Key Stage 3 Framework for Learning

Year 8 2018-2019: Creative Foundations

Curriculum Area: Computing and Technology - **KS3 Computing and Technology**

Year 8	Computing *(Approx. 12-13 weeks)*		Design and Technology *(Approx. 12-13 weeks)*		Food Preparation and Nutrition *(Approx. 12-13 weeks)*
Knowledge	During this rotation in Computer Science, students will be learning about the following 3 topics: **E-Safety + Information Reliability** **Binary** **Spreadsheets + Marketing**	During this rotation in Computer Science, students will be learning about the following 3 topics: **Python** **Networks** **Animation**	During this rotation in Design and Technology students will be required to learn about a range of factors leading to the design and development of products over time including: **New and Emerging technologies:** • Industry and enterprise • Industrial revolution • Development of factories and production • Globalisation and New Technologies (CAM/CAM) • Sustainability and the environment • Production techniques and systems **Specialist technical principles (common technical principles)** • Forces and stresses on materials and objects **Energy, materials, systems and devices** • Energy generation and storage • Electronic system processing • Mechanical devices	During this rotation in Design and Technology students will be required to learn about the iterative design process and how to create a product using a specific design brief. Students will apply their knowledge of mechanisms learnt in term 1 to create ideas for a mechanical toy (automata) using a range of materials learnt about in Year 7. Students will be taught how to follow a brief through a design and make activity which will allow them the opportunities to select materials tools and equipment based on their existing and developing knowledge.	During this term student's will undertake a unit of work which enables them to secure a foundation to which they can build upon the Food Preparation and Nutrition knowledge, techniques and methodology of working. In Food and Nutrition students will study a range of topics: • Hygiene and the danger zone • Function of ingredients • Breads including multi-cultural breads • Adapting recipes • Macronutrients/ Food Labelling • Nutritional analysis • Sauces • Pastry • Quality control • Food Science experiments- Raising Agents • Sustainability and Fair Trade • Seasonal cookery As well as this, students will also have the opportunity during practical sessions to evaluate their performance so by the end of the rotation they will be able to independently select targets and evaluate against their performance.
Skills	**E-Safety + Information Reliability** Pupils will learn about E-Safety issues and determine how to stay safe when online and when using social networking platforms.	**Python** Pupils will create a quiz to test fellow pupils on saving the planet. They will be taught alongside creating the quiz in Python and will have created an interactive quiz that	Students will develop their understanding of how to conduct research and investigation into a range of topics (listed above) and how to dissect this information to make it meaningful, memorable and be able to	**Specification:** Students will develop their skills in writing a list of design requirements (specification) for their product following a set design brief. This will require students to consider a range of areas including	In practical sessions students will have the opportunity to practice Food Preparation and Nutrition skills. Practical lessons will link to the knowledge/theory being covered in the lesson. Skills Include: : ***Skill 1***: General practical skills (weigh and measure, prepare ingredients and equipment, cooking times, test for readiness,

	Alongside E-Safety students will learn about the importance of different search methods, to test for bias information and the reliability of information they come across. Students will use and learn the following skills: - Planning - Finding - Communicating - Evaluating - Boolean - Bias - Reliability - Search Engines - Advanced Searches **Binary** Pupils will learn about the skills that are linked to the GCSE exam which will be undertaken in the Year 11 GCSE. They will convert binary to denary (and vice versa), alongside hexadecimal and will learn about sound/images in binary. They will collect interesting facts about India and china and convert them into a newsletter for fellow year 8 pupils all about Binary. Students will use and learn the following skills: - Converting binary/denary/hexadecimal - Sound and images in Binary **Spreadsheets + Marketing** Students will (hypothetically) set up their own business which will be a clothes shop	requires input from the user. Students will use and learn the following skills: - Variables - Identifying errors - Design - Testing - Planning **Networks** Pupils will research and investigate networks. They will decide which components would be used for a specific computer. They will also study the different types of network topologies and identify the most suitable one for different needs. Students will use and learn the following skills: - Network components (HUB, Switch, router et c.) - Network topologies (Ring, Bus, Star, Mesh) - The difference between LAN and WAN **Animation** Pupils will be learning about animated banners and the use of effective banners in webpages. Students will use and learn the following skills: - Building banners - Creating effective movements - Planning and building a webpage - Exporting animations to use on the webpages - Evaluating and making	apply it to a given context or exam question. Students will need to develop techniques for extended writing, especially in relation to writing about advantages and disadvantages and critical evaluation (which will be developed in term 2's evaluation strategies). *Skills to also include:* • *Extended writing* • *Competing tables and graphs* • *Descriptive writing* • *Revision techniques* • *Reading questions* • *Sketching and designing*	design, function, materials, user etc. **Design:** Students will generate ideas for their Automata toy creating solutions to their written specification. Design techniques will be shown through the use of 2D and 3D design as well as how to annotate and render a design idea. **Manufacture/Realising:** Students will be completing a range of practical tasks and activities which will develop their skills in working with a range of tools and equipment in a work shop environment. This will also include tools, materials and equipment for finishing a product/piece of materials. **Evaluation:** Students will evaluate their work throughout the practical process and equally at the end of the manufacture for the product. This requires students to be able to be self-critical as well as suggest methods for improving both application and skills.	judge and modify sensory properties) • **Skill 1**: general practical skills- this includes weighing and measuring, using different equipment, preparing ingredients and equipment, being aware of cooking times. • **Skill 2:** Knife skills- this includes perfecting the bridge and claw, different simple vegetable cuts. • **Skill 4**: Use of the cooker- this includes using the oven and hob for a variety of cooking methods. • **Skill 5:** Use of equipment- this predominately refers to electrical equipment (electric whisk). • **Skill 6:** Cooking Methods- students will use the following cooking methods- boiling, shallow frying, simmering, baking. • **Skill 7:** Preparing, combining and shaping (breads, Swiss roll) • **Skill 8:** Sauce making- roux sauce • **Skill 10:** Dough- Students will have the opportunity to make bread and pastry dough. • **Skill 11**: Raising Agents- students will explore the use of chemical, mechanical and biological raising agents in food products.

	and there are set criteria to follow. Students will use and learn the following skills: - Market research - Charts/Graphs - Reports - Questionnaires - Building a project from start to finish - Collate all data on a spreadsheet	improvements				
Assessments	**Marking Point 1** Students given a scenario on e-safety and information reliability. This will be in the format of a worksheet which will have questions, spaces to fill and places to draw to show understanding of all areas. **Marking Point 2** Students given binary tasks to solve in the format of a worksheet. Students will convert binary to denary, denary to binary, binary to hexadecimal and some questions on images/video. **Marking Point 3** Students will use their completed classwork from the spreadsheets + marketing topic which will be marked as part of their assessed piece.	**Marking Point 1** Students given a python mini project to solve with help provided in the way of cheat sheets. They must hit certain criteria to get the mark. **Marking Point 2** Students to be able to draw all 4 types of network topologies and the components within them correctly. Worksheet given to students with set amount of marks. **Marking Point 3** Students to sit a progress test to give a final grade for the whole term of Computer Science. Will cover ALL topics completed in lessons.	**Marking Point 1** Assessed piece of written work looking at students understanding and use of spelling, punctuation and grammar in relation to an Industry and Enterprise area. **Marking Point 2** Assessed piece of written work looking at students understanding and use of spelling, punctuation and grammar in relation to Energy generation and storage. **Marking Point 3** Home Learning tasks (extended piece of writing relating to Advantages and Disadvantages to Nuclear Energy).	**Marking Point 1** Assessed piece of written work (Specification) looking at students understanding and use of spelling, punctuation and grammar in relation to a material area. **Marking Point 2** Progress test: Students will complete a progress test for Design and Technology during the scheduled progress test fortnight. These will generate a score and a progress statement for this rotation. **Marking Point 3** Home Learning tasks (Design task based on a chosen material area).	**Marking Point 1** **A piece of classwork:** Function of ingredients task-function of ingredients in a muffin **Marking Point 2** **A piece of classwork:** Eggs; Function of eggs in food (GCSE) /practical evaluation (depending on band) **Marking Point 3** **Home Learning Task** The home learning assignments listed below will be issued to students during the 4th week of the rotation. The work will be assessed cumulatively and a mark awarded.	**Marking Point 1** **A piece of classwork:** Multicultural Flavoured Bread Task **Marking Point 2** **Home Learning Task** The home learning assignments listed below will be issued to students during the 4th week of the rotation. The work will be assessed cumulatively and a mark awarded. **Marking Point 3** At a time decided by the school management, all students will sit a **progress test of 1 hour in length.** The test given to students will be appropriate to the individual Technology subject being currently studied in this rotation. All test will be in a format that the students will encounter should they elect to study a Technology subject at Key Stage 4.
Cultural Enrichment	**READ** Page 33-45, OCR revision guide. Page 25-30, OCR revision guide. Page 64-73, OCR revision guide. **WATCH** 2.1 Algorithms 2.2 Programming Techniques	**READ** Page 13-23, OCR revision guide. Page 33-45, OCR revision guide. Page 64-73, OCR revision guide. **WATCH** 1.4 wired & Wireless Networks	**READ** Students will be encouraged to read widely into the topics covered throughout this half term, such as the use of 'fracking' and the concerns this method of generating energy is having on local communities. This is widely reported issue and will help students to form their own thoughts and options about	**READ** There are a number of resources students can use to develop their knowledge and understanding of topics covered in lessons and in preparation for progress tests. • www.technologystudent.com • www.bbcbitesize.co.uk • PG online GCSE Design and	**READ** Pupils can revise from the following material in preparation for progress tests and also to enrich classroom learning. • Examining Food and Nutrition. Jenny Ridgwell • **www.bbc.co.uk**/schools/gcsebitesize/design/**food**tech **WATCH** Students are encouraged to use you tube to watch clips on food cooking and preparation methods for the following areas: • Bread making • Cake making methods	

	2.3 Producing Robust Programs 1.8 Ethical, Legal, Cultural and Environmental Concerns 2.4 Computational Logic 2.6 Data Representation **VISIT** School IT Technicians tour or speak around how they keep the school safe and the importance of e-safety.	1.5 Network Topologies, Protocols and Layers 1.6 System Security 2.2 Programming Techniques 2.3 Producing Robust Programs **VISIT** Organise trip to UKFAST for students to see how they work with networks, topologies and system security.	this topic. There are a number of resources students can use to develop their knowledge and understanding of topics covered in lessons and in preparation for progress tests. • www.technologystudent.com • www.bbcbitesize.co.uk • PG online GCSE Design and Technology (1-9) text book (the work of others chapter) **WATCH** Documentaries through BBC Education and Channel 4 learning will provide students with opportunities to look at wider issues relating to the use of Nuclear energy and the potential harm and hazards that impact the local communities such as with Fukishima and the 2009 hazards due to core overheating. **VISIT** Students are to be encouraged to visit (if one cannot be arranged) the Museum of Science and industry in Manchester where they can see the impact that both sectors have had on the development of new products and technologies. This is especially the case for work surrounding the developments as a result of the industrial revolution and steam power being used as a driver for industrialization. There are also plenty of warehouses and textile mills that are associated with the development of industry surrounding Manchester (the 'hive' of industry)	Technology (1-9) text book (the work of others chapter) In additional students will be encouraged to read journals and articles online which focus on the common use of materials and equipment. Students should also be encouraged to complete some wider reading into the manufacture of products such as toys and safety considerations given when designing a product for a younger client. **WATCH** Students are encouraged to use YouTube to watch clips and videos about the manufacture of items using a range of manufacturing methods, the links to suitable and specific videos will be assigned to students through doddle however there are a broad range which compare different manufacturing methods with different material types. **VISIT** LEGOLAND Manchester ® is a local attraction which highlights the development of the Lego toys and the manufacture of these now famous bricks in a range of shapes and sizes to create a wealth of different product types. Students should be encouraged to visit (if one cannot be arranged) as part of the tour highlights the manufacture of these products using injection forming and manufacture with plastic based materials.	• Sauce making **VISIT** Research fair trade food availability in a range of local food outlets as part of their home learning tasks. A local food outlet to research the bread varieties available. This will be encouraged as part of pupils home learning task.

CHORLTON HIGH SCHOOL: CURRICULUM

Character	LEADERSHIP	INITIATIVE		RESILIENCE
	QofS  **Empathy & Resiliency:** Caring for others, equality - As students will be learning about e-safety, they can use empathy to show awareness of caring for one another when using the internet and technology. During this year of school, students will be encouraged to explore their own characters as well as that of others. There will be opportunities in the lessons to work individually to develop resiliency but also as a small and large group to nurture empathy and consideration for others. **Creativity & Curiosity Openness:** Students will be learning about the different components that help to make a computer functional. They will use creativity and curiosity when developing their binary knowledge and also their report for their businesses. **Responsibility & Reflection:** Students will develop these qualities as they learn about the dangers of being online and how to avoid online risks. They will also develop tips to help others stay safe Students will develop their independence and be able to use self-assessment to improve their work. They will practice their skills which they have learnt throughout the year and apply these in an exam situation. **Motivation + Practice:** As students prepare for their summer assessments they will practice revision skills and independent study to achieve their targets.	 **QofS – Curiosity and Reflection** **Curiosity:** Students will be investigating and exploring a range of new information around the development of systems and technologies as well as industry. They will be given opportunities through class based activities and home learning to research and investigate and develop their knowledge and understanding of this new material. **Reflection:** Evaluation reflection will be an opportunity for students to consider a range of implications from the development of new technologies and systems and how these have had a wider impact on culture and society.	 **QofS – Practice and Creativity** **Practice**: Students will be developing their practical and design skills throughout the unit of work and will be able to develop their practical application when working with tools and equipment. There may be times where students are required to model and sample some aspects of their work to ensure a successful outcome. **Creativity**: When designing their mechanical toy students will be required to creatively respond to a design brief generating designs that are engaging for their client. Students will also need to think creatively about how the mechanism works with the motion of the toy and what impact this might have on the design. **Responsibility:** Students will be looking at ways to conducts themselves and operate with tools in a safe and controlled manner, health and safety in the workshop environment will also be explored in this rotation, therefor students will actively be looking at ways to be responsible for their own learning and the safety of themselves and others.	**QofS**  **Optimism:** As pupils start their journey of progress they will now plot targets into their assessment books and require optimism to reach their goals For many of the students, completion of a piece of practical work involving the mastery of new technical skills can be problematic. They will need to be optimistic that they can be successful. **Empathy:** There will be opportunities in the lessons to work individually to develop resiliency but also as a small and large group to nurture empathy and consideration for others. **Creativity:** During the completion of written work, students will be given the opportunity to produce a variety of work where their creativity can be used. For example, in the production of a piece of work (poster/leaflet) on a specific topic or adapting a recipe to meet a specific requirement. In addition, during the manufacture of some of the dishes that students will make they are required to make a personal selection of ingredients, thus creating and adapting dishes. **Curiosity:** During the completion of the rotation, students will be introduced to serval topics where they may have none or very little personal knowledge. As a result, they should develop a natural curiosity to develop their knowledge and practical skills. This will also be explored through food science experimentation looking at the use of different raising agents in cake products. The Home Learning research task will also develop students' curiosity. **Responsibility:** Students will need to show responsibility during **o**ngoing practical tasks to ensure the health and wellbeing of not only themselves but others in the room. **Reflection**: At several points within the rotation, students will be asked to reflect on the work that they have completed. This may either be written or practical tasks. The reflecting that they do will enable them to fully evaluate their work and set personal targets to make progress in the future.

				Practice/Resiliency Completion of tasks within lesson time will give the students practice in the completion of questions that they will be given within termly progress tests. When making dishes, students will often repeat practical skills. Students will need to develop resiliency as they complete **o**ngoing practical tasks. **Motivation:** Throughout all lessons students will need to maintain motivation in order that they complete all tasks whether they are written or practical ones.