

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 is designed to work towards the main aims of the National Curriculum which are as follow; 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, each student will work toward the above aims regularly. Through the project-based learning we have in place, students learn to utilise the tools and techniques necessary to accomplish their goal. It is our intentions, that by the end of the year, students will have gained a deeper understanding of the subject and be more comfortable with the techniques they have developed. 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 encouraged to use the correct terminology when in the Technology environment which leads to good practice. This can then be used later in life should they choose to pursue a technology based career path.

Both literacy and numeracy are visited throughout the Technology curriculum in the form of measuring and accuracy; and discussions and evaluations. Both topics are covered at great length and students are encouraged to make the cross curricular links.

Given the practical nature of our students, I believe that Technology (and Construction) are pinnacle to the future of a lot of our young people. As such we work towards a curriculum that prepares them 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 incorporate Social, Moral, Spiritual and Cultural values. In order to do so we 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 also respects the

RRSA and allows for students to express their views in the correct manner. As such, students are expected to act responsibly within the RRSAs 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 Rosenshine's 10 Principles of Instruction, The Ebbinghaus forgetting curve and various studies 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 values depicted in the British values description. With particular attention to the values of mutual respect and tolerance for other faiths and traditions. These are celebrated and explored through our 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 progresses. Each project will build on skills learned in previous projects and aim to push the students toward accuracy and then precision. We will focus on developing the thought process of the student with goals to develop the 'right tool for the right job' mentality.

After a trial period over the course of the summer term last year, the decision was made to move all work to an online format where possible. Having tested this approach, I believe moving the subject to an online format will provide opportunities that previous classes will not have had. From access to the internet, gaining IT experience and giving students the ability to access their online book outside the classroom. It also gives the teacher the ability to show the progress of each student that was not there before, allowing for the creation of a pictorial timeline showing the projects development over time.

The programme 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 considering 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 also plays a large part of the curriculum as every project gives students the 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. Progress is recorded by entering, Emerging, Developing, Mastering or Excelling 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/curriculum map and in a summative manner with the use of baseline and impact assessments. Data analysis allows for us to determine which students will need 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 this subject area we promote and foster a positive attitude to learning. Through this we try to encourage students to 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 completing of that project.

The skills set developed are constantly put into practice and used regularly 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 can be seen as the year progresses when the students have to solve a problem or complete a task by recalling the techniques or skilled learned in a previous lesson. This in turn has an effect on the precision and speed with which the student can complete said task and a large reduction in errors by the student leading to frustration and a negative attitude. That being said, the subject lends itself strongly to the ideal of a growth mindset. This allows 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 upon a 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.