**Sandhill View**

**Design Technology Curriculum**

**Achieve Aspire Enjoy**

**Aim**

Here at Sandhill View Academy, we aim to securely equip **all** of our students for life beyond school as successful, confident, responsible and respectful citizens. We believe that education provides the key to **social mobility** and our curriculum is designed to build strong foundations in the knowledge, understanding and skills which lead to **academic and personal success**. We want our students to **enjoy** the challenges that learning offers.

Our aims are underpinned by a culture of **high aspirations**. Through developing positive relationships, we work towards every individual having a strong belief in their own abilities so that they work hard, build resilience and **achieve** their very best.

**Intent**

The curriculum includes formal teaching through subject areas, assemblies and extracurricular activities. We regularly review content to ensure we continue to meet our curriculum aims. The DT curriculum is planned to enable all students to develop skills in the following areas:

* To develop an understanding of health and safety within a range of DT areas
* To gain a range of practical DT skills
* To understand the importance of a healthy diet
* To gain a wider understanding of the world around us and the impact people and products can have on this

Throughout our programmes of study, every attempt is made to make explicit links to careers and the world of work. In addition to subject specific links, we aim to explicitly reinforce the skills and aptitudes which support employers say are important in the workplace;

* Resilience (Aiming High, Staying Positive, Learning from Mistakes)
* Collaboration (Teamwork Leadership Communication)
* Creativity (Originality, Problem Solving, Independent Study)

The British values of democracy, the rule of law, individual liberty, and mutual respect of those with different faiths and beliefs are taught explicitly and reinforced in the way in which the school operates.

**Implementation**

We have a wide range of links with industry with a lot of providers on our doorstep. We work closely with companies such as Nissan and TDR who offer a range of external visits and activities to engage students in the world of work. Nissan and Sunderland College focus closely on getting women into engineering and we also collaborate with science on a range of STEM focused events. We have just established a wealth of new links with employers through our business breakfast for future activities. There are also a range of units dedicated to industry in the specification where students must learn about industrial processes and techniques, along with moral obligations of employers and environmental considerations of industrial processes.

**Sequence and structure**

Our curriculum is split into Key Stage 3 (years 7 and 8) and Key Stage 4 (years 9, 10 and 11). Our Key Stage 3 programme of study has been collaboratively designed with PE specialists so that students understand not just the importance of nutrition, but how good nutrition links with physical activity to ensure well-being.

**Our Key Stage 3 Curriculum includes the following areas of study:**

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| --- | --- | --- | --- | --- | --- | --- |
| KS3 | Half Term 1 | Half Term 2 | Half Term 3 |  Half Term 4 | Half Term 5 |  Half Term 6 |
| Year 7 and 8 | **Theory** Food hygiene and safety when preparing basic meals. **Practical:** Fitness Testing – agility. Practical preparing a healthy fruit salad.  | **Theory** Healthy and balanced diets -how a poor diet can impact on health and understanding the principles of nutrition. **Practical:** Fitness Testing - Balance and Coordination | **Theory** Evaluation of a range of specialist diets and how these need to be adapted for a range of conditions.**Practical:** Fitness Testing – Power and reaction time | **Theory** Planning a healthy diet plan and an advertising campaign to promote this to young people. Test and review these ideas including third party opinions to come up with a final design solution. **Practical:** Fitness (TBC). Preparing a specialist healthy meal for a diet type (pasta related).  | **Theory** Understand the source and seasonality of ingredients, plan seasonal meals. Look at the impact food miles and carbon footprint can have on the environment and how to reduce this. **Practical:** Fitness – Aerobic endurance. Preparing a seasonal soup.  | **Theory** Students will look at the effects of diet on muscle growth and development. **Practical:** Fitness – muscular endurance/strength/speed/ flexibility.  |
| Content covered in a cross curricular approach in other subjects | **Art** * Exploring other cultures
* Using a range of approaches to generate creative designs
* Analysing the work of professionals

**Science*** Understanding properties of materials i.e polymers, metals
* Understanding circuits, inputs, processes and outputs, sensors
* Forces and movement

**ICT** * Understanding circuits, inputs, processes and outputs, sensors
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We know that students who read well achieve well. As such all subject areas are committed to providing regular opportunities to read extensively.

**Our Key Stage 4 Curriculum**

At Key Stage 4 students follow the OCR Cambridge National Certificate in Engineering Design. We place particular emphasis on developing practical skills throughout the programme of study.

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| KS 4 | Half Term 1 | Half Term 2 | Half Term 3 |  Half Term 4 | Half Term 5 |  Half Term 6 |
| Year 9 | R105 – Design Briefs, Design Specifications and User Requirements Practical skill based project looking at health and safety and making skills which lead into R108.  | R105 – Design Briefs, Design Specifications and User RequirementsTheory based on the IDOV design cycle. Practical drawing techniques in preparation for R107.  | R105 – Design Briefs, Design Specifications and User RequirementsPractical skill based project developing on from project 1 looking at a broader range of tools and equipment including CAD which will lead onto R108.  | R105 – Design Briefs, Design Specifications and User RequirementsTheory based on manufacturing processes and selection of materials. This will link to the legislation and sustainability requirements in R106.  | R105 – Design Briefs, Design Specifications and User RequirementsPractical skill based project aimed at further developing Cam to CAM skills and plastic forming in preparation for R108.  | R105 – Design Briefs, Design Specifications and User RequirementsTheory based on the wider influences of new products and emerging technologies and environmental pressures.  |
| Year 10 | R106 – Product Analysis and ResearchThis unit enables learners to perform effective product analysis through researching existing products.  | R106 – Product Analysis and ResearchCommercial production methods and manufacturing processes, along with conformity to legislation.  | R106 – Product Analysis and ResearchConsiderations for the end of a products life and the impact products and production can have on the environment.  | R106 – Product Analysis and ResearchDevelop understanding of primary and secondary research and learn how to complete in-depth analysis through disassembly.  | R107 – Developing and Presenting Engineering DesignsThis unit develops techniques in generation, concept and development of design proposals.  | R107 – Developing and Presenting Engineering DesignsExperimenting with a range of hand-drawing techniques including 2D and 3D engineering drawings.  |
| Year 11 | R107 – Developing and Presenting Engineering DesignsLearners develop their drawing style through the use of CAD to produce and communicate design proposals.  | R108 – 3D Design RealisationThis unit requires learners to apply practical skills to produce a prototype from an engineering drawing.  | R108 – 3D Design RealisationDeveloping knowledge of safe working practices and use of specialist tools and equipment within the workshop.  | R108 – 3D Design RealisationHow to produce a risk assessment, understanding how to assess for hazards and take precautions within the workshop.  | R108 – 3D Design RealisationSafely and independently produce a 3D prototype through their understanding of engineering drawings and safety within the workshop.  | R105 – Design Briefs, Design Specifications and User Requirements Review the theory elements of the course taught through units R105, R106, R107 and R108 in preparation for their final exam.  |

**How does our Curriculum cater for students with SEND?**

Sandhill View is an inclusive academy where every child is valued and respected. We are committed to the inclusion, progress and independence of all our students, including those with SEN. We work to support our students to make progress in their learning, their emotional and social development and their independence. We actively work to support the learning and needs of all members of our community.

A child or young person has SEN if they have a learning difficulty or disability which calls for special educational provision to be made that is additional to or different from that made generally for other children or young people of the same age. (CoP 2015, p16)

Teachers are responsible for the progress of ALL students in their class and high-quality teaching is carefully planned; this is the first step in supporting students who may have SEND. All students are challenged to do their very best and all students at the Academy are expected to make at least good progress.

Specific approaches which are used within the curriculum areas include:

* 1:1 support with practical tasks through the use of the DT technician
* Resources adapted to accommodate a range of SEND needs
* Practical tasks demonstrated and more challenging stages recorded to be viewed by the learner as needed
* Seating plans to allow for peer/teacher support
* A range of learning styles embedded in all lessons

**How does our curriculum cater for disadvantaged students and those from minority groups?**

As a school serving an area with high levels of deprivation, we work tirelessly to raise the attainment for all students and to close any gaps that exist due to social contexts. The deliberate allocation of funding and resources has ensured that attainment gaps are closing in our drive to ensure that all pupils are equally successful when they leave the Academy. More specifically within the teaching of Design Technology, we;

* Targeted support for under-performing students
* Intervention available throughout the week
* Technician support with practical tasks
* Engagement through the use of practical learning

**How do we make sure that our curriculum is implemented effectively?**

The Design Technology curriculum leader is responsible for designing the Design Technology curriculum and monitoring implementation.

The subject leader’s monitoring is validated by senior leaders.

Staff have regular access to professional development/training to ensure that curriculum requirements are met.

Effective assessment informs staff about areas in which interventions are required. These interventions are delivered during curriculum time to enhance pupils’ capacity to access the full curriculum.

Curriculum resources are selected carefully and reviewed regularly.

Assessments are designed thoughtfully to assess student progress and also to shape future learning.

Assessments are checked for reliability within departments and across the Trust.

**How do we make sure our curriculum is having the desired impact?**

* Examination results analysis and evaluation, reported to the senior leaders and the local governing body to ensure challenge
* Termly assessments-analysis and evaluation meetings
* Lesson observations
* Learning walks
* Book scrutiny
* Regular feedback from Teaching Staff during department meetings
* Regular feedback from Middle Leaders during curriculum meetings
* Pupil surveys
* Parental feedback
* External reviews and evaluations