TECHNOLOGICAL ACTIVITIES AND APPLICATIONS

SUBJECT	**Practical Metalworking**
PRINCIPAL TEACHER of DESIGN TECHNOLOGY	**MR. M. YOUNG**
LEVEL OF STUDY	**National 4 / 5**

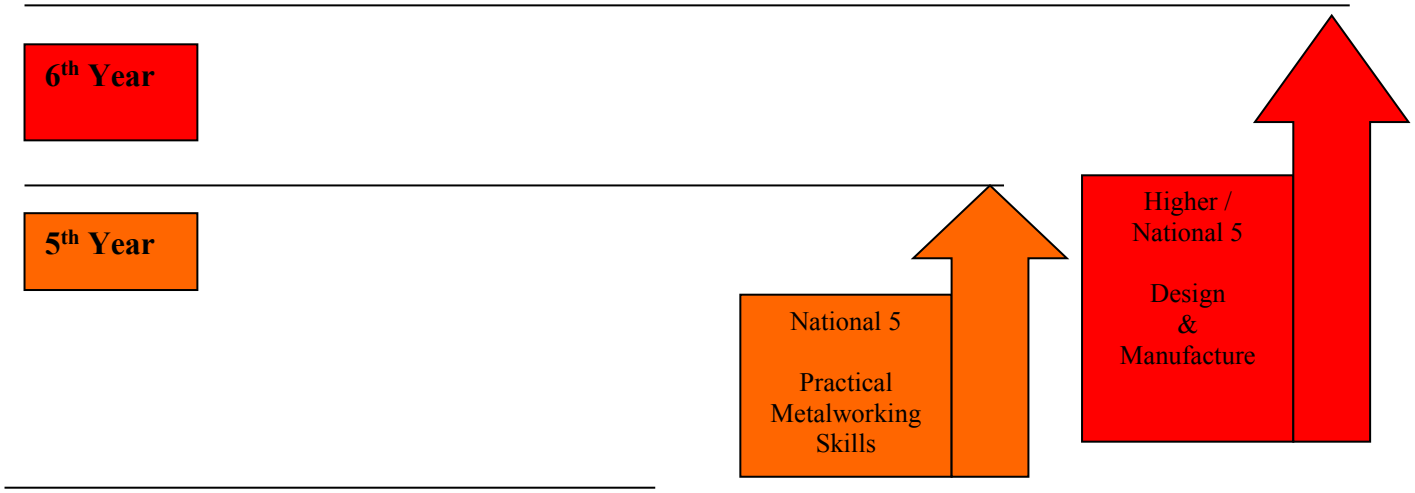
RATIONALE

The Course is largely workshop-based, providing a broad introduction to practical metalworking.

The Course is distinct in value in that it allows learners to develop practical psychomotor skills (manual dexterity and control) in a specialist practical craft alongside knowledge and understanding of common tools, machinery and processes. It helps learners to develop safe working practices and to become proactive in matters of health and safety. It allows them to learn how to use a range of tools, equipment and materials correctly and provides skills that are complementary to other curriculum areas, particularly Design and Manufacture.

The Course is of broad educational benefit. It allows learners to develop skills in reading drawings and diagrams, measuring and marking out, as well as cutting, shaping and finishing materials. It allows them to learn how to work effectively alongside others in a shared workshop environment. The skills that learners acquire by successfully completing this Course will be valuable for learning, for life and for the world of work.

The Course encourages learners to become successful, responsible and creative in their use of technologies. It allows them to continue to acquire and develop the attributes and capabilities of the four capacities, including: creativity, flexibility and adaptability; enthusiasm and a willingness to learn; perseverance, independence and resilience; responsibility and reliability; and confidence and enterprise.



AIMS

The Course is practical, exploratory and experiential in nature. It combines elements of practical metalworking techniques and standard practice with elements of creativity.

The Course allows learners to gain a range of practical metalworking skills and to use a variety of tools, equipment and materials. It allows them to plan activities through to the completion of a finished product in metal.

The Course will also give learners the opportunity to develop thinking, numeracy, and employability, enterprise and citizenship skills.

The aims of the Course are to enable learners to develop:

- skills in metalworking techniques
- skills in measuring out and marking various materials
- safe working practices in workshop environments
- practical creativity and problem-solving skills
- an understanding of sustainability issues in a practical context

COURSE CONTENT

The course assessment is comprised of a practical assignment worth 70% and a written exam worth 30% of the available credit. In order to prepare for these assessments pupils will work through a range of topics including:

i) Bench Skills

This topic helps learners develop a range of metalworking hand tool skills including bench-fitting work, routine sheet-metal work, and measuring and marking out. Tasks will involve some complex features.

ii) Machine Processes

This topic helps learners build their measuring and marking out skills and to develop skills in using common metalwork machines, equipment and related processes such as drilling, turning and milling. Tasks will involve some complex features. Learners will work with an appropriate range of metals in both familiar and unfamiliar contexts.

iii) Fabrication and Thermal Joining

This topic helps learners develop skills in fabrication, forming and joining of metalwork components with some complex features. Learners will develop skills in thermal joining techniques such as welding and brazing alongside forge work. They will also build skills in measuring and marking out to support these processes.