The National Parent Forum of Scotland is grateful for the support of the Scottish Government, the Scottish Qualifications Authority and Education Scotland in the preparation of this series.

For more detailed course information:
- Education Scotland: www.educationscotland.gov.uk/nationalqualifications/index.asp
- Curriculum for Excellence Key Terms and Features Factfile: www.educationscotland.gov.uk/Images/CfEFactfileOverview_tcm4-665983.pdf

**NATIONALS IN A NUTSHELL**

**The National Parent Forum of Scotland Summary of Engineering Science National 4**

**ENGINEERING CONTEXTS AND CHALLENGES**
- ELECTRONICS AND CONTROL
- MECHANISMS AND STRUCTURES

**ADDED VALUE UNIT: ENGINEERING SCIENCE ASSIGNMENT**

**What skills will my child develop?**
- Knowledge and understanding of straightforward engineering facts and ideas
- Understanding the relationships between engineering, maths and science
- An understanding of mechanical, structural, pneumatic and electronic systems
- The ability to apply analytical, design, construction and evaluation skills to a range of straightforward engineering problems
- Knowledge of the workings of a range of simple engineered objects
- The ability to communicate engineering concepts
- An understanding of the role and impact of engineering in society
- Knowledge of the relevance of energy, sustainability and efficiency to straightforward engineering problems
- The ability to use materials and equipment for straightforward practical projects
- Design and problem-solving skills
- Planning, organising and researching in a technological context

**WHAT WILL MY CHILD EXPERIENCE DURING THE COURSE?**
- Active and independent learning through self and peer evaluations, setting targets, using feedback, reflecting on learning, making independent decisions
- A blend of classroom approaches including hands-on practical tasks, such as experiments and open-ended investigations; whole class interactive learning; group work and peer learning; visits to manufacturers or project sites
- Collaborative learning: working in pairs, small groups or teams to develop; links with other curricular areas such as physics, maths and social studies subjects; links with employers and businesses
- Space for personalisation and choice: learners can choose their Assignment for the Added Value Unit with guidance from their teacher
- Applying learning
- Embedding literacy and numeracy skills: measuring; estimation; managing production timing; communicating; reflecting and reviewing; researching and presenting information; using technology

**ASSESSMENT**
- To gain National 4, learners must pass all Units
- Units are assessed as pass or fail by the school/centre (following SQA external quality assurance to meet national standards)
- Unit assessment (or ‘evidence of learning’) could be presented in a variety of ways such as notebooks, records of group discussions, presentations, reviews, testing, videos and experiments. A portfolio of work may be prepared
- The Added Value Unit (Assignment) will require learners to solve an engineering problem and demonstrate skills in analysis, simulations, construction, testing and reporting.

National 4 progresses onto National 5

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