KS3 Science

Aims

A robust foundation is needed from Y7 onwards to fully support GCSE and gets students GCSE ready. Our newly designed KS3 course has been seen as an opportunity to teach creatively, and develop a breadth of knowledge built on the big ideas that underpin the majority of understanding across the 3 main disciplines of Science. We aim to encourage inquisitive minds, and do not have a planned sequence of lessons, so much as a planned sequence of questions.

KS3 is often instrumental in determining post 16 choices, especially for high attaining students with aspirations to work in STEM subjects. This is where we get them interested, and we plan to deliver a course that stimulates interest in the wonder of Science but continues to develop the mastery of key skills needed to be a success at GCSE and beyond.

Course Content

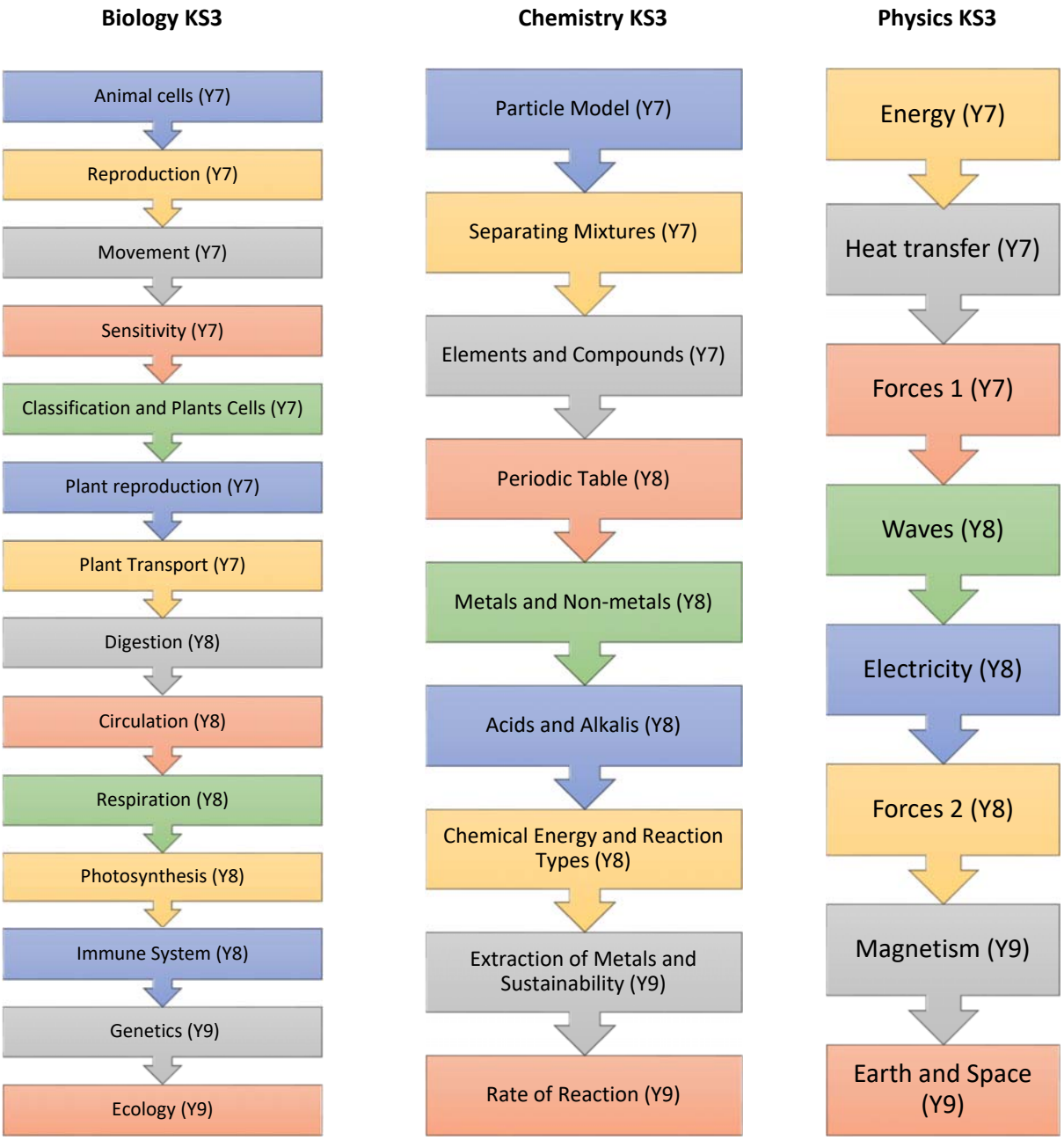
The course starts in Year 7 with three of the most fundamental ideas underpinning much of Science.

In Biology, the big idea is **what is life?**
All living things need carry out the seven life processes. These are (MRS GREN) Movement, Reproduction, Sensitivity, Growth, Respiration, Excretion and Nutrition. Underpinning these processes is the idea that all living things need to start from a single unit, cells, which develop into tissues, organs and organ systems. This will be the theme running through every process, focussing both on animal and plants.

In Chemistry, the big idea is **particle behaviour.**
An understanding of the particle model and the behaviour of particles, and the relationship of this particle behaviour with energy, is fundamental to an understanding of Chemistry (and to a large extent much of Physics and Biology). It underpins both basic and complex interactions, through from states of matter to bonding, chemical structure and the interaction between these particles in chemical reactions. Particle model will be taught to Year 7 in the first term to ensure it can be used throughout KS3, as a mechanism to describe much of the further work at KS3, and GCSE and A-level beyond.

In Physics, the big idea is **saving energy.**
This begins with pupils looking at how energy is stored and transferred in simple systems, highlighting that it is never created or destroyed – only transferred. It then moves onto looking at useful and wasted energy, and how to compare energy usage of different systems by calculating their efficiency. Pupils will be taught about the energy transfers that take place from the generation of electricity, from renewable and non-renewable sources, to the use in the home.

Science Topics for the KS3 course at Turton



Scholars' Pathway

The scholars' pathway allows students to study some of the topics in greater detail and work on extension tasks designed to stretch and challenge. Students will be expected to work at a more advanced pace, but will also be given more time and opportunities to look at the wider applications of the subject, the history of Science and Science in the news.

Organisation

All classes are taught as form groups throughout Y7 and in broadly streamed groups in Y8 and Y9. These sets are fluid and set movement can take place at key points in the year after progress reviews. Lessons are delivered using a variety of approaches, developing the pupils' listening, literacy, knowledge, numeracy, ICT and practical skills. The students are encouraged to take responsibility for their learning, to work in teams, to work independently, be creative thinkers and be reflective about their learning.

Assessment

Work is assessed continuously through regular book marking and self and peer assessment. Students complete tests and other assessed tasks at regular intervals throughout the year which are assessed by their teachers to measure progress. There is also a terminal test at the end of the year. Progress is compared against age related expectations rather than specific targets by the teacher and students are actively encouraged to monitor their own progress through the use of Learning Journeys.

Homework

Homework is on average set once every three lessons. Students will get regular learning homework that will be assessed in the form of a short test the following lesson. This is delivered consistently across all groups so that each student should receive the same core learning homework. Other homework may focus on Science literacy, numeracy consolidation and research activities. Students will develop a breadth of Science related skills making use of a variety of learning styles in their homework.