Decision by OFQUAL for GCSE Design and Technology qualifications
50% examination, 50% NEA. Permit exam boards to accept mock-ups and/or clear/detailed intentions of prototypes. Permit demonstration of using machinery / tools / processes. **Rationale:** To reduce pressures on teaching time and to accommodate potential on-going public health restrictions.

EDUQAS approach to NEA work for 2021 Design and Technology GCSE

The following guide has been prepared to support teachers in delivering the requirements of Manufacturing a Prototype for NEA work Component 2.

We are in difficult times and consultation with the regulators has been constant during this period and it is worth centres remembering that this is likely to continue due to the Covid 19 situation. We will promptly inform centres of any further changes as a consequence of ongoing discussions with the regulator, and these will be communicated to centres via examinations officers, the secure website and the public website.

Ofqual has decided to allow exam boards to accept a model/mock-up prototype instead of the finished product.

For example:

Design Engineering: Electronic simulation of a student designed circuit, may breadboard construction, supported by card 2D 3D model of the product.

Fashion and Textiles: We would accept a toile in calico or an appropriate substitute fabric, with samples to indicate all construction details.

Product Design: This could be a blue foam sculptured 3D outcome, with some support details of joining processes, or specific form details. The outcome could also include some form of surface embellishment to reflect the true qualities of the product or outcome.

Candidates are required to present their final idea in the form of a prototype, model or concept. This can include card, CAD, CAM etc. to demonstrate the intended fully functioning product.

Note: The focus during the iterative design journey must be on the initial student developed problem/brief and not on the model/mock-up/prototype outcome .

Assessment Criteria		Marks
(a)	Identifying and investigating design possibilities.	10
(b)	Developing a design brief and specification.	10
(c)	Generating and developing design ideas.	30
(d)	Manufacturing a Prototype	30
(e)	Analysing and evaluating design decisions and prototypes.	20

The NEA requirement is a sustained activity that involves an iterative approach to a contextual challenge set by the board for GCSE and AS, and in the case of Advanced Level set by the individual candidate.

During the iterative process it is essential that the candidates focus on the designing of the product as if there were no restrictions due to the present situation. The model/mock-up/ prototype outcome must not influence the iterative design work of the individual.

Currently the contextual challenge within the specification requires a learner to demonstrate their knowledge and understanding of the following designing and making principles.

In the context of a sustained design and make activity learners are required to:

- work within a context which will inform the outcome
- identify and understand client and user needs
- write a design brief and specifications
- identify opportunities etc.

There is no change in the expectation for assessment for this part of the specification.

The greatest change or expectation is in the making, where presently candidates in relation to at least one material or component/system(s) are required to:

- select and work with appropriate materials and components to produce a prototype
- use appropriate and accurate marking out methods; work within tolerances; understand efficient cutting and minimise waste
- use specialist techniques and processes to shape, fabricate, construct and assemble a high-quality prototype, as appropriate to the materials and/or components being used
- use appropriate surface treatments and finishes.

Changes/adaptations to Assessment Criteria 2021 only

(a) Identifying design possibilities

No change in content or requirements for 2021

(b) Developing a design brief and specification

No change in content or requirements for 2021

(c) Generating and developing design ideas

No change in content or requirements for 2021

(d) Manufacturing a Prototype

Manufacturing - schedule of making / manufacturing

No change - a candidate should write a detailed plan of manufacture using original material, fixtures, CAM programmes etc specified in their design work.

Change Mock-ups models and/or clear/detailed intentions of prototypes. We know that this is the area that is going to require the changes in terms of the function and look of the outcome.

The final outcome(s) must show a clear intention of the designed product, based on the Brief and Specification and a true reflection of its final look and expectation

Mock-ups models and/or clear/detailed intentions of prototypes using any material or non-material.

These could be in the form of one or more of the following:

- 3D Printed models
- 2D Laser models
- CAD
- Blue foam
- Card modelling
- Paper modelling – e.g to indicate details of pleats or tucks in fabrics or forms of fabric manipulation
- Deconstructing existing products to act as a skeleton for a model construction
- i.e. using the leadscrew in a glue stick to show up and down movement on a stool
- Toile in calico or substitute material- – hand/machine sewn
- Hand or machine sewn samples in chosen fabrics to indicate final construction processes and style details
- Samples of decorative techniques, for example appliqué using bondaweb, hand sewn or otherwise but could include additional details such as beading
- Joining process of intentions to the actual product
- Circuit diagrams
- Flow diagrams
- 3D simulation
- 2D simulation
- Presentation boards
- Circuit simulations
- Layering of materials to create a 3D form
- Candidates should where possible indicate appropriate surface finishes to the modelled material to represent the design requirement proposed.

(e) Analysing and evaluating design decisions and prototypes.

No Change in content or requirements for 2021

Permit demonstration of using machinery / tools / processes.

Teachers are encouraged to demonstrate the use of machinery / tools and processes to inform candidates' knowledge required to fulfil process, not just for the plan of manufacture but also to candidates to be able answer question on specific manufacturing processes in the examination.