

Year 9 - Phone Holder

NOVICE	<ul style="list-style-type: none">✓ Pupils work safely, demonstrating a low level of skill with a few tools and materials (including CAM where appropriate).✓ They make a phone holder of low quality and make a single measurement for quality control purposes.✓ Pupils make a limited evaluation of their final prototype, identifying at least one feature of the prototype that needs to be modified.
CAPABLE	<ul style="list-style-type: none">✓ Pupils work safely, demonstrating an adequate level of skill and mostly using the correct tools, materials and equipment.✓ They carry out some measurements and a few tests on the prototype for quality control purposes.✓ They make a phone holder of sufficient quality, which meets a few of the needs of the user/client.✓ The phone holder could be commercially viable with further development.✓ They identify a few modifications to the design which were a result of testing, analysis and evaluation.
EXPERT	<ul style="list-style-type: none">✓ Pupils work safely, demonstrating a good and consistent level of skill and using the correct tools, materials and equipment (including CAD where appropriate).✓ They carry out detailed quality control and apply some tolerances when making their prototype.✓ They make a prototype of good quality, which meets most of the needs of the user/client. The prototype could be commercially viable.✓ They identify modifications made to the design which were a result of testing, analysis and evaluation, describing these in detail.

Year 9 - Street Furniture

NOVICE	<ul style="list-style-type: none"> ✓ They identify a user/client and at least one of their needs and wants. ✓ They carry out basic investigation into the work of others. ✓ They produce a simple design brief and design specification, explaining a few criteria in the design specification. ✓ They generate a few design ideas with obvious design fixation, labelling these with a few descriptive comments about functionality and aesthetics. ✓ They can use one or two 2D/3D modelling techniques (including CAD if appropriate) to communicate one design. ✓ They make a prototype(s) of low quality. ✓ Pupils test one feature of their prototype against a design brief or design specification and make a limited evaluation of their final prototype, identifying at least one feature of the prototype that needs to be modified.
CAPABLE	<ul style="list-style-type: none"> ✓ Pupils can identify a user/client that is partially relevant to the provided context, investigating some of the user/client's needs and wants, and explaining a few of these. ✓ They investigate the work of others and state how this had some influence on their design thinking. ✓ Pupils can explain a few of the social and economic effects that their design possibilities could have on society. ✓ Pupils can produce an adequate design brief that shows some relevance to the context provided and includes a few of the user/client's needs and wants. ✓ They produce a design specification with several criteria, justifying some criteria in terms of the needs and wants of the user/client. ✓ They generate some imaginative design ideas, although there may be a fair degree of design fixation. ✓ They label most of their ideas with some comments about functionality, aesthetics and innovation. They indicate a few ways that their investigative work has influenced their design thinking. ✓ Pupils use 3D modelling techniques (including CAD if appropriate) to develop and communicate some design ideas. ✓ They make a prototype(s) of sufficient quality, which meets a few of the needs of the user/client. ✓ The prototype could be commercially viable with further development. ✓ There is some evidence of analysis and evaluation at some different stages of the project and evidence of iterative design. ✓ Pupils test some of the main features of the design against the design brief and design specification and analyse and evaluate their final prototype. ✓ They consider a few points of feedback from third parties. ✓ They identify a few modifications to the design which were a result of testing, analysis and evaluation.
EXPERT	<ul style="list-style-type: none"> ✓ Pupils identify a user/client that is mostly relevant to the context, investigate the user/client's needs and wants and explain several of these. ✓ They investigate the work of others in detail and show how this influenced their design thinking. ✓ Pupils can explain several social and economic effects that the design possibilities could have on society. ✓ Pupils produce a good design brief that has clear links to the context and considers several of the user/client needs and wants. ✓ They produce a detailed design specification, justifying almost all of the criteria in terms of the needs and wants of the user/client. ✓ They generate imaginative and creative design ideas which mainly avoid design fixation. ✓ They label their ideas with comments about functionality, aesthetics and innovation. ✓ Pupils successfully use 3D CAD modelling to generate, communicate and test a range of ideas ✓ They make a prototype of good quality, which meets most of the needs of the user/client. ✓ The prototype could be commercially viable. ✓ There is evidence of analysis and evaluation at several different stages of the project and evidence of iterative design. ✓ Pupils test most features of the design against the design brief and design specification and analyse and evaluate their final prototype. ✓ They consider some feedback from third parties. ✓ They identify modifications made to the design which were a result of testing, analysis and evaluation, describing these in detail. ✓ They identify some changes to, or influences on, their design brief, design specification and manufacturing specification, which were a result of testing, analysis and evaluation.

Year 9 - Mood Light

NOVICE	<ul style="list-style-type: none">✓ Pupils work safely, demonstrating a low level of skill with a few tools and materials.✓ They make a working electronics project of low quality and know how to test one aspect of it.✓ Pupils can explain how some of the product works.✓ Pupils make a limited evaluation of their final prototype, identifying at least one feature of the prototype that needs to be modified.
CAPABLE	<ul style="list-style-type: none">✓ Pupils work safely, demonstrating an adequate level of skill and mostly using the correct tools, materials and equipment.✓ Pupils make a working electronics project of good quality and know how to test some aspects of it.✓ Pupils can explain how the circuit works and what the function of the components is.✓ They carry out some measurements and a few tests on the prototype for quality control purposes.✓ They identify a few modifications to the design which were a result of testing, analysis and evaluation.
EXPERT	<ul style="list-style-type: none">✓ Pupils work safely, demonstrating a good and consistent level of skill and using the correct tools, materials and equipment.✓ Pupils make a working electronics project of high quality and know how to test many aspects of it.✓ Pupils can explain how the circuit works and what the function of the components is. Pupils can explain how they would modify the circuit to improve its functionality.✓ They carry out detailed quality control and apply some tolerances when making their prototype.✓ They identify modifications made to the design which were a result of testing, analysis and evaluation, describing these in detail.

Year 9 - Travel Board Game

<p style="text-align: center;">NOVICE</p>	<ul style="list-style-type: none"> ✓ Students consider sustainability in their designs and can state the '6Rs'. ✓ They use a single design strategy and communicate their ideas using one or two techniques. ✓ They can use one or two 2D/3D modelling techniques (including CAD if appropriate) and use one method to test if their design idea meets one of the requirements. ✓ They select some of the materials or components to make their prototype (which may not be appropriate) and produce simple manufacturing instructions. ✓ Pupils work safely, demonstrating a low level of skill with a few tools and materials (including CAM where appropriate). ✓ They produce a prototype which meets some of the needs of the client. ✓ They can explain the main categories of timbers.
<p style="text-align: center;">CAPABLE</p>	<ul style="list-style-type: none"> ✓ Students consider sustainability in their designs and can articulate what is meant by the '6Rs'. ✓ They generate some imaginative design ideas, although there may be a fair degree of design fixation. They label most of their ideas with some comments about functionality, aesthetics and innovation. ✓ They indicate a few ways that their investigative work has influenced their design thinking. ✓ They use some different techniques to carry out experimentation and communicate ideas and explore the use of at least two different design strategies. ✓ Pupils use some 2D/3D modelling techniques (including CAM if appropriate) to develop their ideas and use a range of methods to test that their design ideas meet some of the requirements. ✓ They carry out some research into the working properties and availability of a few materials and select the materials and components to make their prototype, some of which are suitable for the purpose. ✓ Pupils work safely, demonstrating an adequate level of skill and mostly using the correct tools, materials and equipment (including CAM where appropriate). ✓ They produce a prototype which meets most of the needs of the client. ✓ Can explain the categories of timbers, including key properties specific types of wood.
<p style="text-align: center;">EXPERT</p>	<ul style="list-style-type: none"> ✓ Students consider sustainability/lifecycle assessment in their designs and can articulate and apply what is meant by the '6Rs'. ✓ They generate imaginative and creative design ideas which mainly avoid design fixation. They label their ideas with comments about functionality, aesthetics and innovation. They continue their investigative work beyond the initial stages of the project and use this to generate some new ideas. ✓ They use a wide range of techniques to both experiment with and communicate their ideas. ✓ Pupils use a range of 2D/3D modelling techniques (including CAD where appropriate) to develop their ideas, producing good models. They use a variety of methods to test that their ideas meet almost all of the requirements. ✓ They carry out detailed research into the working properties and availability of materials and select the materials to make their prototype, almost all of which are appropriate. They justify their choices of manufacturing method and processes. Pupils work safely, demonstrating a good and consistent level of skill and using the correct tools, materials and equipment (including CAD where appropriate). ✓ They produce a prototype which meets all of the needs of the client.