Computing

Curriculum Principles

By the end of their all-through education, a student of Computing at Dixons Kings will:

* Have a wide range of knowledge and skills to work in the creative media sector as the skills and knowledge gained in KS3 (Key Stage 3) and KS4 (Key Stage 4) will allow students to apply them in any sector involving elements of computing.
* Gain transferable skills for example, time management, referencing, researching, reviewing, working with others and communicating creative concepts effectively. Students follow two paths in computing at KS4. We challenge student's ability in computing and allow them to be creative in their choices when applying these on the computer.
* Take units at KS3 and KS4 that cover a range of skills such as graphic editing, comic creation and building interactive media products which can then prepare students for future employment.

In order to truly appreciate the subject and create deep schema, topics within Computing have been intelligently sequenced with the following rationale:

* At KS3, the first unit undertaken by the students is to make them understand the dangers of being online. This allows the computing department to make students aware of the dangers of being online from home and also at the same time being aware of the dangers of potential viruses which could damage or corrupt their devices. After this unit is completed students then look at the spreadsheet application. The majority of students have not covered this at Primary level so we aim to do the basic level first in looking at formulas and formatting skills in spreadsheets. The online safety element is revisited in the ‘Do Now’ activities and homework set during the spreadsheet topic.
* All students are taught skills in Year 7 through basic application work on MS Word, MS PowerPoint and MS Excel. This is to ensure students have the skills and knowledge to apply in topics covered in Year 8 and at KS4. In KS4, students tend to use MS PowerPoint and MS Word on a regular basis to evidence their coursework. These skills are consistently revisited and embedded throughout the year.
* By end of cycle 2 (Year 7) students will have covered all the basic knowledge and skills in MS Office applications. Students then focus on Computer Science KS3 topics which include hardware and software skills and scratch programming. Those students who are confident mathematicians have more of an understanding on the programming topics as they have the mathematical skills to solve computational questions.
* By end of cycle 3, year 7 and year 8 students have the opportunity to recall knowledge by completing end of year assessments. In these assessments, 40% of the marks are for pure recall. A further 60% of the marks will be for application of the knowledge. Gaps in knowledge from the assessment will be addressed through DIRT activities which are differentiated. Knowledge is retrieved through ‘Do Now’ activities in most lessons which will be monitored through AFL strategies used by the computing teachers. At KS3, knowledge organisers are used and accessible via the Teams channel. The computing KS3 booklet contains homework tasks and WWW/EBI for students to work on. We understand that high ability students need to be challenged and this is included in the curriculum booklets and is differentiated to challenge and support all learners.
* In Year 9, students start the OCR iMedia specification. During cycle 1, students build on their skills for the iMedia qualification by practising keys skills such as researching graphics, creating visualisation diagrams and learning Photoshop skills that will help them when they undertake the first unit named R094. In cycle 2 and 3 students start their coursework on R094. By the end of cycle 3, students will have completed LO1 and LO3 of R094.
* In year 10, students are completing the new OCR iMedia specification. This new specification consists of 2 pieces of coursework and 1 exam element which will take place in the Year 11 summer exams series. In Year 11, students work towards the OCR level 1/2 Creative iMedia qualification.
* During cycle 1 and 2, students undertake R094 unit where students learn about graphic editing and creation. They will learn tools on Adobe photoshop of Fireworks to create or edit the graphics. The first strand of R094 allows students to research on different graphic purposes looking at target audience and the purpose of the graphics created. The second strand of R094 allows students to plan for their graphic and also evaluate and discuss the legal aspect they need to be aware of when designing their own graphic and using someone else’s idea. The third strand of R094 allows students to create their own graphic based on the given scenario from the exam board. Students revisit skills they have learnt in Year 9 on graphics to create the suitable graphic. Students also need to comment on the development on the graphic by either using MS Word or MS PowerPoint to evidence this.

The final strand in R094 allows students to evaluate the graphic created by discussing their strength and weaknesses.

* In Cycle 3 Year 10 students then complete the next piece of coursework looking at R095 comic creation. Recall and spaced retrieval is used in the first strand of R095 where students conduct research on comic history and the creation design decisions. The sequence of lessons in R095 follow the same sequence as R094 where students do research, planning, creation and evaluation. Students get the opportunity to work on specialist comic software

which uses features that you would see in an actual comic. Students have the opportunity in this cycle to recall work from previous unit R094 in the second strand by using items such as moodboards, mindmaps, resources and assets and legislation.

* In Year 11 during cycle 1 and 2, students undertake their final piece of coursework; R085. Students create a multiple comic creation for this coursework unit. Students have to complete 4 strands which are the same as the other 2 previous coursework units. For the first strand students are required to research and investigate different multimedia products used in the society such as self-service ordering products, interactive websites etc. For the second strand, students recall from previous units undertaken and they can use moodboards, mindmaps, resources, assets and legislation. Students are then taught and asked to create their interactive multimedia product. Students can recall knowledge and skills they had used in R082 when working on graphics for their interactive product. The final strand is same as other units where they have to evaluate their final product created. In cycle 3, students are then preparing themselves for the exam unit R081. R081 content is already covered by the students when they undertake the second strand of the coursework. In cycle 3, the students look more at the exam questions and also recall knowledge. No new content is taught here as students have already covered the content in the coursework. The emphasis is more on the students to be exposed to the exam-style questions.

The Computing curriculum at Kings has been influenced by:

* Computing at School work on Digital literacy
* A combination of IT, Digital literacy and Computing skills that can be found at Key Stage 3 scheme of work at Dixons Kings Academy
* Hodder education at KS3
* OCR Specification
* Shared practice and collaboration with DAA (Dixons Allerton Academy)

Our Computing curriculum ensures that social disadvantage is addressed through:

* All computing lessons are differentiated to provide challenge and support for all students, including those in year 7 who have had no previous experience in using MS Office applications, as well as stretching those with existing levels of skills in the subject.
* At KS4, disadvantaged and SEN students have their books marked more frequently compared to their peers. This allows us to monitor and support and clear any misconceptions or errors in their understanding. SEN and disadvantaged students are highlighted by staff on their data folders, which allows staff to easily monitor the sub-groups in their classes.
* The Computing department offers free revision guides and workbooks for the disadvantaged students at no cost. This is paid from the faculty budget. This ensures that all learners including disadvantaged students have the same resources available for them to use at home and at school.

We fully believe Computing can contribute to the personal development of students at Dixons Kings through:

* Developing confidence in using MS office applications which can be used outside of school environment. Learning tools and functions that will also allow them to use and create electronic work for other subjects if needed.
* Context of the development and future of computing technologies. For example, students need to understand how quick technology can change within a year as technology companies try to stay in tune with what is happening around the world and new innovate ways to lead the market in technology.
* When delivering and teaching lessons on E-safety, this provides a chance for students to develop an understanding and awareness they need to be aware of dangers in the online society and keeping safe.
* KS4 iMedia lessons also provide a wealth of opportunities to explore legal aspects that you will need to consider when working and creating new products to use in the real-life world. So when teaching students legislation, they need to understand the importance of copyright attachments to products.

Our belief is that homework is used for deliberate practice of what has been taught in lessons. We also use retrieval practice and spaced revision to support all students with committing knowledge to long term memory.

* Homework at KS3 and KS4 allows students to reflect on their learning in lessons. This allows the computing faculty to reinforce knowledge taught in lessons and look at reteaching content which students may have misunderstood in their homework tasks.
* Spacing is regularly used and can be found in ‘Do Now’ activities at KS3 and KS4 and also homework quizzes.
* Some students don’t have access to computer technology at home, therefore the computer rooms are used as homework club and then this allows students to use applications and complete their online homework.

Opportunities to build an understanding of social, moral and ethical issues are developed alongside links to the wider world, including careers:

* Will allow learners the freedom to explore the areas of creative media that interest them as well as providing good opportunities to enhance their learning in a range of curriculum areas.
* During the morning line up, a week is dedicated to ‘Internet safety week’ where students are given a daily presentation on the relevant theme. The speeches planned highlight people who have made a difference to online technology such as the inventor of the world wide web, businesses which have been successful by using the online platform, achievements and how to stay safe whilst being online.
* There are a range of units at KS4 which allows students to explore areas such as plagiarism, copyright etc. this allows students to understand the ethical issues of copying someone’s work and declaring it as their own.
* In KS3, we run a robotics club which allows further opportunity to use technology to control their products which they have created. This has allowed the students to participate in the robotics competition and allowing students to demonstrate on the product they have created once they reach the finals of the competition.

Further Information can be found in:

* Long term plans
* Schemes of work
* Knowledge Organisers
* OCR Guides
* OCR websites