

GCSE ENGINEERING

Non-exam assessment (NEA)

June 2021

For candidates entering for the 2021 examination.

To be issued to candidates at the start of the final academic year of their course of study.

Information

- The assessment is designed to be completed in approximately 30 hours.
- The assessment period is not required to be continuous.
- There are restrictions on when and where students can work on this brief. Please see Section 4.4 of the specification for more information about these restrictions.
- Submission may be paper-based or electronic using CD/DVD.
- Students will need to complete and sign a Candidate Record Form (CRF) which declares that the work is entirely their own. This must be countersigned by the teacher.
- Students are expected to complete **one** solution based on the given context and problem.

Turn over for more information

Context

Energy consumption has a huge impact on the environment.

Engineers have a responsibility to design products and systems that address environmental and energy issues.

Below is a problem that engineers face on a day-to-day basis. Your task is to identify a solution to the problem outlined below and produce an engineered product to help solve the problem.

In addition to the problem there are three examples of how the problem could be solved. You can choose a solution from this list or you can create your own.

Your solution must include both mechanical and electronic components to provide an integrated product.

Problem

The decline in the use of fossil fuels has meant that we need to rely on alternative sources of energy. We use energy in many ways: for heating/lighting, for transport, for manufacturing, for leisure. Your task is to engineer a device that uses energy produced by an alternative method to burning fossil fuels.

Three examples of possible solutions

Engineer a prototype device that uses wind power to drive a bird scarer.

Engineer a prototype device or system that uses a solar cell to power a vehicle.

Engineer a prototype device or system that uses water power to provide lighting.