Intent

The KS3 technology curriculum has been developed with the student in mind. Within the curriculum we have included aspects and topics that will allow for a smooth transition to their KS4 counterpart should they choose it as an option. Aside from KS4, the curriculum is designed to provide a broad familiarity with tools, techniques and knowledge that would be gained had the student been in a mainstream school. Alongside this, the goal is to give students the abilities and knowledge to fix (or know how to fix) basic practical problems that may occur in their everyday lives now and in the future.

The current Technology Curriculum aims to work towards the National Curriculum outcomes. The National Curriculum for Design and Technology aims to ensure that all pupils:

- develop the creative, technical and practical expertise needed to perform everyday tasks confidently and to participate successfully in an increasingly technological world
- build and apply a repertoire of knowledge, understanding and skills in order to design and make high-quality prototypes and products for a wide range of users
- critique, evaluate and test their ideas and products and the work of others

Throughout a Technology cycle, students will work toward each of the above aims regularly. Through project based learning the students learn to utilise the tools and techniques necessary to accomplish their goal.

By the end of the year the students will have developed a knowledge and comfort with the technique developed, while also maintaining a standard to the highest of their ability. We also try to develop a sense of health and safety within the workplace which can be applied to a series of scenarios.

The subject specific words and ‘keywords’ are visited regularly over the course of every lesson. Students are held to a good standard and asked to use proper terminology when in the technology environment. This leads to a good practice which can be carried through should they choose to pursue a technology based career path.

Both literacy and numeracy are visited throughout the Technology curriculum depending on the lesson and circumstance. Through measuring, and working out to discussions and evaluations both topics are covered at great length throughout the technology year.

Given the practical nature of our students I believe that Technology (and Construction) are pinnacle to the future of a lot of our students. As such we work towards a curriculum that prepares the students for a practical based career. Throughout the year, reference will be made regularly to maintain the ideal that the skills learned in lessons are transferrable to a career in that subject.

Within the subject, we try to incorporate all the values tied to the Social, Moral, Spiritual and Cultural development within reason. In order to do so we try and create a working environment similar to that of a professional setting. This allows for students to act within the standards of the SMSC whilst also gaining a toned down version of a professional setting for experience moving forward.

The curriculum respects the RRSA and allows for students to express their views in the correct manner. As such the students are expected to act responsibly within the RRSA system.

Our goal is to develop the cultural capital of the student with the hope that they will carry the skills and techniques forward with them beyond their time at our school.

In the creation of the curriculum we have researched and reviewed various Rosenshine articles as well as the Ebbinghaus memory curve. Alongside this, various studies throughout the years published via DATA (Design and Technology Association). All these sources have proven to be useful in the development of a sustainable curriculum suitable to the needs of our students.

At the end of each project we measure the students work against the endpoints. They are judged in three main categories of Design, Make and Evaluate. Within these heading the criteria for each student is specific to them and their ability. Ideally the student would produce a unique product within their brief to a high standard showing independence and knowledge while also maintaining the high standards of Health and Safety throughout the project.

Within each lesson we expect the students to follow and appreciate the British Values descriptions. With particular attention paid to the mutual respect and tolerance for other faiths and traditions. These are celebrated and explored through our curriculum, reflecting the National Curriculum, and through a wealth of extra-curricular events and activities.

Implementation

The subject will be taught through a series of projects that will vary in difficulty and length as the year goes on. Each project will build on skills learned in previous projects and aim to push the students toward accuracy and then precision. As the curriculum progresses through the year we will focus on developing the thought processes of the student.

The programme of study works towards developing the skills from the KS3 National Curriculum:

- Select from and use specialist tools, techniques, processes, equipment and machinery precisely.
- Select from and use a wider, more complex range of materials, components taking into account their properties
- Understand and use the properties of materials and the performance of structural elements to achieve functioning solutions

Lessons are sequenced as laid out in the long term plan but, the structure is flexible enough to accommodate the varying length of time students are on role at Oswaldtwistle School. As it is a short stay school many of the students are only enrolled for short periods of time, although others may be on roll for 2 years or more.

Practice in the classroom reflects Rosenshine's 10 principles of instruction (Principles of instruction; Educational practices series; Vol.:21; 2010 (unesco.org)) which underpin the implementation of the curriculum. These principles focus on the sequencing and modelling of concepts, the reviewing of taught material, questioning, and the stages of practice, from guided to independent. These principles are linked to the field of cognitive science and in particular the Cognitive Load theory by Sweller (1988).

Due to the structure of the curriculum and the opportunity to revisit techniques, methodology and information- the Ebbinghaus forgetting curve becomes an integral and natural theory to consider when examining the curriculum.

Retrieval is also a large part of the curriculum as every project is an opportunity to retrieve techniques and work from previous projects/ years.

Students are assessed formatively against the success criteria on their academic tracker and in a summative manner with the use of baseline and impact assessments. Academic trackers are used to assess the degree of mastery gained by each individual student in relation to the end points on their academic tracker. Progress is recorded by entering a red (novice) or green (secure) against each end point on their tracker. The trackers are constantly monitored over time and end points are revisited through retrieval and interleaving exercises until a student secures their targeted end points.

Should a non-specialist teacher join the Technology department- a range of appropriate training and support will be provided by JD or PB.

Impact

The impact of the course is assessed formatively against the success criteria on student's academic tracker and in a summative manner with the use of baseline and impact assessments.

Data analysis allows for us to determine which students will needs extra support and in which areas. From there we implement procedures designed to help that student react and progress back to their level.

As with the BTEC qualification in KS4, the main aim of the curriculum is to prepare the students to move onto the next stage of their technology development. Also to give them the confidence and competence to solve practical issues in their life outside of school using the tools and skills we provide during the course of KS3.

Within the subject we try to foster a positive attitude toward the subject. Through this we try to encourage students to try and solve problems and develop their own design creativity while also maintaining a level of reality. Their attitude when this philosophy has been embraced has led to some high level work being produced and a sense of pride that emanates from the student upon completion of that project.

The skills sets developed are constantly put into practice and use allowing students to access their previous experiences and develop both long and short term memory linked to the subject.

These practices and a practical approach have allowed for the skills and techniques to become embedded both in the students' long and short term memory. This is evidenced as the year progresses and has a great effect on the precision and speed with which the student can complete tasks. It also contributes to a large reduction in errors by the student resulting in less frustration and negative outburst.

That being said, the subject lends itself strongly to the ideal of a growth mind-set. Allowing students the opportunity to go above and beyond, where appropriate, to create unique designs and develop the knowledge to be able to push their skills to a higher plane. This in turn develops confidence and builds positivity toward the subject that can be seen when working on their projects.

Through the course the students should develop all the skills necessary to approach a practical environment with enthusiasm and confidence. This in turn should allow for the student to prosper in a similar environment at a higher level of education, or a place of work.