Subject: Design and Technology and Product Design	**Exam board KS4:** AQA
	Exam board KS5: AQA

Subject Intent Statement:

Design and Technology at Woodcote High school is an inspiring and broad practical subject. Students are challenged to use creativity and imagination to design and make products that solve real and relevant problems within a variety of contexts considering their own and other's needs, wants and values. Students acquire a broad range of subject knowledge and draw on disciplines such as maths, science, computing, and Art. Students learn to take risks and become innovative problem solvers. Through the exploration and evaluation of past, present and future technologies, students develop an understanding of its impact of our daily lives and the wider world.

By the end of KS3:

- Students should be able to feel confident in their ability to communicate a range of creative ideas through drawing techniques and annotations.
- Students should be able to use a range of Design and Technology terminology to express their ideas in an articulate manner.
- Students can reflect on their work.

By the end of KS4:

- Students should be able to apply their knowledge of Design and Technology to the wider world and understand the applications of the knowledge they have acquired.
- Students should be able to respond to contextual.
- Students can analyse and evaluate their work at a greater depth to inform further development.

By the end of KS5:

- Students have visited multiple design environments to develop their understanding of the design industry and the real-world applications.
- Students now have an independent approach to design.
- Students have a solid understanding of how most workshop tools and equipment work and can use them independently adhering to health and safety.

Key Stage 3 Curriculum

The students will complete a rotation in year 7 and 8 based on the 3 Design Technology subjects along with Food and Nutrition.

Students will complete 2 subjects each year throughout year 7 and 8. They will then complete two further projects in year 9, with the subject being determined at the start of the year.

Year 7 and 8	**Year 9**
<u>Textiles: Monstuff</u> Textiles will see the students learning about the fabric construction, basic sewing equipment, design movements. Students will complete a design task focused on creating a Monster themed toy using hand sewing techniques. **<u>Graphics: Sketch up Café</u>** In graphics students will be developing skills in design movement research and designing in the style of that design movement. Students will then take their designs onto Computer Aided Design (CAD) programmes photoshop to make them digitalised. Students will then	**<u>Graphics: Branding project</u>** Graphics in year 9 will develop on the students photoshop skills and also introduce another programme Illustrator. Students will begin with gaining an understanding to the importance of branding and will then look into colour theory and typography. Students will use their research to design logos and their own font to be used for rebranding of the SEALIFE centre. Students will then use these to create promotional posters and merchandise designs.

use a further CAD programme called Sketchup to design a café in the style of the design movement and include their own artwork.

Resistant Materials: Amplifier Speaker
This project will see students learn about colour theory, plastic theory, develop research skills and use these to create designs inspired by the design movement. Students will then develop practical skills in cutting plastic and timber. There is an extension option of being able to use some computer aided manufacture machines to add extra design elements to their work.

Resistant Materials: Mechanical Toy
The Mechanical Toy RM project offers students a hands-on opportunity to explore mechanical movement, design ideas, and manufacturing skills. Through this project, students develop key skills in technical drawing, material selection, measuring accuracy, cutting (wasting processes), shaping, and joining materials safely. They gain a deeper understanding of cams, levers, linkages, and motion, while learning to apply design thinking and problem-solving strategies.

Graphic, RM and Textiles inspired project:
Interior design Project
This project creatively explores the world of interior spaces through a multidisciplinary approach. Students will develop key skills in sketching, mood boarding, model-making, and CAD design, as well as gain practical experience with materials, textures, and finishes. They will learn how to consider interior design styles, space planning, and visual aesthetics while developing knowledge of sustainability (using material scraps) and understand how to apply scale for model purposes. This project builds critical thinking, problem solving and collaboration, providing a strong foundation in design principles across multiple material areas.

Key Stage 4 Curriculum

Autumn Term
Year 10: Sketching skills/Flashcard Box
Students will begin their GCSE by learning key drawing skills: one-point perspective, isometric, two-point perspective, exploded drawings, and orthographic projection. They will also create a flashcard box to store revision cards made throughout the course, helping them review and retain essential learning concepts. This will build on Year 9 joinery skills.
Theory Lessons
Student's will have will have dedicated theory lessons, aligned with AQA GCSE resources, starting with focusing on new and emerging technologies as well as energy generation.

Year 11:
Over the course of year 11 the Non-Exam Assessment will be a core focus and the students will begin to generate some design ideas as well as developments for their products. During this time, we will be focusing on exam techniques as well as continuing our learning with a focus on fabrication of products.

Spring Term
Year 10: Infinity Mirror Name Plate
In the spring term, students will focus on materials and their properties through the Infinity Mirror Name Plate project. They will create a personalised name plate, applying practical skills such as casting, vacuum forming, and die cutting within an infinity mirror housing LED light. This project directly links to the AQA GCSE course by developing students' understanding of material properties, processes, and incorporating electronic components, all key areas within the curriculum.

Year 11:
This term will see the students making their prototype for their Non-Exam Assessment and working with more advanced tools and equipment to create a working prototype of their idea. The students will link their use of analysis and modelling to support them in this task.

Summer Term
Year 10: NEA
In preparation for their Non-Exam Assessment students will be undertaking a practice version which will focus on three challenges that they need to investigate and begin to design a product based on their chosen challenge. Students will further their knowledge of design movements and designer to help inspire their products and begin to link their knowledge of smart and modern materials to generate unique and creative ideas.

Year 11:
Responding to their practice exams students will begin to revise in preparation for their GCSE exam at the end of the term. Students will continue to develop and apply their understanding of exam techniques through past paper analysis and exam style questioning

Exams:

The overall GCSE is split into two sections:
50% Written Assessment – A written exam that is completed at the end of year 11
50% Non-Exam Assessment – A portfolio of work that is started at the end of year 10 and submitted during year 11.

Key Stage 5 Curriculum

Autumn Term	Spring Term	Summer Term
<u>Year 12: Sensory Toy / Mini Skills</u> At the start of A-Level, students will undertake a design challenge focused on meeting the needs of a specific user. They will apply the theory learned in lessons to solve a real-world problem through creative and practical design. Alongside this, students will complete a series of mini skills tasks, including creating styrofoam phone models and mould making, to build their confidence with materials, form, and modelling techniques. This work lays the foundation for thoughtful, user-focused design and hands-on problem solving. **Year 13:** During this term our A-Level students will continue to focus on their Non-Exam Assessment and further develop their understanding of the design world linking to major design movements from Art Nouveau to Modernism. Highlighting on key designers in these Our students apply this knowledge of designs to support the development of their design ideas.	**Year 12: Desk Light** To develop students' understanding and application of Computer Aided Design (CAD) and Computer Aided Manufacturing (CAM), they will begin work on a Desk Lamp project. This involves designing and making a lamp with a neck turned on the wood lathe and a base cast from resin. Students will sketch creative ideas to explore concepts, develop their designs, and take them through to a finished product. This project builds both practical and digital skills, while deepening their understanding of design development and manufacturing techniques. **Year 13:** Over the course of this term our students will be testing and evaluating their prototype and modifying their products to meet the needs of their client.	**Year 12: NEA** During the Summer Term students will begin their Non-Exam Assessment. Linking their theoretical knowledge and applying this to the real-world problem that they have identified. **Year 13:** Our key focus for this term is exam revision and exam techniques. Responding to students practice exams and past papers we will be preparing our students for their exams.

Exams:

The overall A-Level is split into two sections:
50% Written Assessment – A written exam completed at the end of year 13.
50% Non-Exam Assessment – A portfolio of work that is started in year 12 and completed throughout year 13.

Ways to improve and progress in Design and Technology:

Visiting museums and galleries to support with generating creative and unique designs.
Sketching objects to develop their visual communication skills.
Take on design challenges.
Participate in after school clubs.
Engage with further reading surrounding the subject.