



## ALMOND HILL JUNIOR SCHOOL MEDIUM TERM PLAN

**TOPIC TITLE/SUBJECT: 3D Modelling**

**YEAR GROUP: 6**

**TERM: Summer**

Vocabulary	Skills	What we already know
<p>TinkerCAD, 2D, 3D, Perspective, View, handles space moving resizing duplicating objects</p> <p>locking/unlocking placeholders grouping hollow objects workplane Plan construct develop evaluate hollow objects, workplane</p>	<p>Learners will develop their knowledge and understanding of <b>using a computer to produce 3D models</b>. Learners will initially familiarise themselves with <b>working in a 3D space, moving, resizing, and duplicating objects</b>. They will then <b>create hollow objects using placeholders and combine multiple objects to create a model</b> of a desk tidy. Finally, learners will <b>examine the benefits of grouping and ungrouping 3D objects</b>, then go on to <b>plan, develop, and evaluate</b> their own 3D model of a building.</p>	<p>Used Scratch and BBC Micro:bit websites to plan, create and evaluate various projects: Selection in physical computing: Exploring conditions and selection using a programmable microcontroller Selection in quizzes: Exploring selection in programming to design and code an interactive quiz. Variables in games: exploring variables when designing and coding a game.</p>
<p><b>Application/ Outcomes</b></p> <p><u>1 Introduction to 3D modelling:</u> introduced to the concept of 3D modelling by creating a range of 3D shapes that they select and move. Examine shapes from a variety of views within the 3D space.</p> <p><u>2 Modifying 3D objects:</u> manipulate 3D objects digitally. Resize objects in 1, 2, and 3 dimensions. Lift and lower 3D objects relative to the workplane and combine two 3D objects to make a new shape. Also, recolour 3D objects.</p> <p><u>3 Make your own name badge:</u> develop their understanding of manipulating digital 3D objects. Rotate objects in 3 dimensions, duplicate objects, and then use grouping and ungrouping to manipulate many objects at once. Combine these skills to create their own 3D name badge. Consider the practicality of 3D printing the objects they have made.</p> <p><u>4 Making a desk tidy:</u> introduced to the dimensions of shapes in Tinkercad which will enable them to accurately resize and move shapes. Shown placeholders which can be used to create holes in objects. Also, duplicate, then resize multiple objects.</p> <p><u>5 Planning a 3D model:</u> see how computer-based 3D design is used in architecture to plan buildings. Explode 3D models of buildings. Look at real world structures and identify the shapes that they include. They will then plan their own 3D building design.</p> <p><u>6 Make your own 3D model:</u> create a computer 3D model based on their design. Evaluate their model and that of another learner, before modifying their own model to improve it.</p>		
<p><b>Other/Cross Curricular Links</b></p> <p><b>Art and design</b> - To improve their mastery of art and design techniques, including drawing, painting, and sculpture with a range of materials</p> <p><b>DT</b> - Generate, develop, model, and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design</p> <p><b>Maths</b> - Recognise, describe, and build simple 3D shapes, including making nets</p>		<p><b>Adaptation for SEND</b></p> <ul style="list-style-type: none"> <li>● Adapted tasks</li> <li>● Adapted resources</li> <li>● Additional support</li> </ul>