

DT Year 10	Emerging	Developing	Securing	Mastering
Design	Attempts to use two-dimensional (Techsoft 2D Design) and three-dimensional (SketchUp) graphics to communicate the shape of a chocolate bar. The work is simplistic or contains technical and/or aesthetic mistakes.	Uses two-dimensional (Techsoft 2D Design) and three-dimensional (SketchUp) graphics with some success to communicate the shape of a chocolate bar. The design shows a basic understanding of CAD tools, though there may be inconsistencies in proportions, alignment, or detail. Some aesthetic or technical issues are present, but the overall intent is clear.	Uses two-dimensional (Techsoft 2D Design) and three-dimensional (SketchUp) graphics effectively to produce a well-considered and visually appealing chocolate bar design. The work demonstrates good technical accuracy and thoughtful design choices. Minor differences between the sketch and final design are purposeful and show an effort to refine the concept.	Uses two-dimensional (Techsoft 2D Design) and three-dimensional (SketchUp) graphics very effectively and creatively to create an attractive shape for a chocolate bar. The work is complex and refined. Any differences between the final design and the sketch can be accounted for as improvements to the design.
Make	May correctly identify one or two of the tools/materials they have used to manufacture the plug (positive) and the vacuum-formed chocolate mould (negative) in the workshop. Their description of the manufacturing process is simplistic and lacks important detail. May offer aspects to improve about their work.	Identifies some of the tools, machines, or materials used in the manufacturing of the plug (positive) and the vacuum-formed chocolate mould (negative). Description of the process shows a basic understanding but lacks clarity and detail. Attempts to reflect on improvements are limited or vague.	Identifies most of the tools, machines, and materials used in the manufacturing process with reasonable accuracy. Description is clear and includes relevant details about each stage of production. Makes thoughtful observations about how their work could be improved in future lessons.	Correctly identifies all of the tools, machines and materials they have used to manufacture the plug (positive) and the vacuum-formed chocolate mould (negative). Describes the manufacturing process accurately, providing great detail. Successfully identifies aspects that they could improve upon in their work during subsequent lessons.

Evaluate	Needs support in creating a mind map to analyse a given contextual challenge. The work is not very detailed.	Creates a mind map that shows a basic attempt to analyse the given contextual challenge. Some relevant ideas are included, but the work lacks depth and may rely on teacher support. Connections between concepts are limited or unclear.	Produces a clear and well-structured mind map that explores the contextual challenge in a meaningful way. They have applied theoretical content from lessons with growing independence and have made relevant links between different aspects of the context, showing a developing analytical approach.	Independently and effectively uses the theoretical content studied in lessons to create a mind map that explores the different aspects and ramifications of a given context.
Exploring Ideas	Attempts to embed technical knowledge of materials into an answer that might lack detail and accuracy.	Shows some understanding of technical knowledge related to polymers, but their answers may lack clarity, detail, or accuracy. There is evidence of basic recall, but limited application or explanation of key concepts.	Demonstrates a solid understanding of polymers by answering the questions with reasonable accuracy and appropriate detail. Their responses show a good grasp of technical terminology and an ability to apply knowledge to the context of the questions.	Answers the question with accuracy and detail.

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Design	Basic selection and partially appropriate use of graphical techniques to communicate design ideas. Basic selection and partially appropriate use of computer-aided design (CAD) techniques to communicate design ideas. Basic selection and partially appropriate use of written techniques to communicate design ideas.	Reasonable selection and mostly appropriate use of graphical techniques to communicate design ideas. Reasonable selection and mostly appropriate use of computer-aided design (CAD) techniques to communicate design ideas. Reasonable selection and mostly appropriate use of written techniques to communicate design ideas.	Relevant selection and generally appropriate use of graphical techniques to communicate design ideas. Relevant selection and generally appropriate use of computer-aided design (CAD) techniques to communicate design ideas. Relevant selection and generally appropriate use of written techniques to communicate design ideas.	Considered selection and fully appropriate use of techniques to communicate design ideas. Considered selection and fully appropriate use of computer-aided design (CAD) techniques to communicate design ideas. Considered selection and fully appropriate use of written techniques to communicate design ideas.
Make	Basic selection of materials that are generally appropriate for the chosen prototype. Show limited understanding of the material properties of the materials used in the prototype.	Reasoned selection of materials that are mostly appropriate for the chosen prototype. Shows a developing understanding of the material properties of the materials used in the prototype.	Deliberate selection of materials that are mostly appropriate for the chosen prototype. Show a generally sound understanding of material properties of the materials used in the prototype.	Effective selection of materials that are fully appropriate for the chosen prototype. Shows a fully sound understanding of material properties of the materials used in the prototype.
Evaluate	Superficial analysis of the prototype developed in response to the contextual challenge, taking into account the end user and product specification, and showing a partially considered approach to testing against measurable	Adequate analysis of the prototype developed in response to the contextual challenge, taking into account the end user and product specification, and showing a somewhat considered approach to testing against measurable	Generally developed analysis of the prototype developed in response to the contextual challenge, taking into account the end user and product specification, and showing a generally considered approach to testing against	Fully developed analysis of the prototype developed in response to the contextual challenge, taking into account the end user and product specification, and showing a fully considered approach to testing against measurable criteria.

	criteria. Basic evaluation of the prototype, taking into account the intended purpose of the prototype, including its sustainability through a life cycle analysis and drawing partially appropriate conclusions from testing against measurable criteria.	criteria. Reasonable evaluation of the prototype, taking into account the intended purpose of the prototype, including some consideration of its sustainability through a life cycle analysis and drawing reasonably appropriate conclusions from testing against measurable criteria.	measurable criteria. Competent evaluation of the prototype, taking into account the intended purpose of the prototype, including its sustainability through a life cycle analysis and drawing generally appropriate conclusions from testing against measurable criteria.	Effective evaluation of the prototype, taking into account the intended purpose of the prototype, including its sustainability through a life cycle analysis and drawing fully appropriate conclusions from testing against measurable criteria.
Exploring Ideas	Basic design brief that demonstrates a simplistic response to the contextual challenge, addressing some of the investigated needs and wants of the user. Limited range of specification points that are basic and partially measurable, based on a superficial investigation of research in relation to the contextual challenge. Basic justification of the performance requirements for the product in relation to the contextual challenge.	A broadly appropriate design brief that demonstrates a considered response to the contextual challenge, addressing a reasonable number of the investigated needs and wants of the user. A moderate range of specification points that are somewhat realistic and partially measurable, based on a reasonably relevant investigation of research in relation to the contextual challenge. An adequate justification of the performance requirements for the product in relation to the contextual challenge.	Generally sound design brief that demonstrates a coherent response to the contextual challenge, addressing many of the investigated needs and wants of the user. Mostly developed range of specification points that are realistic and mostly measurable, based on a mostly relevant investigation of research in relation to the contextual challenge. Generally sound justification of the performance requirements for the product in relation to the contextual challenge.	Fully sound design brief that demonstrates a realistic response to the contextual challenge, addressing most of the investigated needs and wants of the user. Fully developed range of specification points that are realistic, technical and measurable, based on a fully relevant investigation of research in relation to the contextual challenge. Fully sound justification of the performance requirements for the product in relation to the contextual challenge.

