Grade	7	Subject	DT	Lesson number	1	Week number	1
Unit		**Date**		**Time**		**Page number**	
1		WC: 12th January		45 minutes		2-12	
Equipment required				**Learning objectives**			
Textbook Pen/pencil				1.1 Build upon your knowledge of 2D and 3D models. 1.2 Demonstrate how to create a drawing in one-point perspective and two-point perspective. 1.8 Know how to keep your online data private.			
Keywords				architects, vanishing point, 2D, 3D			
Starter/Introduction activity							
5 minutes	Regroup class after winter break. Introduce students to **Minecraft** and describe what they will learn to be able to do with Minecraft. Talk through objectives for Term 1 and what the end result/project of the term will be. Introduce **'Unit 1: Introduction to Modelling and Design'** and give students a brief overview of the unit. Talk through the **keywords, unit overview and learning outcomes**.						
Main							
5 minutes	Now introduce the concept of **'E-safety'** to students and explain the importance of e-safety and how crucial it is to stay safe on the internet. Explain that e-safety will be used at the beginning of each unit of the book, and it will consist of a short theory section as well as a few activities. Introduce E-safety for Unit 1, **'Keeping Your Online Data Private'** and explain why it is crucial to protect your personal data on the internet. Then, complete **Activity 1** by adding true or false next to the statements given (answers below). Move onto the section, **'How are buildings made?'** and explain the difference between **2D and 3D.** Then, complete **Activity 2** by drawing the missing 2D or 3D shape (answers below).						

5 minutes 10 minutes 15 minutes	Move onto describing what **perspective** is and explain how we can create drawings that have perspective. Use the video to explain. Move onto explaining the difference between **one-point perspective and two-point perspective**. Complete **Activity 3** by identifying which of the images show one-point perspective and which show two-point perspective. Move onto **Activity 4** by drawing the house shown in the image using two-point perspective (teachers use own discretion when marking).
Plenary	
5 minutes	Summarise the lesson, recapping the learning objective(s) and key vocabulary used throughout.
Assessment focus	1.1 Build upon your knowledge of 2D and 3D models. 1.2 Demonstrate how to create a drawing in one-point perspective and two-point perspective. 1.8 Know how to keep your online data private. Complete Activities 1, 2, 3 and 4.
LearningCurve	The entire course plus specific instructional videos are available on LearningCurve via this link: Click here to open the link.

Activities 1 and 3 can be completed interactively. There is a link to the interactive version in the activity book on Al Diwan. You can also access the activities with this link:

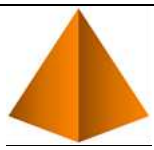
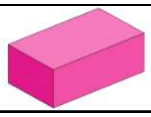
Activity 1: https://www.mauthor.com/present/6621205902786560

Activity 3: https://www.mauthor.com/present/5260209753817088

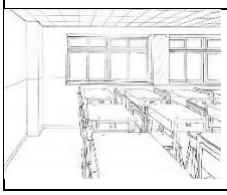
Activity 1 answers:

Statement	True or False
If someone asks for your password, you should share it with them.	**false**
Keep your social media profile public so you can share your pictures.	**false**
Use a password that has at least 8 characters	**true**
You should keep your password the same.	**false**
If someone you don't know asks you for your phone number online, you should not give it to them	**true**

Activity 2 answers:

2D shape	3D shape
 Triangle	 Pyramid
 Circle	 Sphere
 Square	 Cube
 Rectangle	 Cuboid
 Rhombus	 Diamond

Activity 3 answers:

	One-point perspective	Two-point perspective
		✓
	✓	
		✓
	✓	

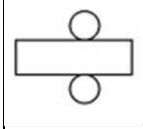
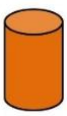
Grade	7	Subject	DT	Lesson number	2	Week number	1
Unit		**Date**		**Time**		**Page number**	
1		WC: 12th January		45 minutes		13-19	
Equipment required				**Learning objectives**			
Textbook Pen/pencil				1.3 Sketch a 3D shape using a 2D net. 1.4 Build a 3D shape using a 3D net. 1.5 Demonstrate an understanding of how buildings are made. 1.6 Describe the materials used in construction of buildings and explain where they come from.			
Keywords				2D, 3D, buildings, materials, construction			
Starter/Introduction activity							
5 minutes	Recap the previous lesson on perspective. Encourage students to practice drawing in one-point and two-point perspective at home. Move onto **'Nets and 3D Shapes'** and explain how it is used to make **3D shapes**.						
Main							
5 minutes 10 minutes	Discuss how **3D shapes** can be made out of **2D nets** and show the pyramid example. Complete **Activity 5** by using the 2D net given to draw the 3D shape it becomes if assembled (answers will be unique to each individual and the next activity will show the correct answers when nets are assembled). Now, move onto **Activity 6** (answers below) by cutting out the 2D shapes given in the previous activity, folding along the dotted lines where required, and assembling the shape. Students can use the assembled shapes to mark their drawings created in **Activity 5** (if students cannot complete the activity during the given time, encourage them to continue with the activity at home). Move onto **'Designing and making buildings'** and explain the main things that need to be considered when designing buildings, such as, the building size, the number of rooms, the location, the cost etc. Briefly discuss the various spaces/rooms a house consists of and describe the						

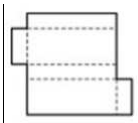
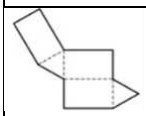
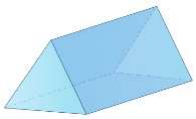
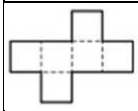
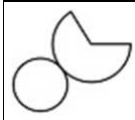
20 minutes	purpose of a design plan. Move onto introducing the different types of materials used in buildings and briefly talk about their properties and purpose. Test students' knowledge on materials by completing **Activity 7** (answers below).
Plenary	
5 minutes	Summarise the lesson, recapping the learning objective(s) and key vocabulary used throughout.
Assessment focus	1.3 Sketch a 3D shape using a 2D net. 1.4 Build a 3D shape using a 3D net. 1.5 Demonstrate an understanding of how buildings are made. 1.6 Describe the materials used in construction of buildings and explain where they come from. Complete Activities 5, 6 and 7.
LearningCurve	The entire course plus specific instructional videos are available on LearningCurve via this link: Click here to open the link.

Activity 7 can be completed interactively. There is a link to the interactive version in the activity book on Al Diwan. You can also access the activity with this link:

Activity 7: https://www.mauthor.com/present/4703338051534848

Activity 6 answers:

2D net	3D shape
	 Cylinder

	 Cuboid
	 Triangular prism
	 Cube
	 Cone

Activity 7 answers:

Material	Purpose
Wood 	It is used to make tiles for floors coverings for walls and stairs for decoration.
Marble 	It is used to create the frame for the building. It is normally used for very large buildings like factories.
Glass 	Used to make tiles for roofs and floors. Can also be used to make pipes like sewage and water pipes.
Steel 	It is used to make windows and can be used a lot in large buildings to make it look very good.
Brick or blocks  v	Used to cover walls and floors to make them look better. They can also be used to mold to any shape.
Cement 	Used for creating support structures, for the roof, and the floor and for the doors and sides of windows.
Ceramic 	For the walls, to build the structure of the house.

Please note wording might be slightly different due to editing changes within the student book and activity book.

Grade	**7**	**Subject**	**DT**	**Lesson number**	**3**	**Week number**	**1**
Unit		**Date**		**Time**		**Page number**	
1		12th January		45 minutes		19-20	
Equipment required				**Learning objectives**			
Textbook Pen/pencil				1.7 Explain the importance of good colour theory and how this impacts aesthetics.			
Keywords							
Starter/Introduction activity							
5 mins	Recap the previous lesson by discussing materials used to create buildings. Introduce today's lesson which will be creating the plan of a house and **colour theory**.						
Main							
5 minutes 10 minutes 10 minutes 10 minutes	Complete **Activity 8 Part 1** by creating the plan of a house on paper. Move onto **Activity 8 Part 2** in Minecraft and follow the step-by-step guide to create the house structure and one room in Minecraft. Now that students have an idea of how to create one room, move onto creating the rest of the rooms in the house. Introduce students to the next section, **'Designing with colours'** and discuss the importance of considering colour whilst designing. Explain what the **colour wheel** is and how it is used. **Note** about primary colours: There are actually two types of primary colours, additive for mixing light, like in a TV (**red, green, blue**) and subtractive for mixing paint (**red, yellow, blue**). The student book teaches subtractive. For advanced students, you can explain the difference between the two.						

	Get students to complete **Activity 9 Part 1 and Part 2** by completing the quiz about colour theory. Finally, get students to use their knowledge of colour to decorate their Minecraft building in **Part 3**.
Plenary	
5 minutes	Summarise the lesson, recapping the learning objectives and key vocabulary used throughout.
Assessment focus	1.7 Explain the importance of good colour theory and how this impacts aesthetics. **Complete Activities 8 and 9.**
LearningCurve	The entire course plus specific instructional videos are available on LearningCurve via this link: Click here to open the link.

Activity 9 answers:

Part 1

What are the three primary colours?

1. red
2. yellow
3. blue

Why are they called primary colours?

They cannot be made by mixing other colours together.

Part 2

Using the colour wheel, name the colours that go well with

Colour	Matching Colour

Blue	Orange
Yellow	Purple
Red	Green

Grade	7	Subject	DT	Lesson number	4	Week number	2
Unit		**Date**		**Time**		**Page number**	
1 and 2		19th January		45 minutes		20-24	
Equipment required				**Learning objectives**			
Textbook Pen/pencil				1.7 Explain the importance of good colour theory and how this impacts aesthetics. 2.7 Explain how heavy use of computers and mobile phones can result in an increase in sleep disorder symptoms in young adults.			
Keywords				colour theory, e-safety			
Starter/Introduction activity							
5 minutes		Recap the previous lesson by discussing colour theory and ask students what the primary colours are, and which colours go together.					
Main							
15 minutes		Complete **Activity 9 Part 3** by using everything that has been taught about colour theory to decorate the inside of a room.					
10 minutes		Talk through the end of unit summary and complete the **end of unit quiz (Activity 10**).					
10 minutes		Move onto Unit 2, **'Programming and 3D models'**, and begin the lesson by discussing the unit's e-safety section, **'How computers and mobile phones affect your sleep'**. Then, complete **Activity 1** by filling in the gaps in the passage.					
Plenary							
5 minutes		Summarise the lesson, recapping the learning objective(s) and key vocabulary used throughout.					
Assessment focus		1.7 Explain the importance of good colour theory and how this impacts aesthetics. 2.7 Explain how heavy use of computers and mobile phones can result in an increase in sleep disorder symptoms in young adults. **Complete Unit 1 Activity 9 and 10 and Unit 2 Activity 1.**					

LearningCurve	The entire course plus specific instructional videos are available on LearningCurve via this link: Click here to open the link.

Unit 1 Activity 10 and Unit 2 Activity 1 can be completed interactively. There is a link to the interactive version in the Activity book on Al-Diwan. You can also access the activities with this link:

Unit 1 Activity 10: https://www.mauthor.com/present/5649490758467584

Unit 2 Activity 1: https://www.mauthor.com/present/6178531139780608

Unit 1 Activity 10 answers:

End of Unit Quiz:

1. People who **design** what buildings look like are called…
    a. Doctors
    b. Architects
    c. Teachers
2. A 3D rectangle is called a…
    a. Cube
    b. Rhombus
    c. Cuboid
3. **One-point perspective** means a drawing has only two vanishing points on the horizon line.
    a. **True**
    b. **False**
4. To build the walls and structure of the house, we use…
    a. Wood
    b. Bricks or blocks
    c. Glass
5. **The three primary colours are**
    a. Purple, blue, orange
    b. Red, green and blue

c. Blue, yellow, pink

Unit 2 Activity 1 answers:

Using the words provided, complete the activity below by filling in the gaps.

daylight | melatonin | activated | sleep | glucose | difficult | blue

When our brains are excited, it means we start to use more blood sugar, also known as **glucose**. The cells in our brains are then **activated** and start to work harder. When our brain is excited, it is more difficult to **sleep**. This is because we need to relax our brains before we sleep. Our sleep-wake cycle is controlled by **melatonin**. When we have less of this, we will find it **difficult** to sleep. The **blue** light from our phones copies **daylight** which means that our melatonin levels are reduced, making it harder for us to sleep.

Grade	7	Subject	DT	Lesson number	5	Week number	2
Unit		**Date**		**Time**		**Page number**	
2		19th January		45 minutes		25-38	
Equipment required				**Learning objectives**			
Textbook Pen/pencil				2.1 Distinguish between block-based programming and text-based programming. 2.2 Describe how algorithms can be used to solve problems.			
Keywords				perspective, MakeCode, block, program, programming language, event block			

Starter/Introduction activity	
5 minutes	Recap the previous lesson and then discuss how planning and drawing helps you design and make a building. Talk about the 3 different views of the building and show the example from the book. Talk about the difference between area (2D shapes) and volume (3D shapes). Also, explain why the number of blocks used to make a 5 x 4 border square is 14 blocks not 20 blocks (students may think it is 5 x 4). See the book for the description.
Main	
10 minutes	Complete **Activity 2** by drawing a building from the **top view, length view, width view and perspective view**. Students can choose to use either **one- or two-point perspective.**
5 minutes	Move onto **'Block-based vs text-based'** and discuss the differences with both and then, complete **Activity 3** (answers below).
20 minutes	Move onto **'Programming and control'** and discuss **algorithms** and **flowcharts**, as well as basic programming blocks. Discuss programming in **Minecraft** and show an example of the blocks. Explain that you can control the agent with block-based and text-based code. Show students some of the code in block-based and **JavaScript** by pressing the code button (C) in the code window of Minecraft.

	Now complete **Activity 4** by using Minecraft to control the agents to move and build a wall one brick high and 5 bricks long.
Plenary	
5 minutes	Summarise the lesson, recapping the learning objectives and key vocabulary used throughout.
Assessment focus	2.1 Distinguish between block-based programming and text-based programming. 2.2 Describe how algorithms can be used to solve problems. **Complete Activities 2, 3 and 4.**
LearningCurve	The entire course plus specific instructional videos are available on LearningCurve via this link: Click here to open the link.

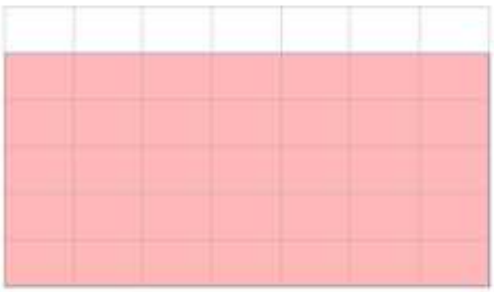
Activity 3 can be completed interactively. There is a link to the interactive version in the Activity book on Al Diwan. You can also access the activity with this link:

Activity 3: https://www.mauthor.com/present/5420956890824704

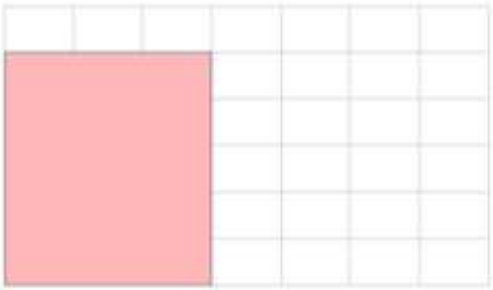
Activity 2 answers:

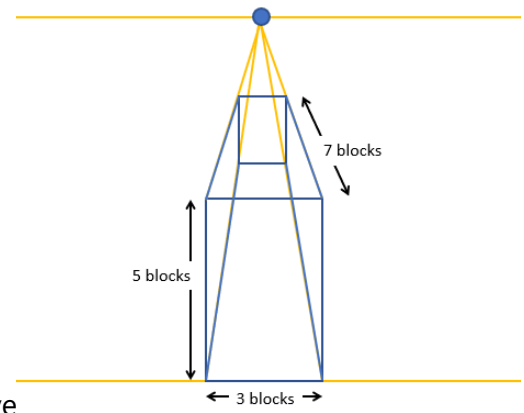
Top view

Length view



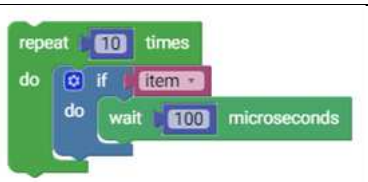
Width view





One-point perspective

Activity 3 answers:

	Commands	Block-based/Text-based
1		**block**

2	`myTurtle.lt(60)`
	`myTurtle.color("red")`
	`triangle()`
		text

3	`void setup() {`
	`}`
	`void loop() {`
	`for (int count = 0; count < 10; count++) {`
	`if (item) {`
	`delayMicroseconds(100);`
	`}`
	`}`
	`}`
		text

4		**block**

5	`player.onChat("come", function () {`
	`agent.teleportToPlayer()`
	`})`
		text

Activity 4 answer:

The robot builds a wall.

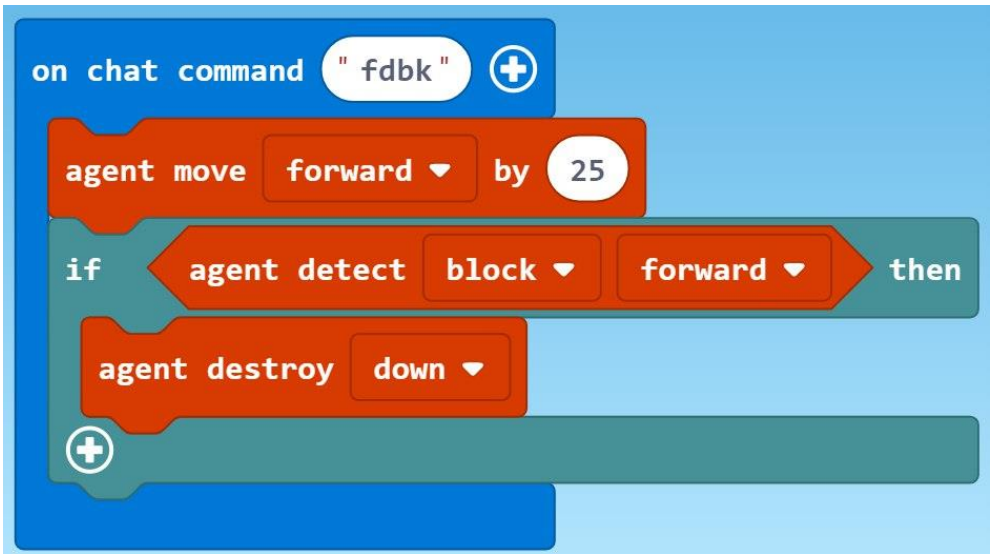
Grade	7	Subject	DT	Lesson number	6	Week number	2
Unit		**Date**		**Time**		**Page number**	
2		19th January		45 minutes		38-40	
Equipment required				**Learning objectives**			
Textbook Pen/pencil				2.3 Apply the use of sequences with algorithms. 2.4 Describe how selection is used in decision making. 2.5 Practise using repetition with programming languages.			
Keywords				sequence, flowchart, block, program, programming language, event block, sequence, flowchart			
Starter/Introduction activity							
5 minutes		Recap the previous lesson by going over coding in Minecraft.					
Main							
15 minutes 10 minutes 10 minutes		Continue with **'Programming and control'** and complete **Activity 5** by using Minecraft to control the agent to move and build a wall two blocks high and 10 blocks long. Follow the instructions in the flowchart. Move onto **'Using conditions'** and show students, with an example, what a condition is. Remind students of conditionals from what they may have done last term in **Python**. Complete **Activity 6** by using Minecraft to get the agent to dig a hole if they walk into a wall. Use the flowchart as a guide and get students to write down the commands used in the box provided (answers below). Next, move onto **'Looping using block-based coding'** and give an example of a loop. Remind students of for-loops and while-loops from Python programming last term. Then, finish off the lesson by completing **Activity 7**. On Minecraft, use the agent to create a square using the loop block and record the commands in the box provided (answers below).						
Plenary							

5 minutes	Summarise the lesson, recapping the learning objectives and key vocabulary used throughout.
Assessment focus	2.3 Apply the use of sequences with algorithms. 2.4 Describe how selection is used in decision making. 2.5 Practise using repetition with programming languages. **Complete Activities 5, 6 and 7.**
LearningCurve	The entire course plus specific instructional videos are available on LearningCurve via this link: Click here to open the link.

Students may perform the task differently, so there may be some variations in the answers. Please use the answers below as a guide.

Activity 5 answers:

Activity 6 answers:



Activity 7 answers: