

## Lower 6 investigate the impact of mutations



This half term, biology students in Lower 6 have been learning about the role of DNA and RNA in protein synthesis. Having studied the processes of transcription and translation in detail, we then explored additional features of the genetic code. We researched the different types of mutation, namely insertion, deletion and substitution.

To develop our understanding of the impact of mutation on protein structure, we completed a group activity using bases and the genetic code table. Each group started with the same DNA sequence and used the cards to build the complementary strand of mRNA. They then translated this into a specific sequence of amino acids. The groups then introduced various mutations to their original sequence to explore the possible impact that mutations can have. They were able to see that some mutations are silent mutations, due to the degenerate nature of the genetic code. Other groups found that their change had introduced an early stop codon. Being able to add and remove the bases easily allowed us to visualise a frameshift. The variety of mutations and consequences around the room led to great discussion.

Following this activity, the students undertook some research into some genetic diseases, including sickle cell anaemia.

Mrs Jennifer Yeomans