<table>
<tr><td>Grade</td><td>6</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="2">Date</td><td colspan="2">Time</td><td colspan="2">Page number</td></tr>
<tr><td>1</td><td colspan="2">WC: 02/09/18</td><td colspan="2">45 minutes</td><td colspan="2">14-19</td></tr>
<tr><td colspan="3">Equipment required:</td><td colspan="5">Learning objectives</td></tr>
<tr><td colspan="3">student book</td><td colspan="5">1.1 Identify types of programming.</td></tr>
<tr><td colspan="3">Keywords</td><td colspan="5">programming, games, graphical programming, text-based programming</td></tr>
<tr><td colspan="8">Starter/Introduction activity</td></tr>
<tr><td>Time
10
minutes</td><td colspan="7">Start by going through the unit 1 overview, keywords and learning outcomes for the unit. Opportunity for class discussion and Q&A on 'what is programming' and 'what are games'.</td></tr>
<tr><td colspan="8">Main</td></tr>
<tr><td>Time
30
minutes</td><td colspan="7">Activity 1
Complete activity 1 to introduce some famous games from past and present.

The activity is about matching the picture with the name of the game. This activity can be discussed in pairs or small groups. Give students 10 minutes to complete this activity. Once complete go through the answers. See answers below;
<table><tr><td>Picture 1</td><td>Final Fantasy</td></tr><tr><td>Picture 2</td><td>Super Mario</td></tr><tr><td>Picture 3</td><td>Tekken</td></tr><tr><td>Picture 4</td><td>Sonic the Hedgehog</td></tr><tr><td>Picture 5</td><td>Zelda</td></tr><tr><td>Picture 6</td><td>Angry Birds</td></tr><tr><td>Picture 7</td><td>Pong</td></tr></table>
Move on to explain games programming and the two types of programming (graphical programming and text-based programming), show examples where possible.

Activity 2
Complete activity 2 to identify types of programming.

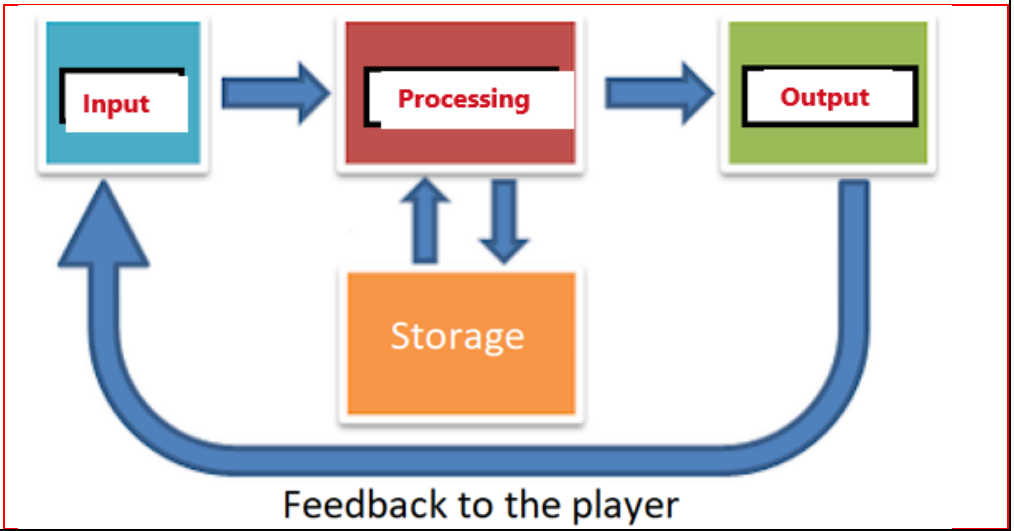
The activity is about matching the picture with the type of programming. This activity can be discussed in pairs or small groups. Give students 10 minutes to complete this activity. Once complete go through the answers. See answers below:
<table><tr><td>Picture 1</td><td>Graphical (Kodu)</td></tr></table></td></tr>
</table>

	Picture 2	Text-based (Python)
	Picture 3	Graphical (Scratch)
	Picture 4	Graphical (Edware).
Plenary		
Time 5 minutes	Summarise lesson, recapping the learning objective and the key vocabulary used throughout	
Assessment focus	Students should be able to identify graphical and text-based programming and popular computer games from past and present.	
Learning Curve	PD training sessions with information on the theory of games development and practical instructions to use Microsoft Kodu will be available on learning Curve via this link: https://bit.ly/2m3sDOm The access code is: CdScISPHcUaRPaZSe_9tHg	

<table>
<tr><td>Grade</td><td>6</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">WC: 02/09/18</td><td colspan="2">45 minutes</td><td colspan="2">20-23</td></tr>
<tr><td colspan="3">Equipment required:</td><td colspan="5"><u>Learning objectives</u></td></tr>
<tr><td colspan="3">student book</td><td colspan="5">1.2 Define key programming concepts.</td></tr>
<tr><td colspan="3">Keywords</td><td colspan="5">programming concepts, input, processing, output</td></tr>
<tr><td colspan="8">Starter/Introduction activity</td></tr>
<tr><td>Time
10
minutes</td><td colspan="7">Start by introducing key programming concepts. Input, processing and output, opportunity for Q&A.

Then relate key concepts to games by asking students to think about input, processing and outputs from a computer game they played before. This is an opportunity for class or group discussion.</td></tr>
<tr><td colspan="8">Main</td></tr>
<tr><td>Time
30
minutes</td><td colspan="7">Activity 3
Complete activity 3 to check understanding of inputs, processing and outputs in computer games. Take some answers from the group to share with the class.

The activity is about relating a game they have played before with inputs, processing and outputs. This activity can be discussed in pairs or small groups. Give students 20 minutes to complete this activity. Once complete take some answers from the class. Example answers from the student book below:
<table><tr><td>1. Can you explain an example of an input from that computer game?</td><td>(e.g. pressing the left arrow key)</td></tr><tr><td>2. Can you explain an example of processing from that computer game?</td><td>(e.g. If the left arrow key is pressed, you move the character left and collect rings.)</td></tr><tr><td>3. Can you explain an example of an output from that computer game?</td><td>(e.g. The character moves left on the screen. The score increases when rings are collected)</td></tr></table>
Move on and explain that we can use a diagram to visualise how software or games work.</td></tr>
</table>

	Activity 4 Complete activity 4 to create a **diagram** to show how software or games work. The activity is about using the words provided to fill in the blanks to complete an IPO diagram. This activity can be discussed in pairs or small groups. Give students 10 minutes to complete this activity. Once complete talk students through the steps in the process. See answer below; 
Plenary	
Time 5 minutes	Summarise lesson, recapping the learning objective and the key vocabulary used throughout.
<u>Assessment focus</u>	Students should be able to identify inputs, processing and outputs from a game they have played before and be able to create an IPO diagram.
<u>Learning Curve</u>	PD training sessions with information on the theory of games development and practical instructions to use Microsoft Kodu will be available on learning Curve via this link: https://bit.ly/2m3sDOm The access code is: CdScISPHcUaRPaZSe_9tHg

<table>
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<tr><td>Unit</td><td colspan="2">Date</td><td colspan="2">Time</td><td colspan="2">Page number</td></tr>
<tr><td>1</td><td colspan="2">WC: 02/09/18</td><td colspan="2">45 minutes</td><td colspan="2">24-29</td></tr>
<tr><td colspan="3">Equipment required:</td><td colspan="5">Learning objectives</td></tr>
<tr><td colspan="3">student book</td><td colspan="5">1.3 Explain types of games and platforms.</td></tr>
<tr><td colspan="3">Keywords</td><td colspan="5">game types (genre's), action-adventure, RPG, platform games, 3D games, simulation, sports</td></tr>
<tr><td colspan="8">Starter/Introduction activity</td></tr>
<tr><td>Time
10 minutes</td><td colspan="7">Start by going through the early history of computer games. This could be used as a reading comprehension activity followed by class discussion or Q&A.</td></tr>
<tr><td colspan="8">Main</td></tr>
<tr><td>Time
30 minutes</td><td colspan="7">Activity 5
Using the information from the early history of computer games, complete activity 5. Teachers could help less-able students by identifying the blanks in the information provided.

The activity is about filling in the blanks to create a summary of the early history of computer games. This activity can be discussed in pairs or small groups. Give students 15 minutes to complete this activity. Once complete go through the answers. See answers below;
<table><tr><td>Blank 1</td><td>OXO</td></tr><tr><td>Blank 2</td><td>computer</td></tr><tr><td>Blank 3</td><td>The father of video games</td></tr><tr><td>Blank 4</td><td>Pong</td></tr><tr><td>Blank 5</td><td>Atari 2600</td></tr><tr><td>Blank 6</td><td>game developer</td></tr></table>
Move on and go through types of games, opportunity for practical activity acting out 2-dimensional and 3-dimensional movement in games.

Activity 6
Complete activity 6 to check student's understanding of types of games.

The activity is about matching pictures and descriptions to types of game (genre). This activity can be discussed in pairs or small groups.</td></tr>
</table>

<table>
<tr><td></td><td>Give students 15 minutes to complete this activity. Once complete go through the answers. See answers below:
<table>
<tr><td>Picture/Description 1</td><td>simulation</td></tr>
<tr><td>Picture/Description 2</td><td>3D or (three dimensional)</td></tr>
<tr><td>Picture/Description 3</td><td>sports</td></tr>
<tr><td>Picture/Description 4</td><td>RPG or (Role Playing game)</td></tr>
<tr><td>Picture/Description 5</td><td>platform</td></tr>
</table></td></tr>
<tr><td colspan="2">Plenary</td></tr>
<tr><td>Time
5
minutes</td><td>Summarise lesson, recapping the learning objective and the key vocabulary used throughout.</td></tr>
<tr><td><u>Assessment focus</u></td><td>Students should be able to summarise the early history of computer games and identify the type (genre) of computer games.</td></tr>
<tr><td><u>Learning Curve</u></td><td>PD training sessions with information on the theory of games development and practical instructions to use Microsoft Kodu will be available on learning Curve via this link: https://bit.ly/2m3sDOm

The access code is: CdScISPHcUaRPaZSe_9tHg</td></tr>
</table>

<table>
<tr><td>Grade</td><td>6</td><td>Subject</td><td>DT</td><td>Lesson number</td><td>1</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">WC: 09/09/18</td><td colspan="2">45 minutes</td><td colspan="2">30-33</td></tr>
<tr><td colspan="3">Equipment required:</td><td colspan="5">Learning objectives</td></tr>
<tr><td colspan="3">student book</td><td colspan="5">1.3 Explain types of games and platforms.</td></tr>
<tr><td colspan="3">Keywords</td><td colspan="5">game platforms, arcade systems, home consoles, personal computer, laptop, mobile phone, tablet</td></tr>
<tr><td colspan="8">Starter/Introduction activity</td></tr>
<tr><td>Time
10 minutes</td><td colspan="7">Start by introducing game platforms. This is an opportunity to question students to gauge existing knowledge about game platforms.</td></tr>
<tr><td colspan="8">Main</td></tr>
<tr><td>Time
30 minutes</td><td colspan="7">
Activity 7
Using the information about game platforms to test students existing knowledge; complete activity 7. Differentiate by getting more-able students to identify 2 or 3 examples for each platform.

The activity is about identifying examples for each type of gaming platform. This activity can be discussed in pairs or small groups. Give students 10 minutes to complete this activity. Once complete take some answers from the class. Some example answers below:
<table>
<tr><td>Home Console</td><td>PlayStation 4 or Xbox One X</td></tr>
<tr><td>Laptop</td><td>MacBook or Microsoft Surface</td></tr>
<tr><td>Mobile Phone</td><td>iPhone or Samsung S8</td></tr>
<tr><td>Tablet</td><td>iPad or Galaxy Tab</td></tr>
</table>

Move on to recent history of computer games. This could be used as a reading comprehension activity followed by class discussion or Q&A.

Activity 8
Complete activity 8 to check student ability to identify game platforms.

The activity is about identifying 10 game platforms using the information on the recent history of computer games. This activity can be discussed in pairs or small groups. Give students 10 minutes to complete this activity. Once complete go through the answers. See answers below:
<table>
<tr><td>Personal Computer</td></tr>
</table>
</td></tr>
</table>

Atari Video System
Xbox 360
PlayStation 3
Nintendo Wii
Social Media
Mobile Phones
PlayStation 4
Xbox One X
Nintendo Switch

Activity 9

Complete activity 9 to check student's ability to identify game platforms. Teachers could help less-able students by identifying the 7 platforms that must be found in the grid.

This activity is about finding 5 gaming platforms in the grid provided using the list made in activity 8. This activity can be done in pairs. Give students 10 minutes to complete this activity. Once complete go through the answers. See answers below:

NintendoWii
SocialMedia
MobilePhones
PlayStation4
XboxOneX

Plenary	
Time 5 minutes	Summarise lesson, recapping the learning objective and the key vocabulary used throughout.
Assessment focus	Students should be able to summarise the early history of computer games and identify the type (genre) of computer games.
Learning Curve	PD training sessions with information on the theory of games development and practical instructions to use Microsoft Kodu will be available on learning Curve via this link: https://bit.ly/2m3sDOm The access code is: CdScISPHcUaRPaZSe_9tHg

Grade	6	Subject	DT	Lesson number	2	Week number	2

Unit	Date	Time	Page number
1	WC: 09/09/18	45 minutes	34-39

Equipment required:	Learning objectives
student book computer Microsoft Kodu	1.4 Recognise Kodu and its interface.
Keywords	Microsoft Kodu, load, save, new, zoom feature, tool palette, home menu, move camera, orbit camera

Starter/Introduction activity	
Time 15 minutes	Start by introducing **Microsoft Kodu** and explain the key commands; **zoom feature**, **tool palette**, **home menu**, **move camera** and **orbit camera**. This could be done as a class demonstration by the teacher using pages 32-37 in the student book.

Main	
Time 25 minutes	**The Kodu interface** Students should open Kodu on their computers and practice creating, **saving** and **loading** a world from the **home menu**, using the **zoom feature**, **move camera tool** and **orbit camera feature** (pages 32-37 in the student book). Offer extra help and support to students where required. Students should spend at least 5 minutes practicing each technique: • Saving and loading worlds from the home menu • Zoom feature • Move camera tool • Orbit camera feature There is an opportunity to introduce **appropriate file naming** here. This could be done as a class discussion, students should understand how and why this is done. Students could then save a Kodu world using their name and a description eg. "Tom Smith First World".

Plenary	
Time 5 minutes	Summarise lesson, recapping the learning objective and the key vocabulary used throughout.

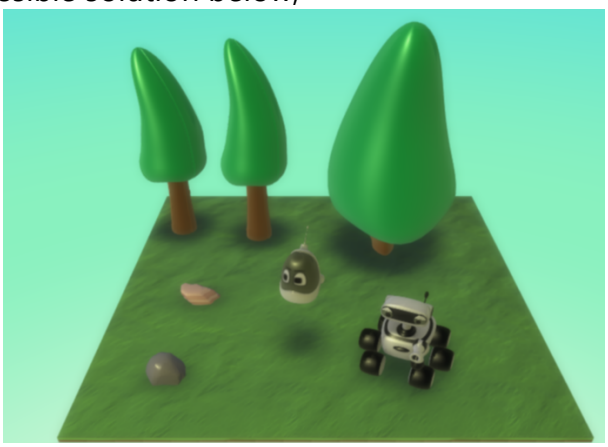
Assessment Focus	In Kodu students should be able to load and save worlds, use the zoom feature, move camera tool and orbit camera.
Learning Curve	PD training sessions with information on the theory of games development and practical instructions to use Microsoft Kodu will be available on learning Curve via this link: https://bit.ly/2m3sDOm The access code is: CdScISPHcUaRPaZSe_9tHg

<table>
<tr><td>Grade</td><td>6</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">WC: 09/09/18</td><td colspan="2">45 minutes</td><td colspan="2">40-44</td></tr>
<tr><td colspan="3">Equipment required:</td><td colspan="5"><u>Learning objectives</u></td></tr>
<tr><td colspan="3">student book
computer
Microsoft Kodu</td><td colspan="5">1.4 Recognise Kodu and its interface.</td></tr>
<tr><td colspan="3">Keywords</td><td colspan="5">object menu, objects, characters, help</td></tr>
<tr><td colspan="8">Starter/Introduction activity</td></tr>
<tr><td>Time
10 minutes</td><td colspan="7">Start by reminding students about Kodu including the key commands; zoom feature, tool palette, home menu, move camera and orbit camera.</td></tr>
<tr><td colspan="8">Main</td></tr>
<tr><td>Time
30 minutes</td><td colspan="7">Introduce the object menu. Like the previous lesson the object menu and adding a character could be shown first with a class demonstration.

Object menu and adding a character step by step

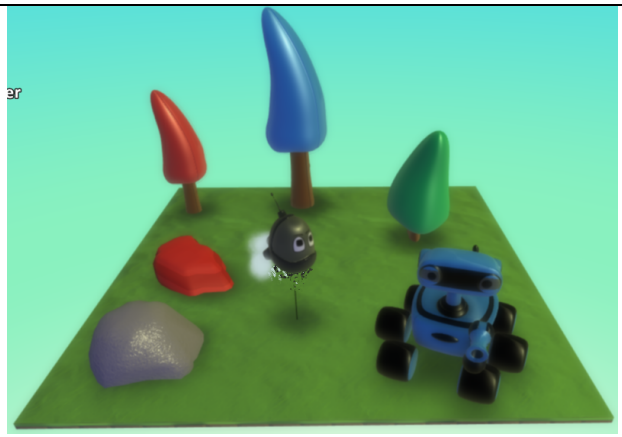
Direct students to open Kodu and follow the object menu and adding a character step by step instructions in the student book on pages 38-42. Offer extra help and support to students where required.

As students are working highlight the help available to them in Kodu on characters and objects by pressing the Y key.

Students should have now created a world with 5 objects and 2 characters. Possible solution below;
 
Remind students about appropriate file naming and make sure students save their worlds using their name and a description, e.g. "Tom Smith 5 Objects".</td></tr>
</table>

Plenary	
Time 5 minutes	Summarise lesson, recapping the learning objective and the key vocabulary used throughout.
Assessment focus	In Kodu students should have created a world with 5 objects, 2 characters and saved the world with an appropriate file name.
Learning Curve	PD training sessions with information on the theory of games development and practical instructions to use Microsoft Kodu will be available on learning Curve via this link: https://bit.ly/2m3sDOm The access code is: CdScISPHcUaRPaZSe_9tHg

Grade	6	Subject	DT	Lesson number	1	Week number	3
Unit		**Date**		**Time**		**Page number**	
1		WC: 16/09/18		45 minutes		45-50	
Equipment required:				**Learning objectives**			
student book computer Microsoft Kodu				1.4 Recognise Kodu and its interface.			
Keywords				move objects, change objects, colour, rotation, size			
Starter/Introduction activity							
Time 10 minutes		Start by prompting students to open the world they created in the previous lesson. Their worlds should have sensible names eg. "Tom Smith 5 Objects". Assess progress with objects and characters, students should have 5 objects and 2 characters in their world. Allow some extra time to achieve this if required.					
Main							
Time 30 minutes		Introduce **moving** and **changing objects** and **characters** again this could be done with a class demonstration of move, change **colour**, change **size** and change **rotation**. **Moving and changing objects and characters step by step** Have students use the world they created with 5 objects and 2 characters then follow the **moving** and **changing objects** and **characters** step-by-step instructions on pages 43-48 in the student book. Offer extra help and support to students where required. More able-students can add and change additional objects and characters. Possible solution below:					

	 There is a guide on saving on pages 47-48 of the student book, but remind students to save their work for future reference. Always use appropriate file naming.
Plenary	
Time 5 minutes	Summarise lesson, recapping the learning objective and the key vocabulary used throughout.
Assessment focus	In Kodu students should have opened a world with 5 objects, 2 characters and changed colour, size and rotation of the objects and characters.
Learning Curve	PD training sessions with information on the theory of games development and practical instructions to use Microsoft Kodu will be available on learning Curve via this link: https://bit.ly/2m3sDOm The access code is: CdScISPHcUaRPaZSe_9tHg

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<tr><td>Unit</td><td colspan="2">Date</td><td colspan="2">Time</td><td colspan="2">Page number</td></tr>
<tr><td>1/2</td><td colspan="2">WC: 16/09/18</td><td colspan="2">45 minutes</td><td colspan="2">51-58</td></tr>
<tr><td colspan="3">Equipment required:</td><td colspan="5">Learning objectives</td></tr>
<tr><td colspan="3">student book</td><td colspan="5">1.1 Identify types of programming.
1.2 Define key programming concepts.
1.3 Explain types of games and platforms.
1.4 Recognise Kodu and its interface.
2.1 Understand planning and game development.</td></tr>
<tr><td colspan="3">Keywords</td><td colspan="5">planning, goal, decomposition, time management, delegation</td></tr>
<tr><td colspan="8">Starter/Introduction activity</td></tr>
<tr><td>Time
15
minutes</td><td colspan="7">Unit 1 pop quiz
Start by briefly recapping the key points from Unit 1 then direct students to complete the Unit 1 pop quiz and evaluation on pages 52-53 in the student book.

See answers for marking below:
<table><tr><td>Question 1</td><td>B. Graphical and text based</td></tr><tr><td>Question 2</td><td>A. Inputs, processing and outputs</td></tr><tr><td>Question 3</td><td>B. The character moves left on the screen</td></tr><tr><td>Question 4</td><td>A. Simulator, role playing games (RPG), platform games</td></tr><tr><td>Question 5</td><td>C. A graphical programming language to make games</td></tr></table></td></tr>
<tr><td colspan="8">Main</td></tr>
<tr><td>Time
25
minutes</td><td colspan="7">Move on and go through the unit 2 overview, keywords and learning outcomes for the unit. Introduce planning on page 56 of the student book, emphasise the importance of planning, especially for larger projects completed by teams of people. Opportunity for Q&A to assess student understanding.

Activity 1
Complete activity 1 to test student's understanding of planning.

This activity is about filling in the blanks to create a description for each part of the planning process. This activity can be discussed in pairs or small groups. Give students 10 minutes to complete this activity. Once complete go through the answers. See answers below:</td></tr>
</table>

Blank 1	goal
Blank 2	smaller and/or easier to do
Blank 3	management
Blank 4	delegation

Plenary	
Time 5 minutes	Summarise lesson, recapping the learning objective and the key vocabulary used throughout.
Assessment focus	Students should have completed the unit 1 pop quiz using prior knowledge and be able to explain the stages in the planning process.
Learning Curve	PD training sessions with information on the theory of games development and practical instructions to use Microsoft Kodu will be available on learning Curve via this link: https://bit.ly/2m3sDOm The access code is: CdScISPHcUaRPaZSe_9tHg

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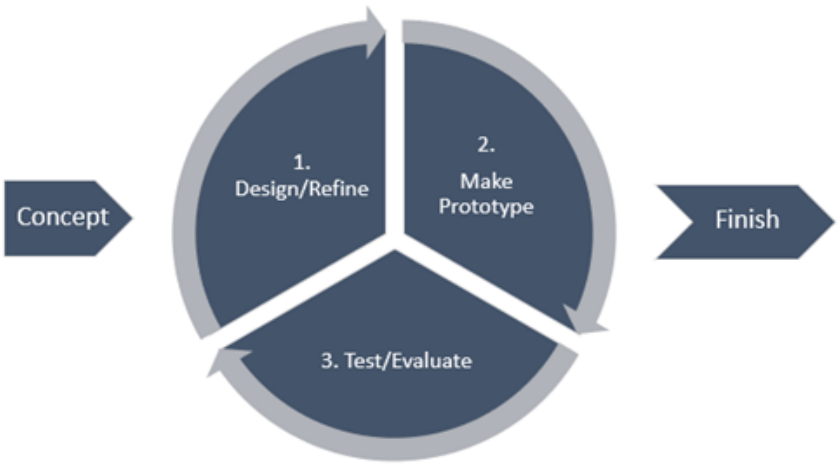
<tr><td>Unit</td><td colspan="2">Date</td><td colspan="2">Time</td><td colspan="2">Page number</td></tr>
<tr><td>2</td><td colspan="2">WC: 16/09/18</td><td colspan="2">45 minutes</td><td colspan="2">59-61</td></tr>
<tr><td colspan="3">Equipment Required:</td><td colspan="5">Learning objectives</td></tr>
<tr><td colspan="3">student book</td><td colspan="5">2.1 Understand planning and game development.</td></tr>
<tr><td colspan="3">Keywords</td><td colspan="5">game development, concept, design, prototyping, testing</td></tr>
<tr><td colspan="8">Starter/Introduction activity</td></tr>
<tr><td>Time
10 minutes</td><td colspan="7">Start by introducing games development including the four main steps; concept, design, prototyping and testing.</td></tr>
<tr><td colspan="8">Main</td></tr>
<tr><td>Time
30 minutes</td><td colspan="7">Activity 2
Complete activity 2 using the information on games development and descriptions provided to help students remember the four parts of the games (or software) development process.

This activity is about unscrambling the words to identify each part of the development process. This activity can be discussed in pairs or small groups. Give students 15 minutes to complete this activity. Once complete go through the answers. See answers below:
<table><tr><td>Word 1</td><td>Testing</td></tr><tr><td>Word 2</td><td>Design</td></tr><tr><td>Word 3</td><td>Prototype</td></tr><tr><td>Word 4</td><td>Concept</td></tr></table>
Move onto page 61 of the student book, explaining that the process for developing a game or other software can also be shown using a diagram. There is an opportunity for class discussion before students use the words provided to complete the diagram.

Activity 3

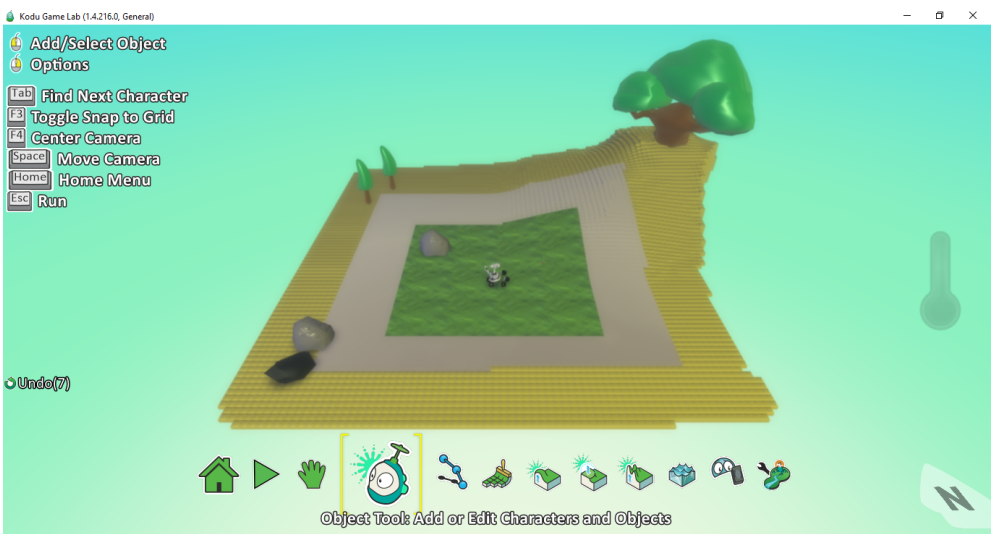
Give students 10 minutes to complete this activity. Once complete use the diagram to explain the process, e.g. several prototypes tested, refined and evaluated during development. See answer below:</td></tr>
</table>

	
Plenary	
Time 5 minutes	Summarise lesson, recapping the learning objective and the key vocabulary used throughout.
Assessment focus	Students should know the parts of the game development process and should have created a diagram to show how the process works.
Learning Curve	PD training sessions with information on the theory of games development and practical instructions to use Microsoft Kodu will be available on learning Curve via this link: https://bit.ly/2m3sDOm The access code is: CdScISPHcUaRPaZSe_9tHg

Grade	6	Subject	DT	Lesson number	1	Week number	4
Unit		Date		Time		Page number	
2		WC: 23/09/18		45 minutes		62-63	
Equipment required:				Learning objectives			
student book				2.2 Recognise graphical aspects of game design.			
Keywords				graphical, game design, storyboarding			
Starter/Introduction activity							
Time 10 minutes	Start by explaining that **games design** has two parts; **graphical** and **logical**. In graphical design we focus on how the game world, objects and characters will look (size, shape, texture etc.) In logical design we focus on how the blocks or code (programming) will make the game work (e.g. react to player input etc.).						
Main							
Time 30 minutes	Introduce **storyboarding** as a **graphical design technique** using page 62 of the student book. Before students attempt activity 3 the teacher should prompt students to make a list of 10 computer games they enjoy which could be followed by a class discussion and making a class list of computer games. Give students 15 minutes to complete this task. Move onto activity 3 and direct students to create a **storyboard** for a game from the list. Challenge students to produce a better storyboard than the example shown on page 62 of the student book. **Activity 3** Complete activity 3 by having students create a **storyboard** for a computer game they played before. This activity is about developing **sketching** (graphical) skills and a chance for students to demonstrate their understanding of how storyboards work. Give students 15 minutes to complete this activity. Once complete show and explain some good student storyboards to the class. Every student will storyboard a different game, so some general answer guidance is included below:						

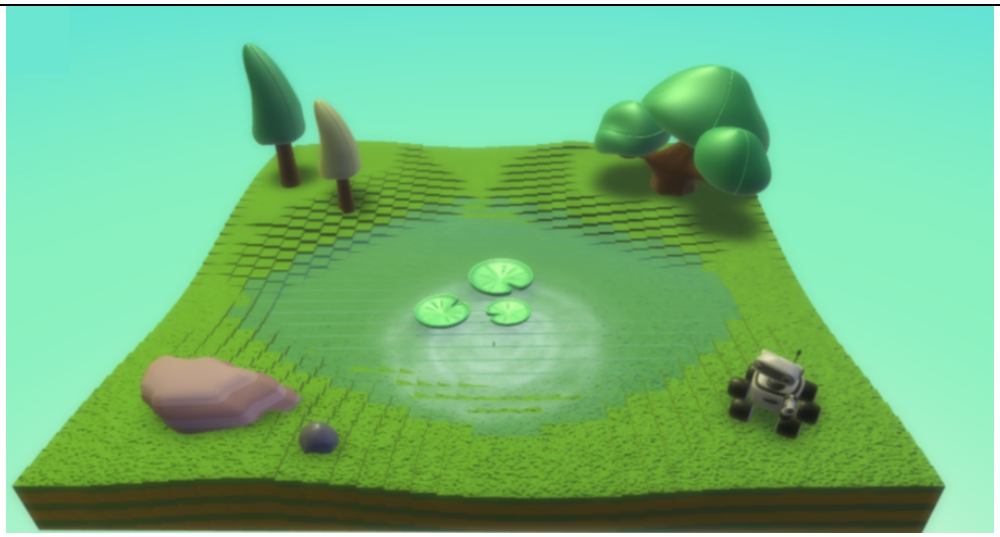
	Start	Middle	End
	Drawing (sketch) showing start of the game	Drawing (sketch) showing middle of the game.	Drawing (sketch) showing end of the game.
	Description: Written explanation of what happens at the start of the game.	Description: Written explanation of what happens during the game.	Description: Written explanation of what happens at the end of the game (e.g. how to win).

Plenary	
Time 5 minutes	Summarise lesson, recapping the learning objective and the key vocabulary used throughout.
Assessment focus	Students should understand there are 2 parts to design; graphical and logical. Students should be able to understand and create a storyboard.
Learning Curve	PD training sessions with information on the theory of games development and practical instructions to use Microsoft Kodu will be available on learning Curve via this link: https://bit.ly/2m3sDOm The access code is: CdScISPHcUaRPaZSe_9tHg

Grade	6	Subject	DT	Lesson number	2	Week number	4
Unit		**Date**		**Time**		**Page number**	
2		WC: 23/09/18		45 minutes		64-71	
Equipment required:				**Learning objectives**			
student book computer Microsoft Kodu				2.2 Recognise graphical aspects of game design. 2.4 Practise design and programming skills in a series of activities.			
Keywords				terrain, ground brush, up/down tool, flatten tool			
Starter/Introduction activity							
Time 10 minutes	Start by reminding students about object and characters in Kodu, move on to introduce terrain development in Kodu and cover the ground brush, material, up/down tool and smooth/flatten tool. This introduction could be done as a class demonstration with the teacher using pages 64-71 in the student book.						
Main							
Time 30 minutes	**How to create and change terrain, step by step** Direct students to open Kodu and follow the **create** and **change terrain** step-by-step instructions in the student book on pages 64-71. Offer extra help and support to students where required. Students should have now created a world using 3 terrain **materials**, **hill terrain**, **characters** and **objects**. The world they create should have similar features to the example below: 						

	Make sure students save their Kodu World, remind students about appropriate file naming using their name and a description, e.g. "Tom Smith Create Terrain".
Plenary	
Time 5 minutes	Summarise lesson, recapping the learning objective and the key vocabulary used throughout.
Assessment focus	Students should have used terrain tools to create a world with 3 terrain materials and hill terrain.
Learning Curve	PD training sessions with information on the theory of games development and practical instructions to use Microsoft Kodu will be available on learning Curve via this link: https://bit.ly/2m3sDOm The access code is: CdScISPHcUaRPaZSe_9tHg

Grade	6	Subject	DT	Lesson number	3	Week number	4
Unit		**Date**		**Time**		**Page number**	
2		WC: 23/09/18		45 minutes		64-72	
Equipment required:				**Learning objectives**			
student book computer Microsoft Kodu				2.2 Recognise graphical aspects of game design. 2.4 Practise design and programming skills in a series of activities.			
Keywords				terrain, ground brush, up/down tool, flatten tool, water tool			
Starter/Introduction activity							
Time 15 minutes	Start by prompting students to open the world they created in the previous lesson. Their worlds should have sensible names e.g. "Tom Smith Create Terrain". Assess progress with terrain and objects. Students should have 3 types of terrain material, hill terrain, rocks, trees and a character. Allow some extra time to achieve this if required and ensure students save their progress.						
Main							
Time 25 minutes	Move onto activity 5 and challenge students to re-create the **terrain** shown in the activity using a new world in Kodu. Teacher may need to demonstrate using the **water tool** prior to this activity. **Activity 5** Direct students to open Kodu and refer to the **terrain** shown in the activity on page 72 of the student book. This is an opportunity for students to demonstrate the skills they have developed in Kodu. Offer extra help and support to students where required. Their world should have similar features to the world in the student book as shown below:						

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

Objects and tools required to create this terrain.

Objects:
• 1 Rover character
• 2 rocks
• 3 trees
• 1 lily pad
Tools:
• Ground brush
• Up/down tool
• Flatten tool
• Water tool

Make sure students save their Kodu world, again use appropriate file naming e.g. "Tom Smith Activity 5".</td></tr>
<tr><td colspan="2">Plenary</td></tr>
<tr><td>Time
5
minutes</td><td>Summarise lesson, recapping the learning objective and the key vocabulary used throughout.</td></tr>
<tr><td><u>Assessment focus</u></td><td>Students should be able to select the objects and tools required to re-create the example terrain in the student book.</td></tr>
<tr><td><u>Learning Curve</u></td><td>PD training sessions with information on the theory of games development and practical instructions to use Microsoft Kodu will be available on learning Curve via this link:
https://bit.ly/2m3sDOm</td></tr>
</table>

	The access code is: CdScISPHcUaRPaZSe_9tHg

Grade	6	Subject	DT	Lesson number	1	Week number	5
Unit		**Date**		**Time**		**Page number**	
2		WC: 30/09/18		45 minutes		72	
Equipment required:				**Learning objectives**			
student book computer Microsoft Kodu				2.2 Recognise graphical aspects of game design. 2.4 Practise design and programming skills in a series of activities.			
Keywords				graphical, game design, terrain, objects			
Starter/Introduction activity							
Time 10 minutes	Start by prompting students to open the world they created in the previous lesson. Their worlds should have sensible names e.g. "Tom Smith Activity 5". Assess progress with terrain and objects. Allow some extra time to complete the activity if required, make sure students save their work.						
Main							
Time 30 minutes	Move onto activity 6 and challenge students to **draw/sketch** a **design** for their own unique **terrain** including **rocks**, **trees**, **water** and **characters**. **Activity 6** This activity is a chance for students to demonstrate their **sketching** (graphical) skills. Give students 10 minutes to complete this part of the activity. The design should have the following features: • Rocks • Trees • Water • Characters Direct students to open Kodu, students must then use their sketched designs to create the terrain and objects using a new world in Kodu. This is another opportunity for students to demonstrate the skills they have developed in Kodu. Give students 20 minutes to complete this part of the activity and offer extra help and support to students where required. There is no example answer for this activity however: • The terrain and objects created in Kodu should be very similar to the sketched design.						

	Make sure students save their Kodu world, again use appropriate file naming e.g. "Tom Smith Activity 6".
Plenary	
Time 5 minutes	Summarise lesson, recapping the learning objective and the key vocabulary used throughout.
Assessment focus	Students should be able to sketch a design for terrain and objects, then select the objects and tools required to create the terrain in Kodu.
Learning Curve	PD training sessions with information on the theory of games development and practical instructions to use Microsoft Kodu will be available on learning Curve via this link: https://bit.ly/2m3sDOm The access code is: CdScISPHcUaRPaZSe_9tHg

Grade	6	Subject	DT	Lesson number	2	Week number	5
Unit		**Date**		**Time**		**Page number**	
2		WC: 30/09/18		45 minutes		73-78	
Equipment required:				**Learning objectives**			
student book computer Microsoft Kodu				2.3 Apply basic control commands in Kodu.			
Keywords				control commands, when, do, rows, tiles			

Starter/Introduction activity

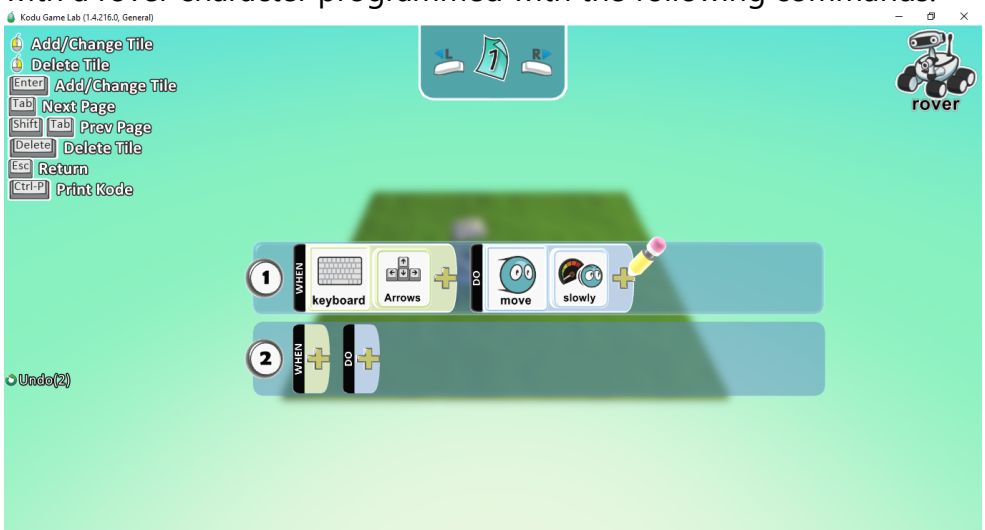
Time 15 minutes	Start by introducing Control Commands in Kodu explaining how When and Do are used with Rows and Tiles. Like other step by steps, control commands could be done with a class demonstration.

Main

Time
25 minutes

Character movement step by step

Direct students open Kodu and follow the **character movement** step-by-step instructions in the student book on pages 73-77. Give students 20 minutes to complete this activity and offer extra help and support to students where required. Students should create a world with a rover character programmed with the following commands:



Ensure students test the character movement and save their work, again use appropriate file naming e.g. "Tom Smith Character Movement".

Move onto activity 7 to assess student understanding of tiles used for character movement.

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

Activity 7

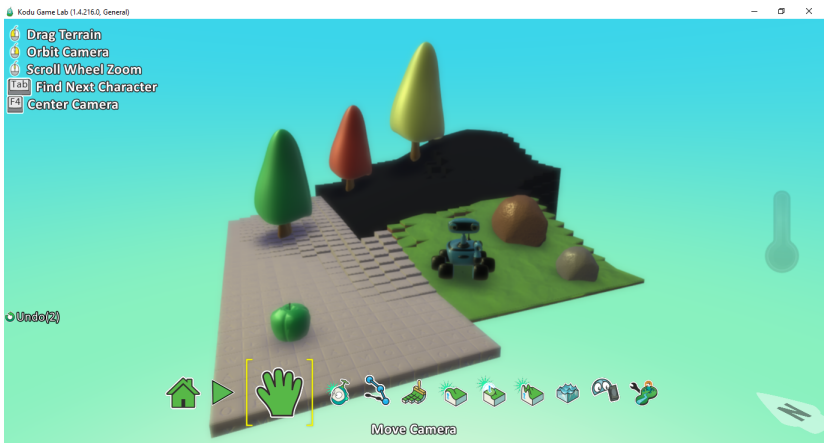
This activity is about putting the **tiles** (commands) in the correct order to program **movement** (control commands). Give students 5 minutes to complete this activity. Once complete go through the answers. See answers below:

<table>
<tr><td>keyboard</td><td>arrows</td><td>move</td><td>slowly</td></tr>
</table>

</td></tr>
<tr><td colspan="2">Plenary</td></tr>
<tr><td>Time
5
minutes</td><td>Summarise lesson, recapping the learning objective and the key vocabulary used throughout.</td></tr>
<tr><td colspan="2"><u>Assessment focus</u></td><td>Students should be able to order tiles (commands) to program control commands for a character in Kodu.</td></tr>
<tr><td colspan="2"><u>Learning Curve</u></td><td>PD training sessions with information on the theory of games development and practical instructions to use Microsoft Kodu will be available on learning Curve via this link: https://bit.ly/2m3sDOm

The access code is: CdScISPHcUaRPaZSe_9tHg</td></tr>
</table>

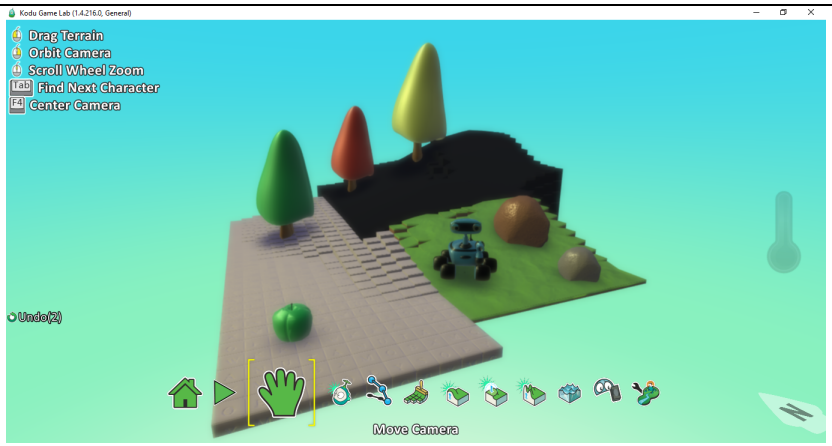
Grade	6	Subject	DT	Lesson number	3	Week number	5
Unit		**Date**		**Time**		**Page number**	
2		WC: 30/09/18		45 minutes		79-85	
Equipment required:				**Learning objectives**			
student book computer Microsoft Kodu				2.3 Apply basic control commands in Kodu. 2.4 Practise design and programming skills in a series of activities.			
Keywords				objects, terrain, characters, control commands			

Starter/Introduction activity	
Time 10 minutes	Start by introducing the Unit 2 task sheet on pages 79-85 of the student book. Make it clear the evaluation on pages 84-85 will be completed by the teacher.
Main	
Time 30 minutes	**Unit 2 task sheet** Students will be expected to complete the task sheet by working independently, so it is important that the teacher explains clearly what the students must do to complete the task. Facilitate the students work and offer help if any technical issues arise. By the end of the first session students should have created the required terrain in Kodu and saved the world with a sensible name e.g. "Tom Smith Unit 2 Task Sheet". The example below meets all **terrain** and **object requirements** for the task sheet: 

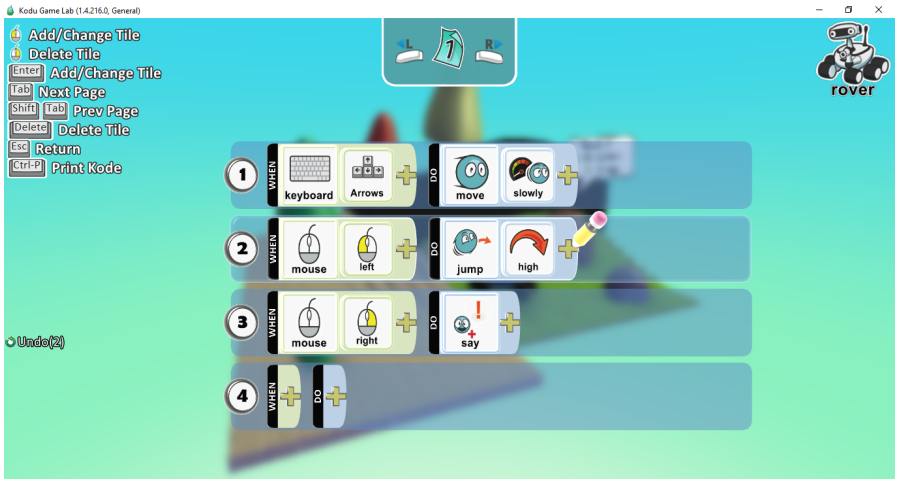
Plenary	
Time 5 minutes	Summarise lesson, recapping the learning objective and the task sheet requirements.
Assessment focus	Students should be able to create the terrain and objects required for the unit 2 task sheet.
Learning Curve	PD training sessions with information on the theory of games development and practical instructions to use Microsoft Kodu will be available on learning Curve via this link: https://bit.ly/2m3sDOm The access code is: CdScISPHcUaRPaZSe_9tHg

Grade	6	Subject	DT	Lesson number	1	Week number	6
Unit		**Date**		**Time**		**Page number**	
2		WC: 07/10/18		45 minutes		79-86	
Equipment required:				**Learning objectives**			
student book computer Microsoft Kodu				2.3 Apply basic control commands in Kodu. 2.4 Practise design and programming skills in a series of activities.			
Keywords				objects, terrain, characters, control commands			

Starter/Introduction activity	
Time 10 minutes	Start by prompting students to open the world they started for the task sheet in the previous lesson. Their worlds should have sensible names e.g. "Tom Smith Unit 2 Task Sheet". Check progress, students should have created the required terrain in the previous lesson.
Main	
Time 30 minutes	**Unit 2 task sheet** Students should move on and program the rover character to **move**, **jump** and **talk**. More capable students may also be given some extra objectives, e.g. add extra objects and commands to the task sheet work, e.g. add apples and balloons to the terrain, bump command so character can interact with the apples or balloons. Facilitate the students work and offer help if any technical issues arise. Teachers must complete the task sheet evaluation on pages 84-85 of the student book. This can be done by reviewing the worlds created by each student either during or after the lesson. Students who complete all required steps can move on and complete activity 8 in the student book. By the end of the session students should have completed the task sheet and saved the world created in Kodu with a sensible name, e.g. "Tom Smith Unit 2 Task Sheet". The example below meets all terrain and object requirements for the task sheet:



These are the tiles required to apply control commands to the character in the task sheet:



Activity 8

Use activity 8 as extension work for students who have completed the task sheet.

The activity is about using the words provided to fill in the blanks and create a summary of what students have learned during the unit. See answers below:

Blank 1	Program
Blank 2	Move
Blank 3	Jump
Blank 4	Terrain

Plenary	
Time 5 minutes	Summarise lesson, recapping the learning objective and the task sheet requirements.

Assessment focus	Students should be able to create the terrain and objects required and add control command to the rover character to complete the Unit 2 task sheet.
Learning Curve	PD training sessions with information on the theory of games development and practical instructions to use Microsoft Kodu will be available on learning Curve via this link: https://bit.ly/2m3sDOm The access code is: CdScISPHcUaRPaZSe_9tHg

<table>
<tr><td>Grade</td><td>6</td><td>Subject</td><td>DT</td><td>Lesson number</td><td>2</td><td>Week number</td><td>6</td></tr>
<tr><td colspan="2">Unit</td><td colspan="2">Date</td><td colspan="2">Time</td><td colspan="2">Page number</td></tr>
<tr><td colspan="2">2/3</td><td colspan="2">WC: 07/10/18</td><td colspan="2">45 minutes</td><td colspan="2">86-94</td></tr>
<tr><td colspan="4">Equipment required:</td><td colspan="4">Learning objectives</td></tr>
<tr><td colspan="4">student book</td><td colspan="4">2.1 Understand planning and game development.
2.2 Recognise graphical aspects of game design.
3.1 Define rules, conditions and actions in Kudo.</td></tr>
<tr><td colspan="4">Keywords</td><td colspan="4">rules, conditions, actions</td></tr>
<tr><td colspan="8">Starter/Introduction activity</td></tr>
<tr><td>Time
15 minutes</td><td colspan="7">Start by briefly recapping the key points from Unit 2 then direct students to complete the Unit 2 quiz on page 86 in the student book.

See answers for marking below:
<table><tr><td>Question 1</td><td>Any 1 of the following: Setting a Goal, Decomposition, Time Management, Delegation</td></tr><tr><td>Question 2</td><td>Games Development</td></tr><tr><td>Question 3</td><td>Any 2 of the following: Concept, Design, Prototyping, Testing</td></tr><tr><td>Question 4</td><td>Ground Brush</td></tr><tr><td>Question 5</td><td>Accept answers like:

Use the right click and select program to show the programming page. Add tiles to the When and Do boxes in a row on the page.</td></tr></table></td></tr>
<tr><td colspan="8">Main</td></tr>
<tr><td>Time
25 minutes</td><td colspan="7">Move on and go through the unit 3 overview, keywords and learning outcomes for the unit.

Introduce rules, conditions and actions on page 92 of the student book. Opportunity for Q&A or class discussion. Teacher could also explain some examples of game conditions and game actions before students move onto activity 1.</td></tr>
</table>

Activity 1

Complete activity 1 to test student understanding of **conditions** and **actions** in **games**.

This activity is about matching game conditions with actions to create in the blanks to create game rules. This activity can be discussed in pairs or small groups. Give students 15 minutes to complete this activity. Once complete go through the answers. See answers below:

The player presses the arrow keys.	Character moves
The character collects an item.	Item disappears, player score is increased
The character reaches the end of the level.	Show score and load next level
The game time runs out.	Show Time Up message and endgame
The character is hit by an enemy.	Reduce character health points.
The character has no health points left.	Show Game Over message and endgame.

Plenary	
Time 5 minutes	Summarise lesson, recapping the learning objective and the key vocabulary used throughout.
Assessment focus	Students should have completed the unit 2 quiz using prior knowledge and be able to match game conditions to game actions to create game rules.
Learning Curve	PD training sessions with information on the theory of games development and practical instructions to use Microsoft Kodu will be available on learning Curve via this link: https://bit.ly/2m3sDOm The access code is: CdScISPHcUaRPaZSe_9tHg

<table>
<tr><td>Grade</td><td>6</td><td>Subject</td><td>DT</td><td>Lesson number</td><td>3</td><td>Week number</td><td>6</td></tr>
<tr><td colspan="2">Unit</td><td colspan="2">Date</td><td colspan="2">Time</td><td colspan="2">Page number</td></tr>
<tr><td colspan="2">3</td><td colspan="2">WC: 07/10/18</td><td colspan="2">45 minutes</td><td colspan="2">95-97</td></tr>
<tr><td colspan="3">Equipment required:</td><td colspan="5"><u>Learning objectives</u></td></tr>
<tr><td colspan="3">student book</td><td colspan="5">3.3 Construct a design for the mini-project game.</td></tr>
<tr><td colspan="3">Keywords</td><td colspan="5">planning, concept</td></tr>
<tr><td colspan="8">Starter/Introduction activity</td></tr>
<tr><td>Time
10 minutes</td><td colspan="7">Start by introducing the Unit 3 mini project starting on page 95 of the student book. In the mini project students will plan, design and create a simple computer game.</td></tr>
<tr><td colspan="8">Main</td></tr>
<tr><td>Time
30 minutes</td><td colspan="7">Explain that all projects should be planned properly to increase the chance of achieving a successful outcome. Then move onto activity 2.

Activity 2

Complete activity 2 tests to introduce project planning for the mini project.

This activity is about matching the planning stages with the descriptions to create a plan for the mini project. This activity can be discussed in pairs or small groups. Give students 10 minutes to complete this activity. Once complete go through the answers, explaining the planning for this project. See answers below:

<table>
<tr><td>Setting a Goal</td><td>The goal is to develop a simple computer game.</td></tr>
<tr><td>Decomposition</td><td>We can break down (decompose) the project into smaller tasks:

1. Game concept
2. Terrain and object design
3. Character design</td></tr>
</table>
</td></tr>
</table>

	4. Storyboard/Flowchart – (Logic) 5. Create terrain and character 6. Programming (Logic) 7. Testing and evaluation
Time Management	The teacher will plan how much time we have to complete each task in the project.
Delegation	We are working individually so won't have to delegate in this project.

Move on and explain that a **concept** is an idea for a game or other creative project and that students will get a choice of 2 concepts for their mini-project game.

Activity 3

Complete activity 3 to create the descriptions of the two game **concepts** (Apple collector or Balloon popper).

This activity is about filling in the blanks with the words provided to create two game concepts. This activity can be discussed in pairs or small groups. Give students 10 minutes to complete this activity. Once complete go through the game concepts and possible answers. Make sure students then choose which concept they will use for the mini project. See answers below:

Concept 1 – Apple collector When the game starts the __Rover or Cycle__ character will be in __Dessert or Forrest or Unknown__ terrain. The character must search the terrain and collect apples. When the character has collected __5 or 10__ apples, the player wins the game.
Concept 2 – Balloon popper

	When the game starts the __Rover or Cycle__ character will be in __Dessert or Forrest or Unknown__ terrain. The character must search the terrain and pop the balloons. When the character has popped __5 or 10__ balloons, the player wins the game.
Plenary	
Time 5 minutes	Summarise lesson, recapping the learning objective and the key vocabulary used throughout.
Assessment focus	Students should have created a plan for their mini project and created and chosen a game concept for their project.
Learning Curve	PD training sessions with information on the theory of games development and practical instructions to use Microsoft Kodu will be available on learning Curve via this link: https://bit.ly/2m3sDOm The access code is: CdScISPHcUaRPaZSe_9tHg

<table>
<tr><td>Grade</td><td>6</td><td>Subject</td><td>DT</td><td>Lesson number</td><td>1</td><td>Week number</td><td>7</td></tr>
<tr><td colspan="2">Unit</td><td colspan="2">Date</td><td colspan="2">Time</td><td colspan="2">Page number</td></tr>
<tr><td colspan="2">3</td><td colspan="2">WC: 14/10/18</td><td colspan="2">45 minutes</td><td colspan="2">97-98</td></tr>
<tr><td colspan="4">Equipment required:</td><td colspan="4"><u>Learning objectives</u></td></tr>
<tr><td colspan="4">student book</td><td colspan="4">3.3 Construct a design for the mini-project game.</td></tr>
<tr><td colspan="4">Keywords</td><td colspan="4">objects, terrain, design</td></tr>
<tr><td colspan="8">Starter/Introduction activity</td></tr>
<tr><td>Time
5
minutes</td><td colspan="7">Start by reminding students about the mini project and ensure all students have chosen a concept for their mini project game, either apple collector or balloon popper. (Activity 3).</td></tr>
<tr><td colspan="8">Main</td></tr>
<tr><td>Time
35 minutes</td><td colspan="7">Activity 4

Complete activity 4 where students will demonstrate understanding of their chosen concept by choosing objects.

This activity is about making a list of the objects they need for the mini-project game. Give students 10 minutes to complete this activity. Once complete, go through the answers. See answers below:

<table>
<tr><td>Apple collector game</td><td>5 or 10 apples
Trees, Rocks etc.</td></tr>
<tr><td>Balloon popper</td><td>5 or 10 balloons
Trees, Rocks etc.</td></tr>
</table>

Move on and explain that, using the list of objects, we are now going to design the terrain and objects for the mini-project game.

Activity 5

Complete activity 5 where students will demonstrate understanding of their chosen concept by designing the terrain and objects.

This activity is about sketching (draw) a design of the terrain and objects for the mini-project game using the list of objects from activity 4. This is a chance for students to demonstrate creative skills, they may also add colour to the design. Give students 25 minutes to complete this activity.</td></tr>
</table>

	Once complete, check sketched designs. Include all objects from the list made for activity 4.
Plenary	
Time 5 minutes	Summarise lesson, recapping the learning objective and the key vocabulary used throughout.
Assessment focus	Students should have created a list of objects for their mini-project game and used the list to sketch a design of the terrain and objects for the mini project game.
Learning Curve	PD training sessions with information on the theory of games development and practical instructions to use Microsoft Kodu will be available on learning Curve via this link: https://bit.ly/2m3sDOm The access code is: CdScISPHcUaRPaZSe_9tHg

Grade	6	Subject	DT	Lesson number	2	Week number	7
Unit		Date		Time		Page number	
3		WC: 14/10/18		45 minutes		99-101	
Equipment required:				Learning objectives			
student book				3.3 Construct a design for the mini-project game.			
Keywords				character, storyboard			
Starter/Introduction activity							
Time 5 minutes	Start by reminding students about the mini project and ensure all students have completed a design sketch for the terrain and objects. (Activity 5).						
Main							
Time 35 minutes	Explain that the mini-project game will need a **character** to collect the apples or pop the balloons and students will need to choose the character and **design** features (eg. colour and size). **Activity 6** Complete activity 6 where students will choose a character for the mini-project game. This activity is about making the choice of character along with the **colour** and **size** of the chosen character for use in the mini-project game. Students should choose just one character, but challenge them to be creative by choosing any size and colour for the character. Give students 10 minutes to complete this activity. Then check that all students have chosen a character, colour and size. Now students know the concept for the project and have designs for terrain, objects and the character. They can create a **storyboard** for their mini-project game. **Activity 7** Complete activity 7 where students will demonstrate understanding of the concept, object terrain and character design by creating a storyboard.						

This activity is about **sketching** (drawing) a design and adding comments to show what will happen at the beginning, middle and end of the game. This is another chance for students to demonstrate creative skills, they may also add colour to the design. Give students 25 minutes to complete this activity. Once complete check the storyboard matches their chosen game concept. See sample answer below:

Start	Middle	End
Sketch of terrain, character and objects (with either apples or balloons).	Sketch of terrain, (character has collected some apples or popped some balloons)	Sketch of terrain, character and objects (apples have been collected or balloons have been popped)
Game starts character appears (with apples or balloons)	Character has started to either (collect apples or pop balloons)	Game is won when character has either (collected 5 or 10 apples / popped 5 or 10 balloons)

Plenary	
Time 5 minutes	Summarise lesson, recapping the learning objective and the key vocabulary used throughout.
Assessment focus	Students should have created a character design for the mini project then, using the information from the concept, terrain design and character design create a storyboard for the mini-project game.
Learning Curve	PD training sessions with information on the theory of games development and practical instructions to use Microsoft Kodu will be available on learning Curve via this link: https://bit.ly/2m3sDOm The access code is: CdSclSPHcUaRPaZSe_9tHg

<table>
<tr><td>Grade</td><td>6</td><td>Subject</td><td>DT</td><td>Lesson number</td><td>3</td><td>Week number</td><td>7</td></tr>
<tr><td colspan="2">Unit</td><td colspan="2">Date</td><td colspan="2">Time</td><td colspan="2">Page number</td></tr>
<tr><td colspan="2">3</td><td colspan="2">WC: 14/10/18</td><td colspan="2">45 minutes</td><td colspan="2">102-104</td></tr>
<tr><td colspan="3">Equipment required:</td><td colspan="5"><u>Learning objectives</u></td></tr>
<tr><td colspan="3">student book
computer
Microsoft Kodu</td><td colspan="5">3.3 Construct a design for the mini-project game.
3.4 Create a mini-game for the project based on the design.</td></tr>
<tr><td colspan="3">Keywords</td><td colspan="5">step-by-step instructions (pseudocode algorithm), objects, terrain</td></tr>
<tr><td colspan="8">Starter/Introduction activity</td></tr>
<tr><td>Time
5
minutes</td><td colspan="7">Start by reminding students about the mini project and ensure all students have completed a storyboard for the mini-project game. (Activity 7).</td></tr>
<tr><td colspan="8">Main</td></tr>
<tr><td>Time
35 minutes</td><td colspan="7">Explain that we have now designed the terrain, objects and characters to complete graphical design.

Introduce the idea of logical design to plan how software or games will work. This can be done with step-by-step instructions (pseudocode algorithm) or with a flow chart.

Activity 8

Complete activity 8 where students will create the logical design for the mini-project game.

This activity is about filling in the blanks to create the step-by-step instructions (pseudocode algorithm) for the mini-project game. This should also test the students understanding of rules using When and Do commands. Give students 10 minutes to complete this activity. Once complete go through the answers to explain how the game will work. See answers below:

<table>
<tr><th>Step</th><th>Instruction</th></tr>
<tr><td>1</td><td>Start Game</td></tr>
<tr><td>2</td><td>When the arrow keys are pressed, Do move character.</td></tr>
<tr><td>3</td><td>When the character touches (bumps) an apple/balloon, Do eat it/pop it.</td></tr>
</table>
</td></tr>
</table>

4	When **the character eats an apple/pops the balloon,** Do **add 1 to score.**
5	**When** the score equals 5/10, Do show winner message
6	End Game

Now students should know the concept for the project game and have designs for the logic, terrain, character and objects. This means the planning and design for the mini-project game is complete, so they can begin to **create (develop)** the mini-project game.

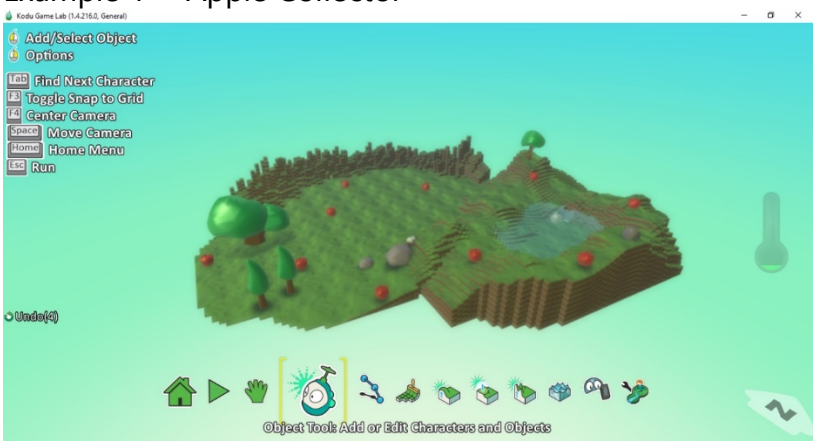
Prompt students to open a new world in Kodu to complete Activity 9 to **create** the **objects** and **terrain** for the game. Make sure students save their Kodu world using appropriate file naming eg. "Tom Smith Mini Project".

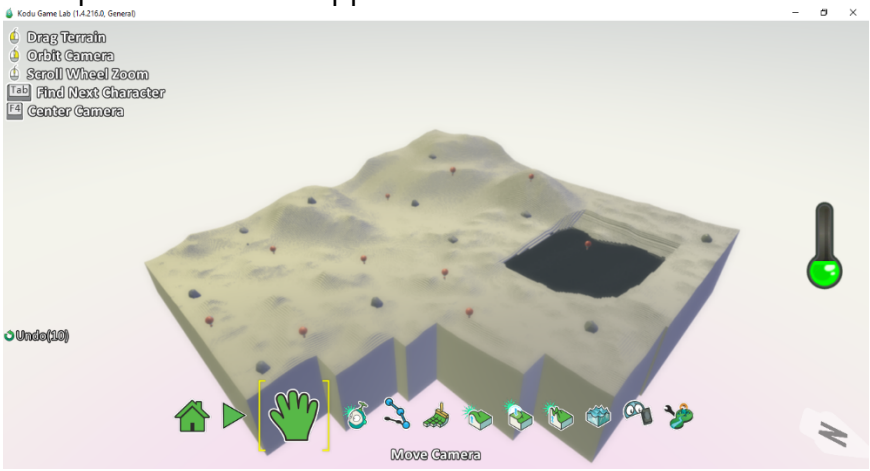
Activity 9

Complete Activity 9 where students will create the **terrain** and **objects** for the mini-project game in Kodu.

This activity is about creating the objects and terrain for the game using the information from the designs. This is another chance for students to demonstrate creative skills, they may also add colour to the design. Give students 25 minutes to complete this activity and offer extra help and support to students where required. The terrain and objects should match the students concept and design. Some examples of terrain for the mini project are included below:

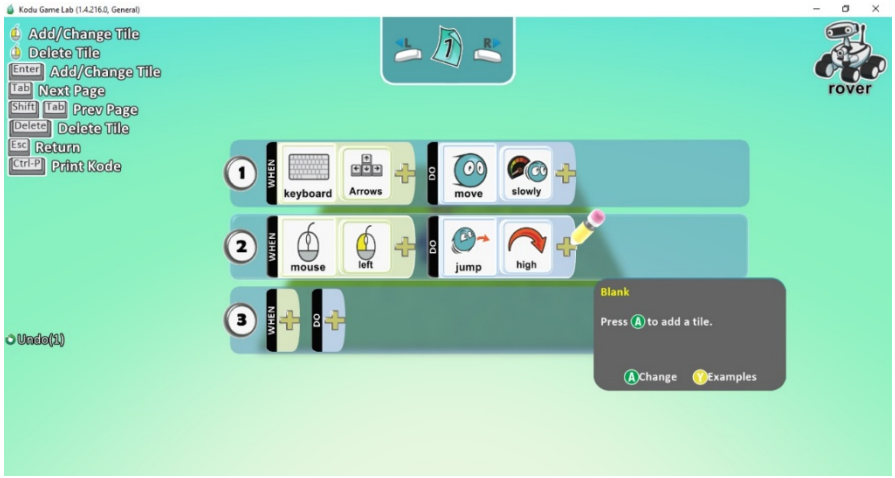
Example 1 - Apple Collector



	Example 2 – Balloon Popper  Make sure students save their Kodu world using appropriate file naming, e.g. "Tom Smith Mini Project".
Plenary	
Time 5 minutes	Summarise lesson, recapping the learning objective and the key vocabulary used throughout.
Assessment focus	Students should have created a logical design for the mini-project game and developed the objects and terrain for the game in Kodu.
Learning Curve	PD training sessions with information on the theory of games development and practical instructions to use Microsoft Kodu will be available on learning Curve via this link: https://bit.ly/2m3sDOm The access code is: CdScISPHcUaRPaZSe_9tHg

Grade	6	Subject	DT	Lesson number	1	Week number	8
Unit		**Date**		**Time**		**Page number**	
3		WC: 21/10/18		45 minutes		105-110	
Equipment required:				**Learning objectives**			
student book computer Microsoft Kodu				3.4 Create a mini-game for the project based on the design.			
Keywords				character, programming, rows, tiles			

Starter/Introduction activity	
Time 10 minutes	Start by prompting students to open the world they started for the task sheet in the previous lesson. Their worlds should have sensible names, e.g. "Tom Smith Mini Project". Check that students have created the required terrain and objects in the previous lesson (Activity 9), you may allow a little extra time for this if required.
Main	
Time 30 minutes	**Activity 10** Complete Activity 10 where students will add the **character** for the mini-project game. This activity is about adding the character to the mini-project game using the information from the design to set the **size** and **colour** of the character. Give students 10 minutes to complete this activity and offer extra help and support to students where required. The character should match the students character design. Once complete students have completed the **graphical development** of the mini-project game by creating terrain, objects and a character. Students should now move onto the programming for the mini-project game. **Basic programming step by step** Students should now follow the basic **programming** step-by-step instructions to program the **character** to **move** and **jump**. Give students 20 minutes to complete this activity and offer extra help and support to students where required. More-able students who achieve this should be encouraged to help others or start the advanced programming by following the bumping step-by-step instructions.

	The **tiles** required to program movement and jumping are included below:  Remind students to save their mini project game. The file should already have an appropriate name, e.g. "Tom Smith Mini Project".
Plenary	
Time 5 minutes	Summarise lesson, recapping the learning objective and the key vocabulary used throughout.
Assessment focus	Students should have added the character to the mini-project game in Kodu, they should also have programmed the character to move and jump.
Learning Curve	PD training sessions with information on the theory of games development and practical instructions to use Microsoft Kodu will be available on learning Curve via this link: https://bit.ly/2m3sDOm The access code is: CdScISPHcUaRPaZSe_9tHg

Grade	6	Subject	DT	Lesson number	2	Week number	8
Unit		**Date**		**Time**		**Page number**	
3		WC: 21/10/18		45 minutes		107-119	
Equipment required:				**Learning objectives**			
student book computer Microsoft Kodu				3.4 Create a mini-game for the project based on the design.			
Keywords				character, programming, bump, scoring, winning			
Starter/Introduction activity							
Time 10 minutes	Start by prompting students to open the world they started for the task sheet in the previous lesson. Their worlds should have sensible names, e.g. "Tom Smith Mini Project". Students should have added the character and programmed movement and jumping in the previous lesson (Activity 10 and Basic programming step-by-step) you may allow a little extra time for this if required.						
Main							
Time 30 minutes	**Bumping step-by-step / Scoring and winning step-by-step** Students should now complete the advanced **programming** by following the step-by-step instructions for **bumping** then for **scoring** and **winning**. Give students 20 minutes to complete these activities and offer extra help and support to students where required. More-able students who achieve this should be encouraged to help others. The **tiles** required to program bumping, scoring and winning are included below:						

Example 1 Apple Collector

Example 2 Balloon Popper

Remind students to save their mini-project game. The file should already have an appropriate name, e.g. "Tom Smith Mini Project".

Activity 11 / Activity 12

Complete Activity 11 and Activity 12 to check understanding of the programming for the mini-project game at the end of the lesson.

These activities are about putting Kodu tiles in order to program bumping (interacting with an object) and increasing the game score after bumping. Once complete, go through the answers. See answers below;

Activity 11		
When bumped	Apple	Do eat

	Activity 12				
	When bumped	Balloon	Do score	Red	01 Point
Plenary					
Time 5 minutes	Summarise lesson, recapping the learning objective and the key vocabulary used throughout.				
Assessment focus	Students should have bumping, scoring and winning in the mini-project game and arranged tiles in the activities to show an understanding of the programming they used.				
Learning Curve	PD training sessions with information on the theory of games development and practical instructions to use Microsoft Kodu will be available on learning Curve via this link: https://bit.ly/2m3sDOm The access code is: CdScISPHcUaRPaZSe_9tHg				

Grade	6	Subject	DT	Lesson number	3	Week number	8
Unit		**Date**		**Time**		**Page number**	
3		WC: 21/10/18		45 minutes		120-124	
Equipment required:				**Learning objectives**			
student book computer Microsoft Kodu				3.1 Define rules, conditions and actions in Kudo. 3.2 Apply knowledge to use rules, conditions and actions in Kodu.			
Keywords				testing, evaluation			
Starter/Introduction activity							
Time 5 minutes	Start by explaining the importance of **testing software** and **games** both during and after they have been created (developed). Prompt students to open the world they created for the mini-project game in the previous lessons. Their worlds should have sensible names, e.g. "Tom Smith Mini Project".						
Main							
Time 35 minutes	**Activity 13** Complete Activity 13 to **test** the mini-project game against the **requirements**. The activity is about using the mini-project game in play mode to answer the questions in the test table. The students must simply tick [√] in either the Yes or No column to record if the game passes or fails each test. Give students 15 minutes to complete this activity. If time permits students can switch Kodu into edit mode to make changes and improvements where their game has failed a test. There is an opportunity to survey the group on how many tests their project games passed. Move onto Activity 14 to briefly **evaluate** the project and their own performance, it's important students learn from the experience. **Activity 14** Complete Activity 14 to **evaluate** the mini project game and the students own performance during the project. The activity is about identifying a good feature of the game, a bad feature of the game and a possible improvement. Students should						

also consider their own performance and what they may do differently in future projects. One sentence for each question will be sufficient.

Give students 10 minutes to complete this activity then move onto the next. Some answer suggestions below:

1. Explain a good feature of your mini-project game?	(Any feature with explanation/justification) Explain how the game has passed a test.
2. Explain a bad feature of your mini-project game?	(Any feature with explanation/justification.) E.g. Explain if the game has failed a test and why.
3. Explain a change/improvement you could make to your mini-project game?	(Any change/improvement with explanation/justification) E.g. any change(s) required, so the game passes all tests above or more apples/balloons to increase game complexity or more levels to increase game duration.
4. What could you change/improve about your performance in the future?	(Any improvement with explanation/justification), E.g. Improve drawing skills to make better design or improved programming skills to make better games.

Move on from the evaluation and complete the Unit 3 pop quiz.

Unit 3 pop quiz

Briefly recap the key points from Unit 3 then direct students to complete the Unit 3 pop quiz and evaluation on pages 123-124 in the student book. See answers for marking below:

Question 1	A. Using conditions and actions

	Question 2	C. When and Do tiles
	Question 3	B. Drawing/Sketching
	Question 4	A. Step-by-step instructions
	Question 5	B. Testing and debugging
Plenary		
Time 5 minutes	Summarise lesson, recapping the learning objective and the key vocabulary used throughout.	
Assessment focus	Students should have tested and evaluated the mini-project game and their own performance. They should also have completed the Unit 3 pop quiz using prior knowledge.	
Learning Curve	PD training sessions with information on the theory of games development and practical instructions to use Microsoft Kodu will be available on learning Curve via this link: https://bit.ly/2m3sDOm The access code is: CdScISPHcUaRPaZSe_9tHg	

<table>
<tr><td>Grade</td><td>6</td><td>Subject</td><td>DT</td><td>Lesson number</td><td>1</td><td>Week number</td><td>9</td></tr>
<tr><td colspan="2">Unit</td><td colspan="2">Date</td><td colspan="2">Time</td><td colspan="2">Page number</td></tr>
<tr><td colspan="2">4</td><td colspan="2">WC: 28/10/18</td><td colspan="2">45 minutes</td><td colspan="2">128-134</td></tr>
<tr><td colspan="3">Equipment required:</td><td colspan="5">Learning objectives</td></tr>
<tr><td colspan="3">student book</td><td colspan="5">4.1 Define repetition and how it is used in Kodu.</td></tr>
<tr><td colspan="3">Keywords</td><td colspan="5">programming structures, sequence, selection, repetition</td></tr>
<tr><td colspan="8">Starter/Introduction activity</td></tr>
<tr><td>Time
10 minutes</td><td colspan="7">Start by going through the Unit 4 overview, keywords and learning outcomes for the unit. Introduce programming structures using the information on pages 130-131 of the student book.</td></tr>
<tr><td colspan="8">Main</td></tr>
<tr><td>Time
30 minutes</td><td colspan="7">
Activity 1

Complete Activity 1 to assess student understanding of programming structures.

The activity is about matching the programming structures with the description. This activity can be discussed in pairs or small groups. Give students 10 minutes to complete this activity. Once complete go through the answers. See answers below:

<table>
<tr><td>Sequence</td><td>Commands are done once in order.</td></tr>
<tr><td>Selection</td><td>Commands are repeated several times.</td></tr>
<tr><td>Repetition</td><td>Logic is used to decide which commands to do.</td></tr>
</table>

Opportunity for class discussion about which structure would be used for each task before students move on to complete Activity 2.

Activity 2

Complete Activity 2 to apply knowledge about programming structures to game related tasks.

The activity is about matching the programming structures with the game related tasks. This activity can be discussed in pairs or small
</td></tr>
</table>

groups. Give students 10 minutes to complete this activity. Once complete go through the answers. See answers below:

Sequence	Showing a "Go" message when a game starts
Selection	Deciding if the player has won or lost the game
Repetition	Showing a count down from 10 to 1 in a game

Move on to explain how repetition works in Microsoft Kodu.

Activity 3

Complete Activity 3 to learn the key terms for **repetition**.

The activity is about unscrambling the words to identify 3 terms (names) for repetition. Give students 10 minutes to complete this activity. Once complete go through the answers. See answers below:

Itepntroei	repetition
Otairteni	iteration
Pgoioln	looping

Plenary	
Time 5 minutes	Summarise lesson, recapping the learning objective and the key vocabulary used throughout.
Assessment focus	Students should understand programming structures and how they could be used for game related tasks. Students should also know the 3 names used for repetition.
Learning Curve	PD training sessions with information on the theory of games development and practical instructions to use Microsoft Kodu will be available on learning Curve via this link: https://bit.ly/2m3sDOm The access code is: CdSclSPHcUaRPaZSe_9tHg

<table>
<tr><td>Grade</td><td>6</td><td>Subject</td><td>DT</td><td>Lesson number</td><td>2</td><td>Week number</td><td>9</td></tr>
<tr><td colspan="2">Unit</td><td colspan="2">Date</td><td colspan="2">Time</td><td colspan="2">Page number</td></tr>
<tr><td colspan="2">4</td><td colspan="2">WC: 28/10/18</td><td colspan="2">45 minutes</td><td colspan="2">134-141</td></tr>
<tr><td colspan="3">Equipment required:</td><td colspan="5">Learning objectives</td></tr>
<tr><td colspan="3">student book</td><td colspan="5">4.2 Understand testing and debugging methods.
4.3 Apply knowledge to test and debug a series of small programs.</td></tr>
<tr><td colspan="3">Keywords</td><td colspan="5">testing, logical error, syntax error, debugging</td></tr>
<tr><td colspan="8">Starter/Introduction activity</td></tr>
<tr><td>Time
5 minutes</td><td colspan="7">Start by introducing testing, logical errors and syntax errors using the information on pages 134-135 of the student book.</td></tr>
<tr><td colspan="8">Main</td></tr>
<tr><td>Time
35 minutes</td><td colspan="7">Activity 4

Complete Activity 4 to assess student understanding of logical and syntax errors.

The activity is about identifying the type of error in 3 examples of games programmed with Kodu tiles. This activity can be discussed in pairs or small groups. Give students 15 minutes to complete this activity. Once complete, go through the answers. See answers below:

<table>
<tr><td>Game 1</td><td>Syntax error</td><td>missing tile for arrow keys should be next to the keyboard tile</td></tr>
<tr><td>Game 2</td><td>Syntax error</td><td>The missing tile for 01 point should be next to the red score tile</td></tr>
<tr><td>Game 3</td><td>Logic error</td><td>The eat tile is being used, should be using a boom tile.</td></tr>
</table>

Remind students that all testing is about identifying errors and move onto Activity 5.</td></tr>
</table>

Activity 5

Complete Activity 5 to identify different **types** of **testing**.

The activity is about finding the names of 5 types of testing from the grid. This activity can be done in pairs or small groups. Give students 5 minutes to complete this activity. Once complete go through the answers. See answers below:

Alpha
Beta
Whitebox
Blackbox
Acceptance

Introduce **debugging** and emphasise how **testing** and **debugging** is used to **remove errors** from games and software using the information on page 138 of the student book. Move onto Activity 6.

Activity 6

Complete Activity 6 to assess students understanding of **errors** and ability to **debug** Kodu games (programs).

The activity is about identifying errors in 3 examples of games programmed with Kodu. Then debugging by rewriting the programs in the student book with the correct tiles. This activity can be discussed in pairs or small groups. Give students 15 minutes to complete this activity. Once complete, go through the answers. See answers below:

Game 1				
Error:	The character is using WASD to move, but they should be using arrows.			
Debugged tiles:	keyboard	arrows	move	slowly
Game 2				

	Error:	The character is using boom, but they should be using eat.				
	Debugged tiles:	bumped	apple	Eat		
	Game 3					
	Error:	The score is using 10 points, but it should be using 01 point.				
	Debugged tiles:	bumped	balloon	boom		
		bumped	balloon	score	Red	01 point
Plenary						
Time 5 minutes	Summarise lesson, recapping the learning objective and the key vocabulary used throughout.					
Assessment focus	Students should understand testing and be able to identify types of error. Students should also be able to test and debug Kodu tiles.					
Learning Curve	PD training sessions with information on the theory of games development and practical instructions to use Microsoft Kodu will be available on learning Curve via this link: https://bit.ly/2m3sDOm The access code is: CdScISPHcUaRPaZSe_9tHg					

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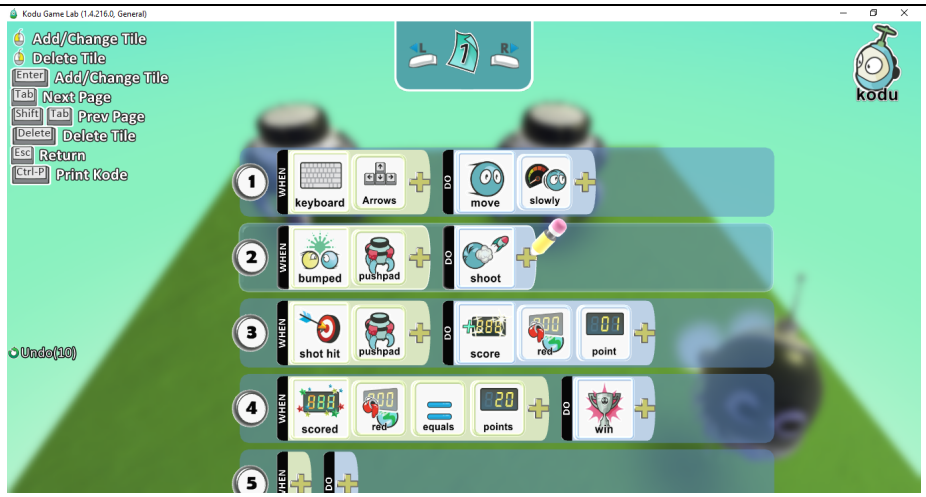
<tr><td colspan="2">Unit</td><td colspan="2">Date</td><td colspan="2">Time</td><td colspan="2">Page number</td></tr>
<tr><td colspan="2">4</td><td colspan="2">WC: 28/10/18</td><td colspan="2">45 minutes</td><td colspan="2">141-146</td></tr>
<tr><td colspan="3">Equipment required:</td><td colspan="5">Learning objectives</td></tr>
<tr><td colspan="3">student book
computer
Microsoft Kodu</td><td colspan="5">4.2 Understand testing and debugging methods.
4.3 Apply knowledge to test and debug a series of small programs.
4.4 Understand the features of the Rover character.</td></tr>
<tr><td colspan="3">Keywords</td><td colspan="5">testing, logical error, syntax error, debugging, Rover features</td></tr>
<tr><td colspan="8">Starter/Introduction activity</td></tr>
<tr><td>Time
5
minutes</td><td colspan="7">Remind students about testing and debugging, then explain / challenge them to program, test and debug a game in Kodu.</td></tr>
<tr><td colspan="8">Main</td></tr>
<tr><td>Time
35 minutes</td><td colspan="7">Program, test and debug a game step by step

Have students follow the step-by-step instructions on pages 141-143 in the student book to program a game in Kodu. Once programmed students should test the game in Kodu to try to identify the errors, then debug by correcting the programming tiles.

Offer extra help and support to students where required. Give students 25 minutes to complete this activity. Once complete go through the answers. See answers below:

<table><tr><td rowspan="2">Errors (bugs)</td><td>1. Shot hit is using sub, but it should be using pushpad.</td></tr><tr><td>2. Scored is using green, but it should be using red.</td></tr></table>
Debugged tiles for the program below:</td></tr>
</table>



Move on and introduce the Mars Curiosity Rover using the information in the student book, emphasise that the character is based on the actual Mars Curiosity Rover. Introduce the **Rover character** and **features** in Kodu. Move on to Activity 7.

Activity 7

Complete Activity 7 to assess student understanding of the **Rover character features**.

The activity is about matching the names with descriptions of the Rover characters features. This activity can be done in pairs or small groups. Give students 10 minutes to complete this activity. Once complete go through the answers. See answers below:

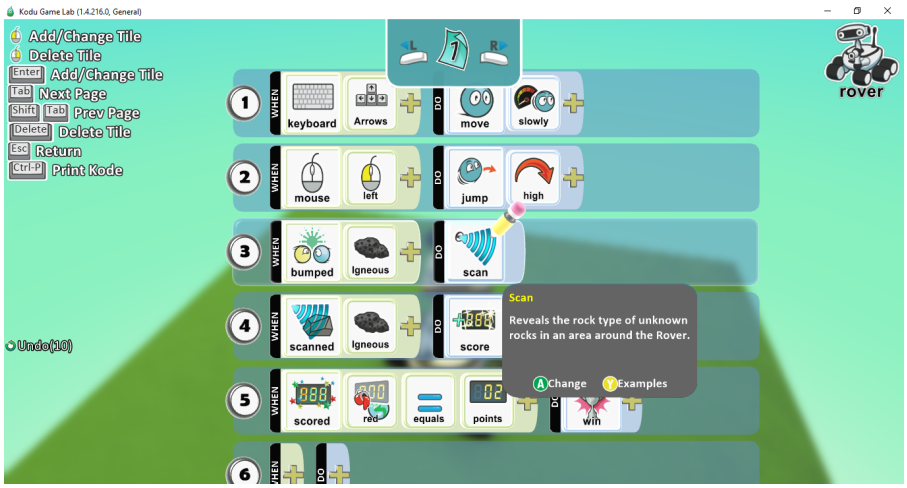
beam	This feature allows the Rover to use a laser.
scan	This feature identifies rocks using x-ray.
inspect	This feature uses a drill to gather rock samples.
picture	This feature allows the Rover to use a camera.

Plenary	
Time 5 minutes	Summarise lesson, recapping the learning objective and the key vocabulary used throughout.
Assessment focus	Students should understand testing and be able to test and debug a game in Kodu. Students should also be able to identify the features of the Rover character.

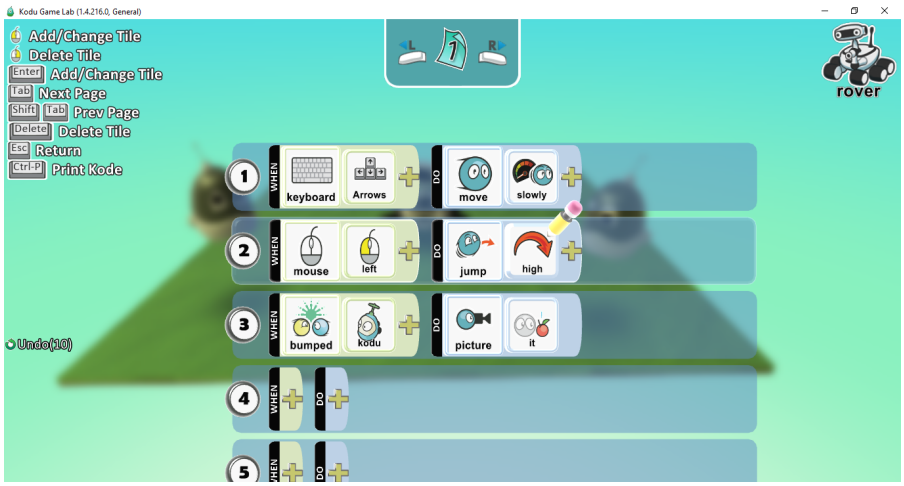
Learning Curve	PD training sessions with information on the theory of games development and practical instructions to use Microsoft Kodu will be available on learning Curve via this link: https://bit.ly/2m3sDOm The access code is: CdScISPHcUaRPaZSe_9tHg

Grade	6	Subject	DT	Lesson number	1	Week number	12
Unit		**Date**		**Time**		**Page number**	
4		WC: 04/11/18		45 minutes		147-159	
Equipment required:				**Learning objectives**			
student book computer Microsoft Kodu				4.4 Understand the features of the Rover character.			
Keywords				Rover features, beam, scan, picture			
Starter/Introduction activity							
Time 10 minutes	Remind students about the **Rover character** and explain that we will now learn how to use some of the character **features** in Kodu. The **scan** and **picture** features could be shown with a class demonstration.						
Main							
Time 30 minutes	**Using the scan feature step by step / Using the picture feature step by step** Direct student to use the step-by-step instructions on pages 147-159 of the student book to **program** the Rover **scan** and Rover **picture features**. Offer extra help and support to students where required. More-able students who achieve this should be encouraged to help others. Give students 30 minutes to complete these activities. Remind students to save their work as they may want to refer back to it later. The files should have appropriate names, e.g. "Tom Smith Scan Feature" and "Tom Smith Picture Feature" The **tiles** required to program the scan and picture features are included below:						

Scan Feature



Picture Feature



Plenary	
Time 5 minutes	Summarise lesson, recapping the learning objective and the key vocabulary used throughout.

Assessment focus	Students should be able to program the scan and picture features for the Rover character in Kodu.
Learning Curve	PD training sessions with information on the theory of games development and practical instructions to use Microsoft Kodu will be available on learning Curve via this link: https://bit.ly/2m3sDOm The access code is: CdScISPHcUaRPaZSe_9tHg

Grade	6	Subject	DT	Lesson number	2	Week number	12
Unit		**Date**		**Time**		**Page number**	
4		WC: 04/11/18		45 minutes		160-166	
Equipment required:				**Learning objectives**			
student book computer Microsoft Kodu				4.4 Understand the features of the Rover character.			
Keywords				Rover features, beam, scan, picture			

Starter/Introduction activity	
Time 5 minutes	Start by introducing the Unit 4 task sheet on pages 160-166 of the student book. Make it clear the evaluation on pages 165-166 will be completed by the teacher. Explain that students may refer to the previous work as the **beam feature** in the task sheet works in a similar way to the Rover scan and picture features.
Main	
Time 35 minutes	**Unit 4 task sheet** Students will be expected to complete the task sheet independently, so it is important they are clear about what is expected. Given their skills and experience with Kodu, students should complete the task sheet in one lesson. Facilitate the students work and offer help if any technical issues arise. Make sure students save their work using a sensible file name, e.g. "Tom Smith Unit 4 Task Sheet". Teacher evaluations can be completed by reviewing the work produced. Teachers must complete the task sheet evaluation on pages 165-166 of the student book. This can be done by reviewing the worlds created by each student either during or after the lesson. The example below meets all terrain, character and object requirements for the task sheet:

These are the tiles required to apply control commands and program the scan feature in the task sheet;

Plenary	
Time 5 minutes	Summarise lesson, recapping the learning objective and the key vocabulary used throughout.
<u>Assessment focus</u>	Students should be able to create the terrain and objects required and add command to the Rover character to program the beam feature to complete the Unit 4 task sheet.
<u>Learning Curve</u>	PD training sessions with information on the theory of games development and practical instructions to use Microsoft Kodu will be available on learning Curve via this link: https://bit.ly/2m3sDOm The access code is: CdScISPHcUaRPaZSe_9tHg

<table>
<tr><td>Grade</td><td>6</td><td>Subject</td><td>DT</td><td>Lesson number</td><td>3</td><td>Week number</td><td>12</td></tr>
<tr><td colspan="2">Unit</td><td colspan="2">Date</td><td colspan="2">Time</td><td colspan="2">Page number</td></tr>
<tr><td colspan="2">4/5</td><td colspan="2">WC: 04/11/18</td><td colspan="2">45 minutes</td><td colspan="2">167-190</td></tr>
<tr><td colspan="4">Equipment required:</td><td colspan="4"><u>Learning objectives</u></td></tr>
<tr><td colspan="4">student book
computer
Microsoft Kodu</td><td colspan="4">4.1 Define repetition and how it is used in Kodu.
4.2 Understand testing and debugging methods.
4.3 Apply knowledge to test and debug a series of small programs.
4.4 Understand the features of the Rover character.</td></tr>
<tr><td colspan="4">Keywords</td><td colspan="4">enemy character, attack, movement, hit points</td></tr>
<tr><td colspan="8">Starter/Introduction activity</td></tr>
<tr><td>Time
10 minutes</td><td colspan="7">Start by briefly recapping the key points from Unit 4 then direct students to complete the Unit 4 quiz on pages 167-168 in the student book.

See answers for marking below:
<table><tr><td>Question 1</td><td>Sequence, selection, repetition</td></tr><tr><td>Question 2</td><td>false, Kodu uses repetition on all tiles (commands)</td></tr><tr><td>Question 3</td><td>Testing</td></tr><tr><td>Question 4</td><td>Debugging</td></tr><tr><td>Question 5</td><td>Scan, beam</td></tr></table></td></tr>
<tr><td colspan="8">Main</td></tr>
<tr><td>Time
30 minutes</td><td colspan="7">Move on and go through the Unit 5 overview, keywords and learning outcomes for the unit.

Introduce enemy character movement, attack and hit points. This could be done with a class demonstration then move on to the step-by-step guides.

Enemy character movement step by step / Enemy character attack step by step / Show hit points step by step

Direct students follow the step-by-step instructions on pages 174-189 to program enemy character movement, attack and showing</td></tr>
</table>

	Rover hit points. These 3 step-by-step guides should be done using the same world in Kodu. Offer extra help and support to students where required. Give students 25 minutes to complete this activity. **Activity 1 / Activity 2 / Activity 3** Complete Activity 1, Activity 2 and Activity 3 to assess student understanding of enemy movement, attack and when characters run out of hit points. These activities are about using Kodu **tiles** to program enemy movement, enemy attack and ending the game when no health points remain. Once complete go through the answers. See answers below:

Activity 1			
When always	Do move	wander	slowly

Activity 2			
When see	rover	Do shoot	it

Activity 3			
When health	equals	00 points	Do end

Plenary	
Time 5 minutes	Summarise lesson, recapping the learning objective and the key vocabulary used throughout.
Assessment focus	Students should have programmed enemy movement, attack and show hit pints in Kodu and arranged tiles in the activities to show an understanding of the programming they used.
Learning Curve	PD training sessions with information on the theory of games development and practical instructions to use Microsoft Kodu will be available on learning Curve via this link: https://bit.ly/2m3sDOm

	The access code is: CdScISPHcUaRPaZSe_9tHg

Grade	6	Subject	DT	Lesson number	1	Week number	13
Unit		**Date**		**Time**		**Page number**	
5		WC: 11/11/18		45 minutes		191-196	
Equipment required:				**Learning objectives**			
student book				5.1 Identify the requirements for the final project game.			
Keywords				project brief			
Starter/Introduction activity							
Time 10 minutes	Start by introducing the Unit 5 **project stages** and marking on pages 191-219 of the student book. Make it clear the evaluation on pages 217-219 will be completed by the teacher. Students will be expected to complete the project independently, so it is important they are clear about what is expected.						
Main							
Time 30 minutes	**Activity 4** Complete activity 4 to develop understanding of the Unit 5 **project**. This activity is about students working in pairs or groups, discussing what the project is about and what is required. Pose some questions "what is the project about?" and "what do you need to do to complete the project?" Give students 10 minutes to complete this activity. Once complete teacher may discuss student ideas with the group. **Activity 5** Complete Activity 5 to produce the assessed **project brief**. This activity is about students showing understanding of the project by explaining what they have been asked to do for upto 3 marks. Give students 10 minutes to complete this activity. Once complete teacher must mark the project brief using the marking criteria below:						

	Marking criteria: 1 mark for using keywords 'terrain' and 'objects' 1 mark for using keywords 'Rover' and 'rocks' 1 mark for using keywords 'win' and 'investigating' 1 mark for explaining that they will use systems development lifecycle to create a Mars Rover game 1 mark for explaining the advanced features Maximum of 3 marks. Use professional judgement.
Plenary	
Time 5 minutes	Summarise lesson, recapping the learning objective and the key vocabulary used throughout.
Assessment focus	Students should have developed an understanding of Unit 5 and completed the Unit 5 project brief.
Learning Curve	PD training sessions with information on the theory of games development and practical instructions to use Microsoft Kodu will be available on learning Curve via this link: https://bit.ly/2m3sDOm The access code is: CdScISPHcUaRPaZSe_9tHg

Grade	6	Subject	DT	Lesson number	2	Week number	13
Unit		**Date**		**Time**		**Page number**	
5		WC: 11/11/18		45 minutes		197-198	
Equipment required:				**Learning objectives**			
student book				5.2 Apply skills and knowledge to construct a design for the final project game that will meet all requirements.			
Keywords				object and terrain plan			

Starter/Introduction activity

Time 5 minutes	Remind students about the Unit 5 project and make sure they have already attempted the project brief (activity 5). Remember students will be expected to complete the assessed project tasks independently.

Main

Time
35 minutes

Now that students know about the project and have created a project brief they need to move onto the **objects** and **characters** required.

Activity 6

Complete Activity 6 to introduce the **objects** and **characters required** for the project.

This activity is about matching objects and with images. This also shows the quantity of each object required in the project. Students can work in pairs to complete this activity. Give students 5 minutes to complete this activity. Once complete go through the answers. See answers below:

Image 1	Crater terrain
Image 2	Sputnik character
Image 3	Igneous rock
Image 4	Rover character
Image 5	Pushpad character
Image 6	Hill terrain
Image 7	Sedimentary rock

	Activity 7 Complete Activity 7 to produce the assessed **sketched terrain design** including objects and characters. This activity is about drawing a design for the project game including the objects, terrain and characters from the Unit 6 plan for upto 3 marks. Students may add colour to the designs. Give students 20 minutes to complete this activity. **The design should have all elements from the plan;** **1 rover character, 1 pushpad character, 1 sputnik character, 5 igneous rocks, 5 sedimentary rocks, 1 hill (minimum), 2 craters (minimum).** **Teacher must award a mark for terrain design using the criteria in the evaluation after Activity 9's logical design has also been completed.**
Plenary	
Time 5 minutes	Summarise lesson, recapping the learning objective and the key vocabulary used throughout.

Assessment focus	Students should have identified the terrain, objects and characters for the project and completed the sketched terrain design.
Learning Curve	PD training sessions with information on the theory of games development and practical instructions to use Microsoft Kodu will be available on learning Curve via this link: https://bit.ly/2m3sDOm The access code is: CdScISPHcUaRPaZSe_9tHg

<table>
<tr><td>Grade</td><td>6</td><td>Subject</td><td>DT</td><td>Lesson number</td><td>3</td><td>Week number</td><td>13</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>5</td><td colspan="2">WC: 11/11/18</td><td colspan="2">45 minutes</td><td colspan="2">199-200</td></tr>
<tr><td colspan="3">Equipment required:</td><td colspan="5">Learning objectives</td></tr>
<tr><td colspan="3">student book</td><td colspan="5">5.2 Apply skills and knowledge to construct a design for the final project game that will meet all requirements.</td></tr>
<tr><td colspan="3">Keywords</td><td colspan="5">storyboard, logical design</td></tr>
<tr><td colspan="8">Starter/Introduction activity</td></tr>
<tr><td>Time
5
minutes</td><td colspan="7">Remind students about the Unit 5 project and make sure they have attempted the sketched design (activity 7).

Remember students will be expected to complete the assessed project tasks independently.</td></tr>
<tr><td colspan="8">Main</td></tr>
<tr><td>Time
35 minutes</td><td colspan="7">Now that students know about the project and have created a terrain, they need to move onto the storyboard.

Activity 8

Complete Activity 8 to produce a storyboard for the project.

This activity is about making a storyboard showing the start, middle and end of the project game. Teacher could discuss the requirements for the storyboard with the class before they attempt this activity. Give students 10 minutes to complete this activity. Once complete go through the answers. See suggested answers below:

<table>
<tr><td>1. Start</td><td>2. Middle</td><td>3. Middle</td><td>4. End</td></tr>
<tr><td>Image matching description</td><td>Image matching description</td><td>Image matching description</td><td>Image matching description</td></tr>
</table></td></tr>
</table>

Description: Countdown, then game starts (or any appropriate description)	Description: Rover beams rocks and avoids enemy character (or any appropriate description)	Description: Rover inspects rocks and avoids enemy character (or any appropriate description)	Description: When the score is 10 the rover must bump satellite to win the game (or any appropriate description)

Activity 9

Complete Activity 9 to produce the assessed **logical design** for the project.

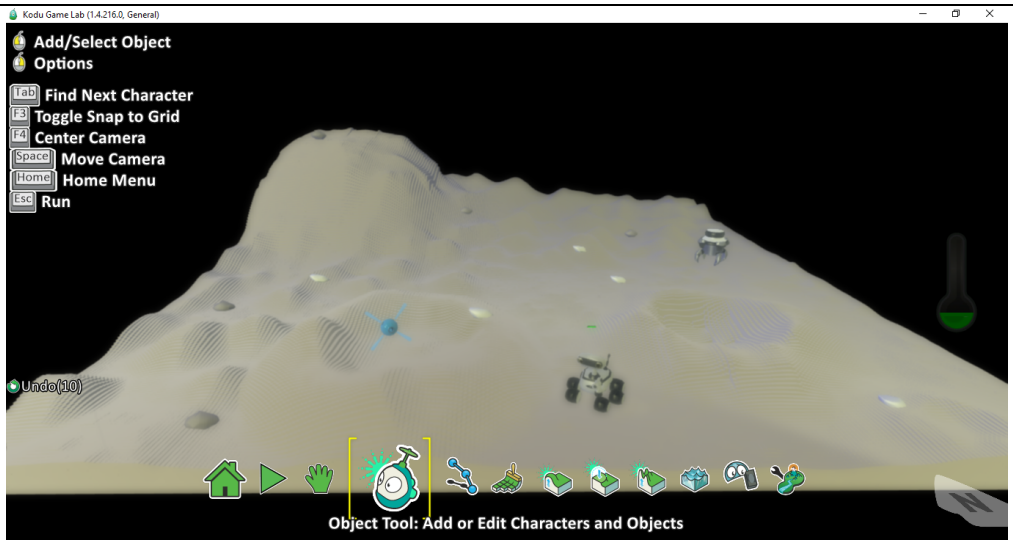
This activity is about planning the logical **when** and **do commands** for the project game; upto 3 marks. Students may refer back to the logical design for the mini project in Unit 3 whilst completing this task. Give students 20 minutes to complete this activity. See teacher answers for marking:

Start game	
When arrow keys are pressed	**Do** move Rover character
When mouse left click	**Do** Rover jump
When Rover touches (bumps) igneous rock	**Do** beam rock
When beamed rock	**Do** add 1 to score
When Rover touches (bumps) sedimentary rock	**Do** inspect rock
When inspected rock	**Do** add 1 to score
When pushpad sees Rover	**Do** shoot Rover
When Rover health = 0	**Do** game over
When score = 10 and rover touches (bumps) Sputnik	**Do** win game

	End game	
	Teacher must now award a total mark for terrain design and logical design using the criteria in the teacher evaluation.	
Plenary		
Time 5 minutes	Summarise lesson, recapping the learning objective and the key vocabulary used throughout.	
Assessment focus	Students should have created a storyboard for the project and completed the logical design.	
Learning Curve	PD training sessions with information on the theory of games development and practical instructions to use Microsoft Kodu will be available on learning Curve via this link: https://bit.ly/2m3sDOm The access code is: CdScISPHcUaRPaZSe_9tHg	

Grade	6	Subject	DT	Lesson number	1	Week number	14
Unit		**Date**		**Time**		**Page number**	
5		WC: 18/11/18		45 minutes		201-207	
Equipment required:				**Learning objectives**			
student book computer Microsoft Kodu				5.3 Demonstrate programming skills to create the final project game based on the design.			
Keywords				terrain, objects, programming			

Starter/Introduction activity	
Time 5 minutes	Remind students about the Unit 5 project and make sure they have attempted the logical design (Activity 9). Remember students will be expected to complete the assessed project tasks independently.
Main	
Time 35 minutes	Now that students have completed the project designs, they need to move onto **creating** the **game** in Kodu. **Activity 10** Start Activity 10 and complete **Task 1** - Create terrain and **Task 2** - Add objects and characters. This activity is about making **graphical features** for the project game. Give students 30 minutes to complete this activity. Facilitate the students work and offer help if any technical issues arise. See example work. **Below is an example of Mars game terrain including all required objects, characters and terrain features (hill and 2 craters) for Task 1 and Task 2:**



If time permits students can move onto **Task 3** - Basic programming - Rover character.

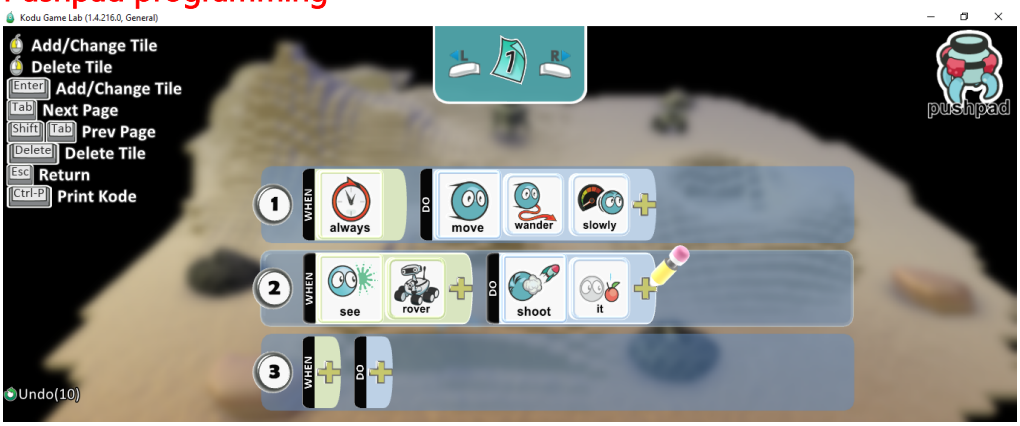
Make sure students save their Kodu world using appropriate file naming, e.g. "Tom Smith Mars Rover Project".

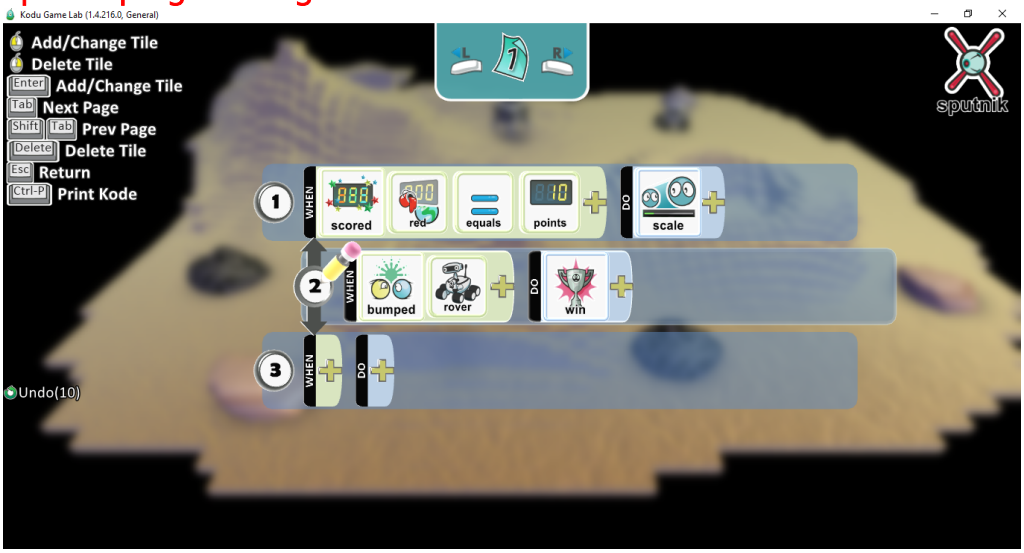
Plenary	
Time 5 minutes	Summarise lesson, recapping the learning objective and the key vocabulary used throughout.
Assessment focus	Students should have created the terrain, objects and characters for the project in Kodu.
Learning Curve	PD training sessions with information on the theory of games development and practical instructions to use Microsoft Kodu will be available on learning Curve via this link: https://bit.ly/2m3sDOm The access code is: CdScISPHcUaRPaZSe_9tHg

Grade	6	Subject	DT	Lesson number	2	Week number	14
Unit		**Date**		**Time**		**Page number**	
5		WC: 18/11/18		45 minutes		206-214	
Equipment required:				**Learning objectives**			
student book computer Microsoft Kodu				5.3 Demonstrate programming skills to create the final project game based on the design.			
Keywords				terrain, objects, programming			
Starter/Introduction activity							
Time 5 minutes	Start by prompting students to open the world they started for the project in the previous lesson. Their worlds should have sensible names, e.g. "Tom Smith Mars Rover Project". Students should have started Activity 10 and completed Task 1 and Task 2 in the previous lesson. Remember students will be expected to complete the assessed project tasks independently.						
Main							
Time 35 minutes	Now that students have created the terrain, objects and characters in Kodu they need to move onto **programming** the project game. **Activity 10** Continue Activity 10 and complete **Task 3** - Basic programming - Rover character then move onto **Task 4** - Advanced programming - pushpad character and finally **Task 5** - Advanced programming - Sputnik character. Students may refer back to previous work and Kodu programs to help with these tasks. Give students 30 minutes to complete this activity. Facilitate the students work and offer help if any technical issues arise. The project programming should be finished by the end of this session. Sample **tiles** (programming) required for the project below. For teacher reference only:						

Rover programming

Pushpad programming



	Sputnik programming  Make sure students save their Kodu world using appropriate file naming, e.g. "Tom Smith Mars Rover Project".
Plenary	
Time 5 minutes	Summarise lesson, recapping the learning objective and the key vocabulary used throughout.
Assessment focus	Students should have completed the programming for the project game in Kodu.
Learning Curve	PD training sessions with information on the theory of games development and practical instructions to use Microsoft Kodu will be available on learning Curve via this link: https://bit.ly/2m3sDOm The access code is: CdScISPHcUaRPaZSe_9tHg

Grade	6	Subject	DT	Lesson number	3	Week number	14
Unit		**Date**		**Time**		**Page number**	
5		WC: 18/11/18		45 minutes		215-221	
Equipment required: student book computer Microsoft Kodu				**Learning objectives** 5.4 Test and debug the project game to ensure it works as expected. 5.5 Evaluate the project game against the scenario requirements.			
Keywords				testing, debugging, evaluation			

Starter/Introduction activity	
Time 5 minutes	Start by prompting students to open the world they created for the project, their worlds should have sensible names, e.g. "Tom Smith Mars Rover Project". Make sure students have attempted to create the terrain, objects, characters and programming tasks. Remember students will be expected to complete the assessed project tasks independently.
Main	
Time 35 minutes	Now that students have created the terrain, objects and characters and programming in Kodu they need to move onto **testing** and **debugging**. **Activity 11** Complete Activity 11 to **test** and **debug** the project game. This activity is about testing their games by playing them, then ticking [√] or crossing [X] the test boxes and explaining any debugging required for failed tests for upto 5 marks. **Teacher must award a mark for programming, testing and debugging using the criteria in the evaluation after Activity 11 has also been completed. This could be done after the lesson.** Once testing is complete move on to the **project evaluation**. **Activity 12** Complete Activity 12 to **evaluate** the **project** and their **performance**.

<table>
<tr><td></td><td>This activity is about commenting on how well they performed at each stage of the project and how they could have done better for upto 5 marks. Give students 15 minutes to complete this activity.

Marking criteria: Award 1 mark for each evaluation section completed with suitable comments. Use professional judgement.

All assessed activities are now complete so the student's project can be marked to calculate the overall score.

Teacher should use the teacher answers provided and criteria in the teacher evaluation to award marks for each activity in the project to determine the student's overall project scores.</td></tr>
<tr><td colspan="2">Plenary</td></tr>
<tr><td>Time
5
minutes</td><td>Briefly recap the key points from Unit 5 then direct students to complete the Unit 5 quiz on page 221 in the student book.

See answers for marking below;
<table><tr><td>Question 1</td><td>Always</td></tr><tr><td>Question 2</td><td>True</td></tr><tr><td>Question 3</td><td>2. design/refine
3. make prototype
4. test/evaluate</td></tr><tr><td>Question 4</td><td>Testing and debugging</td></tr><tr><td>Question 5</td><td>No</td></tr></table></td></tr>
<tr><td><u>Assessment focus</u></td><td>Students should have completed the testing and evaluation for the project.</td></tr>
<tr><td><u>Learning Curve</u></td><td>PD training sessions with information on the theory of games development and practical instructions to use Microsoft Kodu will be available on learning Curve via this link: https://bit.ly/2m3sDOm

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</table>