

YEAR 8 PROBLEM SOLVING & CAD KNOWLEDGE ASSESSMENT GRID 2022-2023

FOUNDATION	
Health and Safety	Is able to follow the health and safety rules within the workshop environment with some support if needed.
Designing and Communicating	With support you can explain what you are being asked to digitally prototype.
Practical skills, knowledge and accuracy	Your flow chart for your programme is simple and incomplete
	Your programme is not finished and contains several errors
	You understand why we use CAD to help us with programming
	With support you can explain what is meant by the term CAD, and set up an Onshape account.
	With support you can use the tools to draw basic shapes and extrude them into 3D.
Analysis and Evaluation	You have no evaluation

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INTERMEDIATE

Health and Safety	Understand the health and safety rules within the workshop environment and be able to explain why they are required.
Designing and Communicating	You can explain what you are being asked to programme.
Practical skills, knowledge and accuracy	You have a simple but complete flowchart with some minor errors
	Your finished programme is complete with some small errors. You have needed some support and have utilised new skills
	You understand how virtual programming can be used to make and test new products
	You can explain the meaning of CAD, and set up your own account.
	You are able to successfully follow the instructions provided to develop an understanding of the different tools available on Onshape.
	You have achieved the Bronze and Silver challenges
Analysis and Evaluation	You are able to verbally explain your programme and what has gone well and what can be improved.
	You are able to reflect and evaluate the skills you have learnt.

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HIGHER	
Health and Safety	Fully appreciates the health and safety rules within the workshop environment and is able to explain confidently why they are required.
Designing and Communicating	You can explain what you are being asked to programme and why.
Practical skills, knowledge and accuracy	You have a complete programme with no errors
	You have independently developed and programmed your circuit and can articulate your decisions with this exercise.
	You understand how virtual programming can be used to make and test new products and the benefits of virtual testing over physical.
	You can explain the meaning of CAD, and set up your own account. You understand how the use of CAD and software like Onshape can be useful in the designing process.
	You are able to successfully follow the instructions provided to develop an understanding of the different tools available on Onshape.
	You have achieved the Bronze, Silver and Gold challenges
	You are able to change the aesthetics of sections of your drawing by changing the colour.
Analysis and Evaluation	You have evaluated your programme and can explain how it works and highlight areas that may need further development
	You are able to reflect and evaluate the skills you have learnt.

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EXCEPTIONAL

Health and Safety	Fully appreciates the health and safety rules within the workshop environment and is able to confidently explain the hazards and risks presented.
Designing and Communicating	You can articulate the design of your programme and fully explain your choices in your flow chart.
Practical skills, knowledge and accuracy	You have a complete programme free from errors and can explain your thinking in terms of your flow chart
	You have independently developed and programmed your circuit and can articulate your decisions with this exercise.
	You can fully explain the need for digital programming and how you have utilised its benefits in this project.
	You can explain the meaning of CAD, and set up your own account. You understand how the use of CAD and software like Onshape can be useful in the designing process.
	You are able to identify through independent research other CAD software, and how it is used in the design industry.
	You are able to successfully follow the instructions provided to develop an understanding of the different tools available on Onshape.
	You have achieved the Bronze, Silver and Gold challenges
Analysis and Evaluation	You have evaluated your programme and can explain how it works and highlight areas that may need further development
	You are able to reflect and evaluate the skills you have learnt.