Notes and guidance: NEA

The following guide breaks down the key areas of each section of the GCSE Design and Technology NEA. It gives you hints and tips that you can pass on to your students to ensure they fully understand the criteria and how best to record their learning as it develops through the NEA project.

Section A – Identifying and investigating design possibilities

Top tips

- The contextual challenge your students decide to follow is very important. Please visit Secure Key Materials on eAQA after 1 June each year to find the three that you and your students can choose from. This should be their starting point. Make sure the contextual challenge is investigated fully and encourage your students to remain focused on ensuring all research is relevant. Students will not gain marks for investigating things that do not then inform their decisions, so investigation should only happen when your students need to find something out. Do not encourage them to jump through unnecessary hoops by creating a set list of research tasks.

- This section must be ongoing so encourage students to record any investigation as it happens. This means that portfolios will not follow a set pattern and investigation work should be evident at all stages. Section A rewards students for the questions they ask themselves and the answers they find, so make sure they write them all down.

- There is a real focus on using a client. Ask your students to choose one that they have a good level of contact with if possible, as this will make it much easier and more likely that they will use this client throughout their NEA and not just at the beginning.

- Students should try to show a range of methods of investigation. They should carry out primary research, reflect on the impact on society and investigate the work of others. This could be anyone who has inspired them and does not need to be one of the designers named in the specification.

- Remember that investigation work doesn't need to follow a particular format. Tell your students to only do investigation work that is relevant to the task, ensure that everything they do is because they want to find something out.

Section B – Producing a design brief and specification

Top tips

- Remember that this section is not just about writing a design brief and writing a specification, it is about how these are used throughout the portfolio. Make sure students keep referring back to them throughout their designing, development and evaluation. We want to see that the specification is used throughout to assess how ideas are developing.

- Make sure that the design brief and specification are developed as a result of the investigation work completed.

- The specification must be meaningful, well justified and the criteria should be measurable. This will help when using the specification throughout the portfolio to evaluate ideas etc.

- Encourage students to focus on the clients' or users' needs and wants.

- Don't encourage students to over structure their work and do not use writing frames as this contravenes the JCQ guidance on NEA. Tell students to only write specification points that can be used throughout the portfolio to guide decisions.

- As investigation work goes on, don't worry if the specification criteria change throughout the portfolio. Don't ask students to redo work, they should simply amend their specification pointing out the justification for why these amendments were necessary. This will create clear evidence of thinking and the students' ability to respond to what they are learning during the process.

Section C – Generating design ideas

Top tips

- Students that do well in this section show imagination, creativity and innovation, and push themselves to explore more unusual ideas. Encourage students to take risks knowing that providing they still demonstrate a high level of skill in making; the final prototype does not necessarily need to be the finished idea. It is more important that students show originality and innovation.

- Students should annotate their designs and explain their points. They should relate their designs to the specification taking account of the clients' thoughts and consider their suitability.

- There is no requirement for a set number of individual design ideas so don't tell students that they need to do a certain amount before they can focus on one. There does not need to be a huge range of ideas, but we do want to avoid design fixation, so ensure that students are responsive to the needs and wants of the client and allow their ideas to change according to what they learn.

- Don't allow the quality of the sketch to become more important than the quality of the idea.

Section D – Developing design ideas

Top tips

- Modelling is a key part of developing. Make sure students use modelling to try out ideas and test designs. They can use a variety of methods but ensure that students constantly refer back to their client and specification to ensure that their ideas are developing in the right direction.

- Students should explain all of their decisions when developing. Ask students to think about why they have made these decisions and question whether they are the right choices. Make sure they document this thinking as it will provide valuable insight for the moderator and add to their developing and/or evaluation marks.

- Encourage students to investigate and then justify the materials and/or components they choose to use. The process of investigating materials and components should help students develop/refine their design. Their design may need to change as a result of this investigation and they should be documenting what they think is appropriate and why. It may be appropriate to carry out some primary research/testing which can boost the marks in the investigating and evaluation sections.

- Students must produce a manufacturing specification eg cutting list, parts list, working drawing etc. This should give enough information to allow for third party manufacture.

- Generating and developing ideas, investigation and evaluation and skills shown in realising may all happen on the same page. Avoid teaching students to follow a set format. There are more marks available to them if they follow a more organic, iterative approach. This may mean that you don't ask students to put titles on their pages as it may be very difficult to label a page if lots of different aspects are involved.

Section E – Realising design ideas

Top tips

- There are no restrictions in terms of the processes your students need to demonstrate or whether products can be all CAD/CAM. It is more important that students show a high level of skill in terms of making. Students can demonstrate this skill through all areas of making. This means you can use evidence from all making activities including earlier models or even investigation activities if the skill demonstrated is to a high level.

- Ensure that if students use a lot of CAM, they document their autonomy in this area. There is a big difference between students who create a file and then send it to a laser cutter and students who know how to change power and speed settings, can adjust the bed height etc. Make sure your students show their capabilities in this area.

- There is no requirement for students to provide a fully functioning prototype. It may be that your students decide to create a working model, a scale model or a concept model for example. The level of skill is the important aspect of this decision.

- Ensure students take pictures to record the stages and techniques used for making as well as a range of final photos of the prototype. This will help you justify the marks you give to your students.

- Don't allow students to spend so long on this area that they lose time for other things. This is difficult, but remember that the realising section in this specification is only worth 20 out of 100 available NEA marks.

Section F – Analysing and evaluating

Top tips

- Analysis and evaluation should happen throughout the portfolio and not just at the end. Students should be encouraged to evaluate their progress throughout every stage of their journey. This could include many different types of evaluating, eg evaluating initial ideas against the specification or peer evaluation of models.

- Students should test their prototypes against their specification and by using their client. This should happen at the end of the making but could also happen when students test models throughout development. Ensure students include photographic evidence of any testing.

- Teach students to be honest about the prototype's strengths and weaknesses. This will help them to show future modifications/improvements which are less contrived and show real forward thinking.

- Don't allow students to see the evaluation as something that just happens at the end of the project.