Design and Technology Curriculum Intent:

Design and Technology at TPA is an environment where students are free to be creative, analytical and explanatory through their own work which reflects the real world and challenges around them.

Our students are exposed to a wide range of tools, materials and possibilities; not just those typically found in Design and Technology, but much like the real world.

Year 7 Design and Technology:

Year 7 Autumn Term – Sustainable clock project:

Students will begin the Design and Technology journey focussing on plastics as a material and developing skills of how to create a sustainable clock utilising recycled plastic. They should be able to describe the qualities and differences between thermoforming and thermosetting plastics and why it is important to know them. As a part of creating working clocks students will learn the differences between motions and mechanisms

Year 7 Spring Term – ASPEX Gallery Souvenir:

Students will be adapting their CAD/CAM skills further with this project using a 3D printing software and taking influences from artwork surrounding Portsmouth. They will experience the different aspects of artwork of My Dog Sighs, Roo Abrook and FarkFK etc. They will adapt their artwork by working on physical and digital graphic designs on a piece of packaging for their souvenirs.

Year 7 Sumer Term – Festival Project

To wrap up year 7s first year in Design and Technology. Students are free to design and curate their own summer festival. This project entails using the laser cutter/ 2D design and generating a variety of merchandise. Students will develop their drawing skills by using Isometric Project and building a map design and merchandise stalls. Students will have cross-curricular references to maths focussing on ergonomics and anthropometrics and measuring wrist sizes to fashion wrist brands.

Year 8 Design and Technology:

Year 8 Autumn Term:

Students begin the Autumn term beginning to focus on iconic design movements. In this time they will independently research 4 different design movements and use artwork from the eras to influence their own laser cut design as a product to fit into a small pringles tin. They will undergo various packaging designs. During this project we will be teaching students how to successfully introduce the 3D drawing techniques of 1 Point Perspective and how to demonstrate that in their final product design.

Year 8 Spring Term:

Year 8s second project is titled “The Environment Around us”. Students will be focussing on environmental factors that occur in the community around them and utilising the 6Rs to produce and build and bug hotel. They will have the understanding on how to use new tools and how to construct a product appropriately. We will teach them technical skills of how to use appropriate tools and the health safety to us machines.

Year 8 Summer Term:

Entering the summer term, students are going to develop their prior skills and advance modelling products for a potential customer. They are given the context of “biomimicry” and have in depth researching challenges to find out precise details to manufacture a said product that specifically is targeted to them. This is enables students to prepare skills that could be seen in the GCSE programme. Students will also try different modelling techniques of how to prototype their model and experience what techniques work accordingly.

Year 9 Design and Technology:

Year 9 Autumn Term

As year 9 is getting closer to GCSE options, in Design and Technology we try to distinguish different technical skills and practical working as a more advanced level. In this time, they should be able to independently differentiate electronic components and solder them correctly. When this section of the project is completed, students will be designing and constructing an amplifier casing using manufactured timbers. They will be instructed how to execute lap joints into their timber and used laser cut designs for the front and back panelling for a complete product.

Year 9 Spring Term

Year 9 will enter the new year with the focus on ferrous and non-ferrous metals with the aim of making unique trinket boxes based on 3 iconic designers that are focussed heavily, in the Design and Technology world. Students will learn the differences between the metals groups and plan a mould to be used for pewter casting. This will then be assembled into a trinket box that will show finishes to an elevated level.

Year 9 Summer Term

Year 9 Summer term occurs just after options have been chosen. This period we introduce students 2 smaller projects. One being an entrepreneurial project where they must design and develop a batch of products that could be sold to raise money for charity. They will learn the different between how products have been producing in various of quantities and produce packaging or branding for them.

The other smaller project this term is a group project where students must use architecture to re-design Portsmouth for Portsmouth v.2, Students have the scenario of Portsmouth has been lost under water and they must collaboratively build new structures that use urban living and environmental factors to improve it. They will be given 6 weeks to design and prototype their city scape as a class before they venture off into their chosen GCSE options.

Year 10/11 - GCSE Design and Technology:

WHAT IS THE SUBJECT ABOUT?

GCSE Design and Technology is an advanced and more independent reflection of Design and Technology. It is 50% exam and 50% coursework (non-exam assessment). Year 10 will cover the groundwork of DT theory and exploration of processes and making. Year 11 is independent working on the skills provided in KS3 and year 10.

HOW WILL I BE ASSESSED?

The entire GCSE is 50% Exam and 50% coursework. Students will take time to over the period of 2 years to practice and develop their skills in Design and Technology. They are frequently assessed on

those skills and will have to ensure that they are meeting quick deadlines for various research and design tasks.

WHAT WILL I DO IN LESSONS?

Lessons are a mix of theory and practical Design and Technology skills. Students will research and model prototypes and utilise materials, tools and machines in a practical environment to achieve products in the environment around them.

WHAT ELSE DO I NEED TO CONSIDER?

Year 10

During this period students will be due to undertake a year 10 GCSE mock exam. They will experience revision and interventions to assist their GCSE examination work. Alongside this, the beginning of June will receive their actual GCSE non-examination contexts and begin their journey of researching the initial stages of the final year projects.

Year 11.

Year 11 will be working on the non-examination assessment throughout their course of year 11. This covers the researching of existing products and details of client needs and wants. This journey will continue into designing and prototyping a product that with continuously adapt with their investigation until they have reached a product that would be near enough their manufacturing. The course is split into 3 Assessment Objectives (AOs) and students will be given tight deadlines for each.

They will also receive fortnightly theory sessions covering the materials and specifications that are expected in the educas GCSE paper whilst undertaking 2 mocks in their academic year. Their NEA will be submitted around easter half term leaving time to focus on revision and theory before their final exam in June.