspan="7">Use page 86 to introduce iteration and loops and their importance in coding. A loop is how we iterate in code. Use the coding examples on page 88 to demonstrate how they are more efficient.

Introduce the two types of loops (for and while). From this they should have an idea of when to use a for loop and when to use a while loop.

This lesson will focus on the uses of a for loop. Use page 90 to explain how to write a for loop. We use two keywords: for and range.

Activity 1:
Students copy the code given into a Python file in PyCharm and record the result. Solution below:
1 3 6 10 15

Activity 2:
Students try to write their own for loop. It may be best to do this as a whole class so all can follow while the teacher explains each step. The loop must count from 0 to 20 in 2s. Solution below:
for num in range (0, 21, 2):
print(num)

Students will then try the code in PyCharm and identify any errors.</td></tr>
<tr><td colspan="8">Plenary</td></tr>
</table>

Time	Provide the students with some problems to write loops for. They must identify whether a for or while loop must be used. Summarise the lesson by recapping the learning objectives and the key vocabulary used throughout. Students should complete any activities not completed in class as homework.
Assessment focus	To know what a for loop is and why loops are needed in programs
Learning Curve	The entire course plus specific instructional videos are available on Learning Curve via this link (USE bit.ly): https://learningcurve.moe.gov.ae/en/default/Course#/view/2280/false/2335/CourseMap/Session/View/78c627fd-d286-4b10-9595-62d32de23aef The access code is: …

<table>
<tr><td>Grade</td><td>7</td><td>Subject</td><td>DT</td><td>Lesson number</td><td>2</td><td>Week number</td><td>8</td></tr>
<tr><td>Unit</td><td colspan="3">Date</td><td colspan="2">Time</td><td colspan="2">Page number</td></tr>
<tr><td>4</td><td colspan="3">WC: 21/10/18</td><td colspan="2">45 minutes</td><td colspan="2">93 - 97</td></tr>
<tr><td colspan="4">Equipment required:</td><td colspan="4">Learning objectives</td></tr>
<tr><td colspan="4">Python book</td><td colspan="4">4.2 Practise loops by writing short programs.
4.3 Identify how loops can make code efficient.</td></tr>
<tr><td colspan="4">Keywords</td><td colspan="4">iteration/ loops, for loop, while loop</td></tr>
<tr><td colspan="8">Starter/Introduction activity</td></tr>
<tr><td>Time
10 minutes
app</td><td colspan="7">Recap the keywords used in a for loop. Follow up with a problem where students must write a simple for loop. They can use Activity 2 from the last lesson to help with this</td></tr>
<tr><td colspan="8">Main</td></tr>
<tr><td>Time</td><td colspan="7">Students learn how to write a while loop. Use the sample code to help with this. This leads into Activity 3.

Activity 3:
Students analyse the code from above and explain what it is doing. This can be done as a class activity. Solution below:
The code will run while the value of num is less than 10. It will print each value of num at the end of every loop.

Students write the output of the code and analyse that output. Teacher can show the actual result in a Python file on the board. Solution below:
1 2 3 4 5 6 7 8 9 10

Activity 4:
Students understand the importance and efficiency of using a loop through writing code with and without a loop for the same output.

Students see how writing code in a loop is more efficient than not using a loop. Part A asks the students to plan their program as they have done before and to write the code. Solution below:

<table><tr><td>What variables do you need?</td><td>age
year</td></tr></table></td></tr>
</table>

What will the input text say?	input(“Enter your age”) input(“Enter the current year”)
Write the whole code below	
age = input("Enter your age:") age = int(age) year = input("Enter the current year:") year = int(year) age = age + 1 year = year + 1 print("year is ", year, "age is ", age) Repeated 4 more times	
Write this code in a new Python file. Did it work?	
If your code did not work, try to debug it to see where any errors are. Check for any red lines in your code.	
Write the lines of code that are repeated.	
age = age + 1 year = year + 1 print("year is ", year, "age is ", age)	

Part B asks the students to write code for the same problem using a for loop. Solution below:

```
age = input("Enter your age:")
age = int(age)

year = input("Enter the current year:")
year = int(year)

for num in range(1, 6, 1):
    age = age + 1
    year = year + 1
    print("year is ", year, "age is ", age)
```

	Part C. Teacher to discuss with the students how this is more efficient than the code from Part A. Why do we use a for loop? We have a set number of times we want to loop. We can specify this in a for loop. Part D. Can we use a while loop? Answer is yes. Part E. Student write code for the same problem using a while loop. Solution below: `age = input("Enter your age : ")` `age = int(age)` `year = input("Enter the current year : ")` `year = int(year)` `count = 1` `while (count < 6):` `  age = age + 1` `  year = year + 1` `  print("year is ", year, "age is ", age)` `  count = count + 1`
Plenary	
Time	Activity to compare using normal code instead of using a for or while loop. Which is a better option: a for or while loop? Provide the students with some simple code or problems for this task. Summarise the lesson by recapping the learning objectives and the key vocabulary used throughout. Students should complete any activities not completed in class as homework.
Assessment focus	To know how to write a while loop and why using loops is more efficient
Learning Curve	The entire course plus specific instructional videos are available on Learning Curve via this link (USE bit.ly): https://learningcurve.moe.gov.ae/en/default/Course#/view/2280/false/2335/CourseMap/Session/View/78c627fd-d286-4b10-9595-62d32de23aef The access code is: …

Grade	7	Subject	DT	Lesson number	3	Week number	8
Unit		Date		Time		Page number	
4		WC: 21/10/18		45 minutes		98 - 100	
Equipment required:				Learning objectives			
Python book				4.4 Identify the importance of **commenting** in code. 4.5 Use meaningful **comments** in programs.			
Keywords				iteration/ loops, for loop, while loop			
Starter/Introduction activity							
Time 10 minutes app		Recap the uses of for and while loops and why loops are important in a program.					
Main							
Time		Use page 98 to explain what commenting in code is and why it is important. Demonstrate how to write code in a program. A key point is that it starts with a hash #. After this you can write any comment without it affecting the code. Activity 5: Students explain what the code does based on the comments; the teacher should not support the students in this task. The solution should come from the grey comments in the code. Activity 6: Students write comments in their own programs for the code from Activities 1, 3 and 4. For the solution, any comments are fine as long as they explain the code. This code can also be typed with the comments into a Python file after the students complete it on paper.					
Plenary							
Time		Use the 'did you know' box to explain why it's good practice to write the students' own details at the beginning of a program. Summarise the lesson by recapping the learning objectives and the key vocabulary used throughout. Students should complete any activities not completed in class as homework.					

Assessment focus	To understand the importance of commenting and how to do this in code
Learning Curve	The entire course plus specific instructional videos are available on Learning Curve via this link (USE bit.ly): https://learningcurve.moe.gov.ae/en/default/Course#/view/2280/false/2335/CourseMap/Session/View/78c627fd-d286-4b10-9595-62d32de23aef The access code is: …

<table>
<tr><td colspan="2">Grade</td><td>7</td><td>Subject</td><td>DT</td><td>Lesson number</td><td>1</td><td>Week number</td><td>9</td></tr>
<tr><td>Unit</td><td colspan="3">Date</td><td colspan="2">Time</td><td colspan="2">Page number</td></tr>
<tr><td>4</td><td colspan="3">WC: 28/10/18</td><td colspan="2">45 minutes</td><td colspan="2">101 - 110</td></tr>
<tr><td colspan="4">Equipment required:</td><td colspan="5">Learning objectives</td></tr>
<tr><td colspan="4">Python book</td><td colspan="5">4.2 Practise loops by writing short programs.
4.5 Use meaningful comments in programs.</td></tr>
<tr><td colspan="4">Keywords</td><td colspan="5">Iteration / loops, for loop, while loop</td></tr>
<tr><td colspan="9">Starter/Introduction activity</td></tr>
<tr><td>Time
10 minutes
app</td><td colspan="8">Introduce the end of unit assessment. Recap any topics the class requires (for loop, while loop or commenting).</td></tr>
<tr><td colspan="9">Main</td></tr>
<tr><td>Time</td><td colspan="8">Students will work on the end of unit assessment. Solutions below:
Q1.
<table><tr><td>Loop type</td><td>Description</td></tr><tr><td>for loop</td><td>iterates some code a specific number of times</td></tr><tr><td>while loop</td><td>iterated some code only while a condition is true</td></tr></table>
Q2a. num
Q2b. 0-20
Q2c. 2
Q2d. #This program uses a for loop to count even numbers from 0 to 18
(Student must start the line with a hash, any suitable explanation is correct)

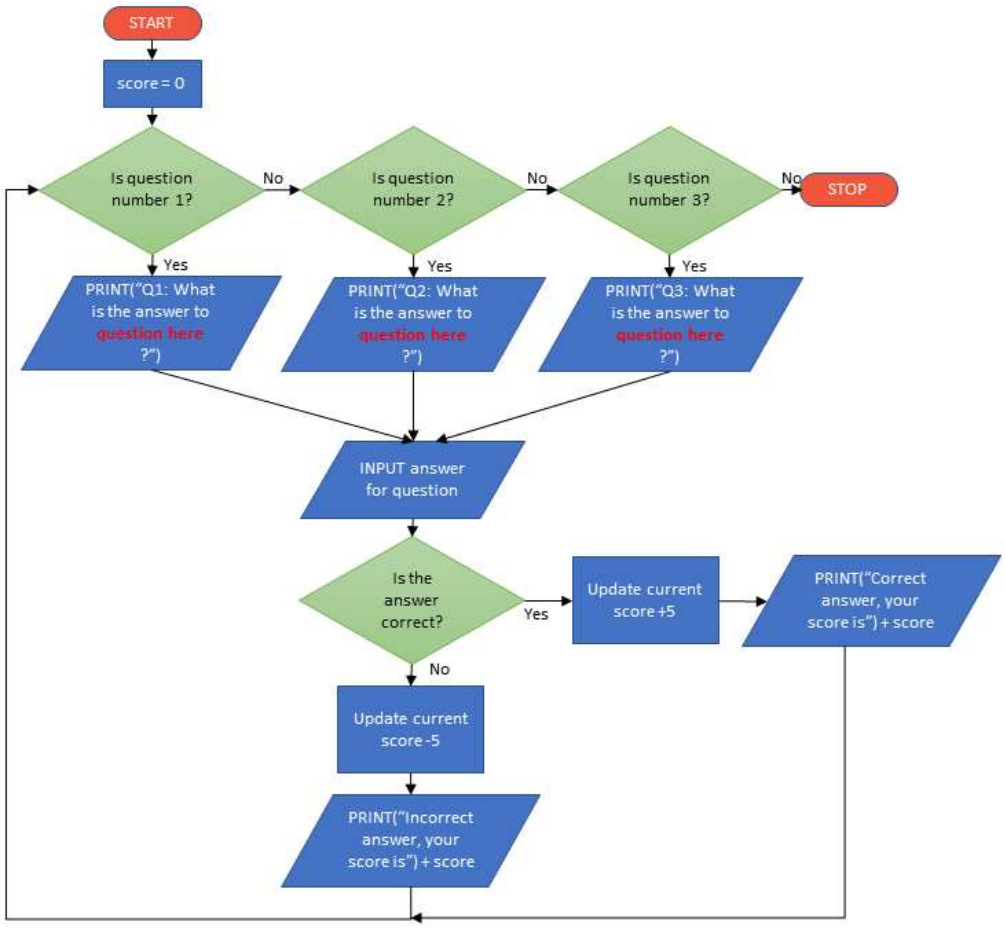
Q3. c. num = 0
while (num < 5):
print (num)
num = num+1

Q4. num = 10</td></tr>
</table>

	while (num > 0): print(num) num = num – 1 Students then start on the unit task sheet. The task must be explained by the teacher. Stress that the work plan must be ticked as each task is completed. Students should have started the flowchart by the end of the lesson.
Plenary	
Time	Summarise the lesson by recapping the learning objectives and the key vocabulary used throughout.
Assessment focus	To clarify understanding of Unit 4
Learning Curve	The entire course plus specific instructional videos are available on Learning Curve via this link (USE bit.ly): https://learningcurve.moe.gov.ae/en/default/Course#/view/2280/false/2335/CourseMap/Session/View/78c627fd-d286-4b10-9595-62d32de23aef The access code is: …

Grade	7	Subject	DT	Lesson number	2	Week number	9
Unit	Date			Time		Page number	
4	WC: 28/10/18			45 minutes		101 - 110	
Equipment required:				Learning objectives			
Python book computer with PyCharm				4.1 Define **iteration** and use **iteration** in programs. 4.5 Use meaningful **comments** in programs.			
Keywords				iteration/ loops, for loop, while loop, comments			

Starter/Introduction activity	
Time 10 minutes app	Reintroduce the task sheet. Clarify the position so far with the task sheet.
Main	
Time	Students must complete the flowchart. Solution below:



They must then complete the planning table for the code.
Solution below:

What variable names do you need?	score question
Which keyword will you use to ask the user for an input?	input( )
Which keyword will you use to output the message and score?	print( )
Which operator will you use to add up and deduct the value from the score?	+ (add) - (subtract)
Which loop will you use for this program? Why?	For loop, because we know we onl want it to loop 3 times.

Write down the 3 questions you will ask and the answers	
Questions	Answers
1. Any questions and answers are fine	
2.	
3.	

Plenary	
Time	Complete any outstanding work for homework.
Assessment focus	To clarify understanding of Unit 4
Learning Curve	The entire course plus specific instructional videos are available on Learning Curve via this link (USE bit.ly): https://learningcurve.moe.gov.ae/en/default/Course#/view/2280/false/2335/CourseMap/Session/View/78c627fd-d286-4b10-9595-62d32de23aef The access code is: ...

Grade	7	Subject	DT	Lesson number	3	Week number	9

Unit	Date	Time	Page number
4	WC: 28/10/18	45 minutes	101 - 110

Equipment required:	Learning objectives
Python book computer with PyCharm	4.1 Define **iteration** and use **iteration** in programs. 4.5 Use meaningful **comments** in programs.
Keywords	Iteration / loops, for loop, while loop, comments

Starter/Introduction activity	
Time 10 minutes app	Reintroduce the task sheet. Clarify the position so far with the task sheet.

Main

Time

Now that students have planned their code, they need to write the code. Solution below:

```
#score is set to 0 outside of the loop
score = 0

#start for loop to run 3 times
for question in range(1, 4, 1):

#check the current loop using the question variable
#select the correct question and answer based on the question value
    if(question == 1):
        print("Q1: What is the answer to 5 - 3?")
        answer = input("Enter your answer for Q1: ")
        #convert inputted answer to an integer
        answer = int(answer)
        #check if answer is correct and increase or deduct points
        if (answer == 2):
            score = score + 5
            print("Correct answer, your score is", score)
        else:
            score = score - 5
            print("Incorrect answer, your score is", score)

    if (question == 2):
        print("Q2: What is the answer to 10 + 6?")
        answer = input("Enter your answer for Q2: ")
```

	`` answer = int(answer) if (answer == 16): score = score + 5 print("Correct answer, your score is", score) else: score = score - 5 print("Incorrect answer, your score is", score) if (question == 3): print("Q3: What is the answer to 4 x 9?") answer = input("Enter your answer for Q3: ") answer = int(answer) if (answer == 36): score = score + 5 print("Correct answer, your score is", score) else: score = score - 5 print("Incorrect answer, your score is", score) ``` They will then complete the testing and debugging table and evaluate the task. Check that all students have completed the work steps.
Plenary	
Time	Complete any outstanding work for homework.
Assessment focus	To clarify understanding of Unit 4.
Learning Curve	The entire course plus specific instructional videos are available on Learning Curve via this link (USE bit.ly): https://learningcurve.moe.gov.ae/en/default/Course#/view/2280/false/2335/CourseMap/Session/View/78c627fd-d286-4b10-9595-62d32de23aef The access code is: …

<table>
<tr><td>Grade</td><td>7</td><td>Subject</td><td>DT</td><td>Lesson number</td><td>1</td><td>Week number</td><td>10</td></tr>
<tr><td>Unit</td><td colspan="3">Date</td><td colspan="2">Time</td><td colspan="2">Page number</td></tr>
<tr><td>5</td><td colspan="3">WC: 18/11/18</td><td colspan="2">45 minutes</td><td colspan="2">114 - 122</td></tr>
<tr><td colspan="4">Equipment required:</td><td colspan="4">Learning objectives</td></tr>
<tr><td colspan="4">Python book</td><td colspan="4">5.1 Apply skills from previous units to produce two programs.
5.2 Produce programs that can perform different calculations from the user inputs.
5.3 Employ the use of comments meaningfully in your code.</td></tr>
<tr><td colspan="4">Keywords</td><td colspan="4"></td></tr>
<tr><td colspan="8">Starter/Introduction activity</td></tr>
<tr><td>Time
10 minutes
app</td><td colspan="7">Use pages 114-116 to introduce the final unit and the project task.</td></tr>
<tr><td colspan="8">Main</td></tr>
<tr><td>Time</td><td colspan="7">Explain that there are two project tasks that hold different marks. The first three lessons will focus on task 1. This task is an extension of the final task for Unit 4. Students can use the code and material they already have and adapt this for the project task.

Students should complete tasks 1 and 2 by the end of the lesson.

Solution for Activity 1.
Project Brief
Write 2-3 sentences to summarise what this project task is about. Consi the purpose of the program, the calculations that will be done and the output.
Answer: Create a quiz that will ask five mathematical questions. The program will update the user's score after every question. +10 is added the score if the answer is correct and -10 is taken from the score if the answer is wrong. The score will be displayed, with a message, after ever answer.
1 mark for summarising what the program will do

Solution for Activity 2:
Refer to the flowchart for the task sheet in Unit 4; this is an extension of that activity.</td></tr>
<tr><td colspan="8">Plenary</td></tr>
</table>

Time	Complete any outstanding work for homework.
Assessment focus	To complete Activities 1 and 2 for project task 1
Learning Curve	The entire course plus specific instructional videos are available on Learning Curve via this link (USE bit.ly): https://learningcurve.moe.gov.ae/en/default/Course#/view/2280/false/2335/CourseMap/Session/View/78c627fd-d286-4b10-9595-62d32de23aef The access code is: …

Grade	7	Subject	DT	Lesson number	2	Week number	10
Unit	Date			Time		Page number	
5	WC: 18/11/18			45 minutes		114 - 122	

Equipment required:	Learning objectives
Python book	5.1 Apply skills from previous units to produce **two programs**. 5.2 Produce programs that can perform **different calculations** from the user **inputs**. 5.3 Employ the use of **comments** meaningfully in your code.
Keywords	user interface, programs, variables, data types, comments, loops, operators

Starter/Introduction activity

Time 10 minutes app	Recap what has been done so far in Activities 1 and 2.

Main

Time

Students work on the planning for the code (Activity 3) and then write the code (Activity 4). They can use previous work from Unit 4 to help with this.

Solution for Activity 3:

What variable names do you need?	score question
Which keyword will you use to ask the user for an input?	input( )
Which keyword will you use to output the message and score?	print( )
Which operator will you use to add up and deduct the value from the score?	+ (add) - (subtract)
Which loop will you use for this program? Why?	For loop, because we know we only want it to loop 5 times.

Write down the 5 questions you will ask and the answers.	
Questions	**Answers**

1. Any questions and answers are fine	
2.	
3.	
4.	
5.	

Solution for Activity 4:

```
#score is set to 0 outside of the loop
score = 0

#start for loop to run 5 times
for question in range(1, 6, 1):

#check the current loop using the question variable
#select the correct question and answer based on the question value
    if(question == 1):
        print("Q1: What is the answer to 5 - 3?")
        answer = input("Enter your answer for Q1: ")
        #convert inputted answer to an integer
        answer = int(answer)
        #check if answer is correct and increase or deduct points
        if (answer == 2):
            score = score + 10
            print("Correct answer, your score is", score)
        else:
            score = score - 10
            print("Incorrect answer, your score is", score)

    if (question == 2):
        print("Q2: What is the answer to 10 + 6?")
        answer = input("Enter your answer for Q2: ")
        answer = int(answer)
        if (answer == 16):
            score = score + 10
            print("Correct answer, your score is", score)
        else:
```

```
            score = score - 10
            print("Incorrect answer, your score is", score)

    if (question == 3):
        print("Q3: What is the answer to 4 x 9?")
        answer = input("Enter your answer for Q3: ")
        answer = int(answer)
        if (answer == 36):
            score = score + 10
            print("Correct answer, your score is", score)
        else:
            score = score - 10
            print("Incorrect answer, your score is", score)

    if (question == 4):
        print("Q4: What is the answer to 100 / 5?")
        answer = input("Enter your answer for Q4: ")
        answer = int(answer)
        if (answer == 20):
            score = score + 10
            print("Correct answer, your score is", score)
        else:
            score = score - 10
            print("Incorrect answer, your score is", score)

    if (question == 5):
        print("Q5: What is the answer to (40 + 8) / 4?")
        answer = input("Enter your answer for Q5: ")
        answer = int(answer)
        if (answer == 12):
            score = score + 10
            print("Correct answer, your score is", score)
        else:
            score = score - 10
            print("Incorrect answer, your score is", score)
#end of program
```

Plenary	
Time	Complete any outstanding work for homework.
Assessment focus	To complete Activity 3 and 4 for project task 1
Learning Curve	The entire course plus specific instructional videos are available on Learning Curve via this link (USE bit.ly): https://learningcurve.moe.gov.ae/en/default/Course#/view/2280/false/

	2335/CourseMap/Session/View/78c627fd-d286-4b10-9595-62d32de23aef The access code is: …

Grade	7	Subject	DT	Lesson number	3	Week number	10
Unit	Date		Time			Page number	
5	WC: 18/11/18		45 minutes			114 - 122	

Equipment required:	Learning objectives
Python book computer with PyCharm	5.1 Apply the skills from previous units to produce **two programs**. 5.2 Produce programs that can perform **different calculations** from user **inputs**. 5.3 Employ the use of **comments** meaningfully in your code.
Keywords	user interface, programs, variables, data types, comments, loops, operators

Starter/Introduction activity	
Time 10 minutes app	Recap what has been done so far in Activities 1-4.

Main	
Time	Students have written the code for their programs. Now, they will enter this into a Python file. In this lesson, they will also test and debug the program. It is important that the teacher allows the students to debug their own programs and only step in if the solution is not obvious. **Activity 5:** **Students to get 1 mark for each completed test from the table.** Teacher to grade according to the evaluation on page 122.

Plenary	
Time	Complete any outstanding work for homework.
Assessment focus	To complete Activity 5 for project task 1
Learning Curve	The entire course plus specific instructional videos are available on Learning Curve via this link (USE bit.ly): https://learningcurve.moe.gov.ae/en/default/Course#/view/2280/false/2335/CourseMap/Session/View/78c627fd-d286-4b10-9595-62d32de23aef The access code is: …

Grade	7	Subject	DT	Lesson number	1	Week number	11
Unit	Date		Time		Page number		
5	WC: 25/11/18		45 minutes		123 - 129		

Equipment required:	Learning objectives
Python book	5.1 Apply skills from previous units to produce **two programs**. 5.2 Produce programs that can perform **different calculations** from the user **inputs**. 5.3 Employ the use of **comments** meaningfully in your code.
Keywords	User interface, programs, variables, data types, comments, loops, operators

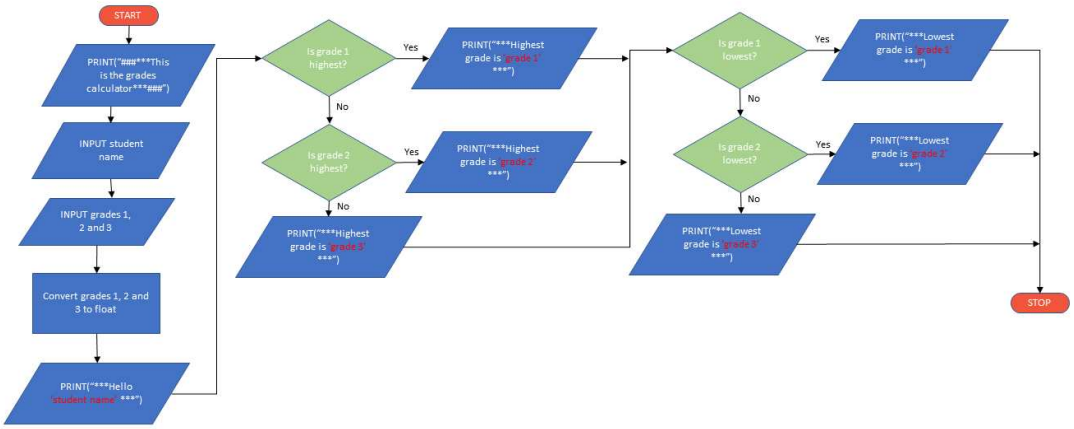
Starter/Introduction activity

Time 10 minutes app	Introduce project task 2 on page 123.

Main

Time	The structure of project task 2 follows the same pattern as project task 1. Students must answer Activity 6 based on the algorithm covered in the introduction. Solution below:

Project Brief
Write 2-3 sentences to summarise what you need to do for this project task. Consider what the program will do and how it will output the results.
Answer: Create a grade calculator that will ask for the student's name and enter grades for 3 subjects. The program will calculate and display the student's name and the average highest and lowest grade for the 3 subjects. Formatting will be used in the output as displayed above. **1 mark for summarising the program** **1 mark for explaining what the program will do**

	Students must then start the flowchart to cover the algorithm. The teacher may want to provide some guidance for this. **Solution for Activity 7:** 

Plenary	
Time	Recap shapes of a flowchart and their uses.
Assessment focus	To complete activity 6 and 7 for project task 2
Learning Curve	The entire course plus specific instructional videos are available on Learning Curve via this link (USE bit.ly): https://learningcurve.moe.gov.ae/en/default/Course#/view/2280/false/2335/CourseMap/Session/View/78c627fd-d286-4b10-9595-62d32de23aef The access code is: …

Grade	7	Subject	DT	Lesson number	2	Week number	11
Unit	**Date**		**Time**			**Page number**	
5	WC: 25/11/18		45 minutes			123 - 129	
Equipment required:			**Learning objectives**				
Python book			5.1 Apply skills from previous units to produce **two programs**. 5.2 Produce programs that can perform **different calculations** from the user **inputs**. 5.3 Employ the use of **comments** meaningfully in your code.				
Keywords			user interface, programs, variables, data types, comments, loops, operators				

Starter/Introduction activity	
Time 10 minutes app	Recap flowchart from previous lesson and which shapes to use.

Main	
Time	Students to complete the flowchart for Activity 7. **Solution for Activity 7:**  Students will then plan their code in activity 8. **Solution for Activity 8:**

What variable names do you need?	studentName subject1, subject2, subject3 averageGrade highest lowest
Which keyword will you use to ask the user for an input?	input( )
Which keyword will you use to output the message and score?	print( )
Which operators will you use to calculate the average grade?	+ (add) / (divide)
How should the title look?	######This is the grades calculator******###

Write down the 3 subjects you will ask the grades for
Subjects: Any subjects are fine
1. DT
2. Mathematics
3. English

Plenary	
Time	Complete any outstanding work for homework.
Assessment focus	To complete Activities 7 and 8 for project task 2
Learning Curve	The entire course plus specific instructional videos are available on Learning Curve via this link (USE bit.ly): https://learningcurve.moe.gov.ae/en/default/Course#/view/2280/false/2335/CourseMap/Session/View/78c627fd-d286-4b10-9595-62d32de23aef The access code is: ...

<table>
<tr><td>Grade</td><td>7</td><td>Subject</td><td>DT</td><td>Lesson number</td><td>3</td><td>Week number</td><td>11</td></tr>
<tr><td>Unit</td><td colspan="2">Date</td><td colspan="2">Time</td><td colspan="3">Page number</td></tr>
<tr><td>5</td><td colspan="2">WC: 25/11/18</td><td colspan="2">45 minutes</td><td colspan="3">123 - 129</td></tr>
<tr><td colspan="3">Equipment required:</td><td colspan="5">Learning objectives</td></tr>
<tr><td colspan="3">Python book</td><td colspan="5">5.1 Apply skills from previous units to produce two programs.
5.2 Produce programs that can perform different calculations from user inputs.
5.3 Employ the use of comments meaningfully in your code.</td></tr>
<tr><td colspan="3">Keywords</td><td colspan="5">user interface, programs, variables, data types, comments, loops, operators</td></tr>
<tr><td colspan="8">Starter/Introduction activity</td></tr>
<tr><td>Time
10 minutes
app</td><td colspan="7">Clarify position of the project task so far. All students should have completed up to and including Activity 8.</td></tr>
<tr><td colspan="8">Main</td></tr>
<tr><td>Time</td><td colspan="7">Students will start writing the code in the book. The teacher can support students with this but must allow the students to complete the bulk of the code on their own.

Solution for Activity 9:
#Prints a title heading for the program
print("###***This is the grades calculator***###")

#ask student for their name
studentName = input("Enter your name")

#ask student for grade of subject 1
subject1 = input("Enter your grade for DT")
subject1 = float(subject1)

#ask student for grade of subject 2
subject2 = input("Enter your grade for Mathematics")
subject2 = float(subject2)

#ask student for grade of subject 3
subject3 = input("Enter your grade for Biology")
subject3 = float(subject3)
#print message to the user</td></tr>
</table>

	print("***Hello", studentName, "***") #calculate grades average averageGrade = (subject1 + subject2 + subject3) / 3 print("***Your average grade is", averageGrade, "***") #calculate highest grade if(subject1 >= subject2) & (subject1 >= subject3) : highest = subject1 elif(subject2 >= subject1) & (subject2 >= subject3): highest = subject2 else: highest = subject3 print("***Highest grade is", highest, "***") #calculate lowest grade if(subject1 <= subject2) & (subject1 <= subject3): lowest = subject1 elif(subject2 <= subject1) & (subject2 <= subject3): lowest = subject2 else: lowest = subject3 print("***Lowest grade is", lowest, "***")
Plenary	
Time	Complete any outstanding work for homework.
Assessment focus	To start writing code for Activity 9
Learning Curve	The entire course plus specific instructional videos are available on Learning Curve via this link (USE bit.ly): https://learningcurve.moe.gov.ae/en/default/Course#/view/2280/false/2335/CourseMap/Session/View/78c627fd-d286-4b10-9595-62d32de23aef The access code is: ...

<table>
<tr><td>Grade</td><td>7</td><td>Subject</td><td>DT</td><td>Lesson number</td><td>1</td><td>Week number</td><td>12</td></tr>
<tr><td>Unit</td><td colspan="2">Date</td><td colspan="2">Time</td><td colspan="3">Page number</td></tr>
<tr><td>5</td><td colspan="2">WC: 2/12/18</td><td colspan="2">45 minutes</td><td colspan="3">123 - 129</td></tr>
<tr><td colspan="3">Equipment required:</td><td colspan="5">Learning objectives</td></tr>
<tr><td colspan="3">Python book</td><td colspan="5">5.1 Apply skills from previous units to produce two programs.
5.2 Produce programs that can perform different calculations from user inputs.
5.3 Employ the use of comments meaningfully in your code.</td></tr>
<tr><td colspan="3">Keywords</td><td colspan="5">user interface, programs, variables, data types, comments, loops, operators</td></tr>
<tr><td colspan="8">Starter/Introduction activity</td></tr>
<tr><td>Time
10 minutes
app</td><td colspan="7">Clarify position of the project task so far. All students have started writing the code for Activity 9.</td></tr>
<tr><td colspan="8">Main</td></tr>
<tr><td>Time</td><td colspan="7">Students finish writing the code in the book. The teacher should explain the last parts of the code where students are comparing the highest and lowest values for the highest and lowest grades.

Solution for Activity 9:
#Prints a title heading for the program
print("###***This is the grades calculator***###")

#ask student for their name
studentName = input("Enter your name")

#ask student for grade of subject 1
subject1 = input("Enter your grade for DT")
subject1 = float(subject1)

#ask student for grade of subject 2
subject2 = input("Enter your grade for Mathematics")
subject2 = float(subject2)

#ask student for grade of subject 3
subject3 = input("Enter your grade for Biology")
subject3 = float(subject3)
#print message to the user</td></tr>
</table>

```
print("***Hello", studentName, "***")

#calculate grades average
averageGrade = (subject1 + subject2 + subject3) / 3
print("***Your average grade is", averageGrade, "***")

#calculate highest grade
if(subject1 >= subject2) & (subject1 >= subject3) :
    highest = subject1
elif(subject2 >= subject1) & (subject2 >= subject3):
    highest = subject2
else:
    highest = subject3

print("***Highest grade is", highest, "***")

#calculate lowest grade
if(subject1 <= subject2) & (subject1 <= subject3):
    lowest = subject1
elif(subject2 <= subject1) & (subject2 <= subject3):
    lowest = subject2
else:
    lowest = subject3

print("***Lowest grade is", lowest, "***")
```

Plenary	
Time	Complete any outstanding work for homework.
Assessment focus	To finish writing code for Activity 9
Learning Curve	The entire course plus specific instructional videos are available on Learning Curve via this link (USE bit.ly): https://learningcurve.moe.gov.ae/en/default/Course#/view/2280/false/2335/CourseMap/Session/View/78c627fd-d286-4b10-9595-62d32de23aef The access code is: ...

Grade	7	Subject	DT	Lesson number	2	Week number	12
Unit	Date			Time		Page number	
5	WC: 2/12/18			45 minutes		123 - 129	
Equipment required:				Learning objectives			
Python book computer with PyCharm				5.1 Apply skills from previous units to produce **two programs**. 5.2 Produce programs that can perform **different calculations** from user **inputs**. 5.3 Employ the use of **comments** meaningfully in your code.			
Keywords				user interface, programs, variables, data types, comments, loops, operators			
Starter/Introduction activity							
Time 10 minutes app	Clarify position of the project task so far. Students type their code into PyCharm today.						
Main							
Time	Students type their code into PyCharm ready for testing next lesson. Solution for Activity 9: #Prints a title heading for the program print("###***This is the grades calculator***###") #ask student for their name studentName = input("Enter your name") #ask student for grade of subject 1 subject1 = input("Enter your grade for DT") subject1 = float(subject1) #ask student for grade of subject 2 subject2 = input("Enter your grade for Mathematics") subject2 = float(subject2) #ask student for grade of subject 3 subject3 = input("Enter your grade for Biology") subject3 = float(subject3) #print message to the user						

	print("***Hello", studentName, "***") #calculate grades average averageGrade = (subject1 + subject2 + subject3) / 3 print("***Your average grade is", averageGrade, "***") #calculate highest grade if(subject1 >= subject2) & (subject1 >= subject3) : highest = subject1 elif(subject2 >= subject1) & (subject2 >= subject3): highest = subject2 else: highest = subject3 print("***Highest grade is", highest, "***") #calculate lowest grade if(subject1 <= subject2) & (subject1 <= subject3): lowest = subject1 elif(subject2 <= subject1) & (subject2 <= subject3): lowest = subject2 else: lowest = subject3 print("***Lowest grade is", lowest, "***")
Plenary	
Time	Complete any outstanding work for homework.
Assessment focus	To type code into PyCharm for activity 9.
Learning Curve	The entire course plus specific instructional videos are available on Learning Curve via this link (USE bit.ly): https://learningcurve.moe.gov.ae/en/default/Course#/view/2280/false/2335/CourseMap/Session/View/78c627fd-d286-4b10-9595-62d32de23aef The access code is: ...

Grade	7	Subject	DT	Lesson number	3	Week number	12
Unit	Date			Time		Page number	
5	WC: 2/12/18			45 minutes		128 - 130	
Equipment required:				Learning objectives			
Python book computer with PyCharm				5.1 Apply skills from previous units to produce **two programs**. 5.2 Produce programs that can perform **different calculations** from user **inputs**. 5.3 Employ the use of **comments** meaningfully in your code.			
Keywords				user interface, programs, variables, data types, comments, loops, operators			
Starter/Introduction activity							
Time 10 minutes app	Clarify position of the project task so far. Students will test their code today.						
Main							
Time	Students run their code from last lesson and test it against the given test table. Students get 1 mark for each test completed. **Note**: As long as students have identified that they need to correct the code, they will still get a mark even if they have tested the code and the result is not correct. The teacher marks the project task against the evaluation on page 129. Students evaluate their work using the evaluation table on page 130. 1 mark for each section evaluated.						
Plenary							
Time	Complete any outstanding work for homework.						
Assessment focus	To test code from Activity 9 and complete the evaluation						
Learning Curve	The entire course plus specific instructional videos are available on Learning Curve via this link (USE bit.ly): https://learningcurve.moe.gov.ae/en/default/Course#/view/2280/false/2335/CourseMap/Session/View/78c627fd-d286-4b10-9595-62d32de23aef The access code is: …						