

# Year 8 - Helicopter

NOVICE	<ul style="list-style-type: none"><li>✓ They carry out basic investigation into the work of others.</li><li>✓ Pupils work safely, demonstrating a low level of skill with a few tools and materials (including CAM where appropriate).</li><li>✓ They make a prototype of low quality and make a single measurement for quality control purposes.</li><li>✓ Pupils undertake a limited evaluation of their final prototype, identifying at least one feature of the prototype that needs to be modified.</li></ul>
CAPABLE	<ul style="list-style-type: none"><li>✓ Their investigation of the work of others has a few influences on their design thinking.</li><li>✓ Pupils work safely, demonstrating an adequate level of skill, and mostly using the correct tools, materials and equipment (including CAM where appropriate).</li><li>✓ They carry out a few measurements and test the prototype for quality control purposes. They make a prototype of sufficient quality, which meets at least one of the needs of the user/client.</li><li>✓ Pupils test and evaluate a few features of the design.</li><li>✓ They consider at least one point of feedback from a third party and identify a few modifications to the design which were a result of testing, analysis and evaluation.</li></ul>
EXPERT	<ul style="list-style-type: none"><li>✓ They investigate the work of others and state how this had some influence on their design thinking.</li><li>✓ Pupils work safely, demonstrating a good level of skill and using the correct tools, materials and equipment (including CAM where appropriate).</li><li>✓ They carry out some measurement and testing for quality control purposes.</li><li>✓ They make a prototype of sufficient quality, which meets some of the needs of the user/client.</li><li>✓ Pupils test and evaluate all the features of the design.</li><li>✓ They consider a few points of feedback from third parties. They identify some modifications to the design which were a result of testing, analysis and evaluation.</li></ul>

# Year 8 - Desk Clock

<p style="text-align: center;"><b>NOVICE</b></p>	<ul style="list-style-type: none"> <li>✓ Pupils can identify basic mechanisms.</li> <li>✓ Pupils work safely, demonstrating a low level of skill with a few tools and materials.</li> <li>✓ They demonstrate little consistency when marking out and shaping the corners of the clock.</li> <li>✓ They make a prototype of low quality and make a single measurement for quality control purposes.</li> <li>✓ Pupils undertake a limited evaluation of their final prototype, identifying at least one feature of the prototype that needs to be modified.</li> </ul>
<p style="text-align: center;"><b>CAPABLE</b></p>	<ul style="list-style-type: none"> <li>✓ Pupils can identify and begin to adapt basic mechanisms.</li> <li>✓ Their investigation of the work of others has a few influences on their design thinking.</li> <li>✓ Pupils work safely, demonstrating an adequate level of skill, and mostly using the correct tools, materials and equipment.</li> <li>✓ They demonstrate some consistency when marking out and shaping the corners of the clock.</li> <li>✓ They carry out a few measurements and test the prototype for quality control purposes.</li> <li>✓ They make a clock of sufficient quality, which meets at least one of the needs of the user/client.</li> <li>✓ Pupils test and evaluate a few features of the design.</li> <li>✓ They consider at least one point of feedback from a third party and identify a few modifications to the design which were a result of testing, analysis and evaluation.</li> </ul>
<p style="text-align: center;"><b>EXPERT</b></p>	<ul style="list-style-type: none"> <li>✓ Pupils can identify and adapt both basic and complex mechanisms.</li> <li>✓ They investigate the work of others and state how this had some influence on their design thinking.</li> <li>✓ Pupils work safely, demonstrating a good level of skill and using the correct tools, materials and equipment.</li> <li>✓ They demonstrate consistency when marking out and shaping the corners of the clock.</li> <li>✓ They carry out some measurement and testing for quality control purposes.</li> <li>✓ They make a prototype of sufficient quality, which meets some of the needs of the user/client.</li> <li>✓ Pupils test and evaluate all the features of the design.</li> <li>✓ They consider a few points of feedback from third parties. They identify some modifications to the design which were a result of testing, analysis and evaluation.</li> </ul>

# Year 8 - Bridge Design

<b>NOVICE</b>	<ul style="list-style-type: none"> <li>✓ Pupils can name and identify basic forces.</li> <li>✓ They carry out basic investigation into the work of others.</li> <li>✓ They produce a simple design brief and design specification, explaining a few criteria in the design specification.</li> <li>✓ They generate a few design ideas with obvious design fixation, labelling these with a few descriptive comments about functionality and aesthetics.</li> <li>✓ They use a design strategy and communicate their ideas using one or two techniques. They can use one or two 2D/3D modelling techniques (including CAD) to test if their design idea meets one of the requirements.</li> <li>✓ They make a prototype of low quality and make a single measurement for quality control purposes.</li> <li>✓ Pupils undertake a limited evaluation of their final prototype, identifying at least one feature of the prototype that needs to be modified.</li> <li>✓ Pupils can work in teams with some effectiveness.</li> </ul>
<b>CAPABLE</b>	<ul style="list-style-type: none"> <li>✓ Pupils can name and identify basic forces and explain how they act on structures.</li> <li>✓ Their investigation of the work of others has a few influences on their design thinking.</li> <li>✓ Pupils can produce an adequate design brief that shows some relevance to the context and includes at least one user/client need or want.</li> <li>✓ They produce a design specification with several criteria, justifying a few criteria in terms of the needs and wants of the user/client. Their specification has some influence on subsequent design stages.</li> <li>✓ They generate a few imaginative design ideas, although there may be some design fixation. They label their ideas with a few comments about functionality, aesthetics and innovation.</li> <li>✓ They indicate at least one way that their investigative work has influenced their design thinking.</li> <li>✓ They use a few techniques to carry out experimentation and use some techniques to communicate ideas.</li> <li>✓ Pupils use 2D/3D modelling techniques (including CAM) to develop their ideas and use some methods to test that their ideas meet a few of the requirements.</li> <li>✓ They carry out a few measurements and test the prototype for quality control purposes.</li> <li>✓ They make a clock of sufficient quality, which meets at least one of the needs of the user/client.</li> <li>✓ Pupils test and evaluate a few features of the design.</li> <li>✓ They consider at least one point of feedback from a third party and identify a few modifications to the design which were a result of testing, analysis and evaluation.</li> <li>✓ Pupils can work effectively in teams and independently overcome some issues that arise within the team.</li> </ul>
<b>EXPERT</b>	<ul style="list-style-type: none"> <li>✓ Pupils can name and identify basic and some complex forces. They can identify how they act on structures and explain how they can be controlled.</li> <li>✓ They investigate the work of others and state how this had some influence on their design thinking.</li> <li>✓ They carry out some measurement and testing for quality control purposes.</li> <li>✓ Pupils can produce an adequate design brief that shows some relevance to the context provided and includes some user/client needs and wants.</li> <li>✓ They produce a design specification with several criteria, justifying several criteria in terms of the needs and wants of the user/client.</li> <li>✓ They generate some imaginative design ideas, although there may be a degree of design fixation. They label almost all their ideas with some comments about functionality, aesthetics and innovation. They show how their investigative work influenced their design thinking.</li> <li>✓ They explore the use of a few different design strategies. Pupils use some 2D/3D modelling techniques (including CAD) to develop their ideas and use a variety of methods to test that their ideas meet some of the requirements.</li> <li>✓ They make a prototype of sufficient quality, which meets some of the needs of the user/client.</li> <li>✓ Pupils test and evaluate all the features of the design.</li> <li>✓ They consider a few points of feedback from third parties. They identify some modifications to the design which were a result of testing, analysis and evaluation.</li> <li>✓ Pupils can work very effectively in teams and independently overcome all issues that arise within the team.</li> </ul>