

Topic: Digital world – Mindful moments timer

National Curriculum Objectives which are covered in this unit:

Design

- Use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups.
- Generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer- aided design.

Evaluate

- Investigate and analyse a range of existing products.
- Understand how key events and individuals in design and technology have helped shape the world.

Technical knowledge

- Apply their understanding of computing to program, monitor and control their products.

Lesson sequence - include the key concept, L.O. and brief description of lesson

<p>WALT: evaluate existing products.</p> <p>Exploring and evaluating existing timers and different mindfulness products.</p> <p>Success criteria</p> <ul style="list-style-type: none"> • I can compare existing mindfulness products. • I can state the advantages and disadvantages of a product. • I can make links between a product's form and its function. <p>Assessing progress and understanding</p> <p>Pupils with secure understanding indicated by: Stating and/or describing the advantages and disadvantages of existing products (timers). Understanding how</p>	<p>WALT: develop design criteria.</p> <p>Developing design criteria to ensure that a design brief is met.</p> <p>Success criteria</p> <ul style="list-style-type: none"> • I can write design criteria to fulfil a design brief. • I can use research to make a decision about design criteria. • I can use prior knowledge to make a decision about design criteria. <p>Assessing progress and understanding</p> <p>Pupils with secure understanding indicated by: choosing an appropriate time limit for their timer based on their experience in the lesson; contributing to a discussion about themes appropriate to the user.</p>	<p>WALT: program and control a product.</p> <p>Creating code that controls a timer for a mindful moment.</p> <p>Success criteria</p> <ul style="list-style-type: none"> • I can create code that controls a timer. • I can debug my code to ensure that it works. • I can identify coding blocks used for loops. <p>Assessing progress and understanding</p> <p>Pupils with a secure understanding indicated by: creating and debugging the code to make the countdown timer; identifying and using loop blocks to create efficient code.</p> <p>Pupils working at greater depth indicated by: modifying the code and</p>	<p>WALT: develop and communicate ideas.</p> <p>Developing concepts to communicate unique ideas about a product.</p> <p>Success criteria</p> <ul style="list-style-type: none"> • I can annotate a product concept drawing. • I can create a 3D model using modelling materials. • I can discuss my design with a partner. <p>Assessing progress and understanding</p> <p>Pupils with secure understanding indicated by: creating a product concept drawing with annotations; building a prototype using modelling materials that reflects the form of their final product.</p>	<p>WALT: develop ideas through computer-aided design.</p> <p>Using computer-aided design to create a brand identity.</p> <p>Success criteria</p> <ul style="list-style-type: none"> • I can select a theme suitable for mindfulness. • I can design a brand that would appeal to a teacher. • I can use the layer tool on CAD software to improve my design. <p>Assessing progress and understanding</p> <p>Pupils with secure understanding indicated by: creating a brand logo that uses a theme suitable for a product used for mindfulness; selecting elements of the logo that would appeal to the primary user.</p>	<p>WALT:</p> <p>Evaluating designs using a trade exhibition.</p> <p>Success criteria</p> <ul style="list-style-type: none"> • I can explain my product and brand identity during an exhibition. • I can collect feedback from a user. • I can suggest changes to my design based on feedback. <p>Assessing progress and understanding</p> <p>Pupils with secure understanding indicated by: creating an area that fits with their brand identity to promote their product; using</p>
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<p>Micro:bit features could be used as part of a design idea.</p> <p>Pupils working at greater depth indicated by: Analysing and evaluating the advantages and disadvantages of existing products (timers). Suggesting how a Micro:bit timer could be useful, including any additional Micro:bit functions/features that could be included to enhance the timer (e.g. LED pattern when the timer finishes).</p>	<p>Pupils working at greater depth indicated by: reasoning about key features of the design and giving specifics about how a teacher might use the product in a lesson.</p>	<p>extending their program to improve the user experience; could change what happens when the timer ends – adding a sound or flashing icon.</p>	<p>Pupils working at greater depth indicated by: adapting the ideas seen in the video to fit their design, for example, adding to the cube shape or altering the lengths of sides to create different shapes; describing their prototype ideas and giving reasons for their choices.</p>	<p>Pupils working at greater depth indicated by: justifying choices about which ideas to use and which to discard; asking for opinions to assist in their decision-making when creating a brand logo.</p>	<p>feedback from the event to suggest changes to their design.</p> <p>Pupils working at greater depth indicated by: using the brand identity persuasively to promote their product; making improvements to their design which show an understanding of what the user requires and why.</p>
<p><u>Prior learning</u></p> <p><i>List year groups and topics with connected learning</i></p>	<p>Year 3 – Computing</p>				
<p><u>Future learning</u></p> <p><i>List year groups and topics with connected learning</i></p>	<p>Year 5 Structures: Bridges Year 6 Mechanical systems: Automata toys Year 6 Electrical systems: Steady hand</p>				
<p><u>Key vocabulary to be explicitly taught</u></p>	<p>advantage annotate assemble aesthetic block brand brand identity bug computer-aided design (CAD) clipart coding debug design develop disadvantage display ergonomic evaluate exhibition feedback form function join logo loop mindfulness model net program prototype research script sketchpad test timer user variable</p>				
<p><u>Cross-curricular links</u></p>	<p>RSE</p> <p>Mental wellbeing Pupils should know:</p> <ul style="list-style-type: none"> Simple self-care techniques, including the importance of rest, time spent with friends and family and the benefits of hobbies and interests. <p>Computing Pupils should be taught to:</p> <ul style="list-style-type: none"> Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts. <p>Maths Year 3: Geometry – properties of shapes</p>				

	<p>Pupils should be taught to:</p> <ul style="list-style-type: none">• Draw 2-D shapes and make 3-D shapes using modelling materials; recognise 3-D shapes in different orientations and describe them.
<p><u>Enrichment</u></p> <p><i>Give visit/visitor/first hand experience and focus</i></p>	
<p><u>Useful websites/resources</u></p>	<p>Lower KS2 DT Lesson Plan Digital An Exhibition</p>