



# LEARNING JOURNEY

## Biology

### 3.4.1 – 3.4.4 DNA, Protein synthesis, diversity and selection

#### 3.4.1 & 3.4.2 DNA & Protein synthesis

##### DNA and Genes

You will learn the structure of DNA in more detail and how it is used to synthesise proteins

##### Transcription

You will learn the processes that are involved in transcribing DNA into mRNA

##### Translation

You will learn how mRNA and tRNA are used to synthesise proteins

This module revisits topics concepts only briefly studied in GCSE. This module will build your knowledge of how DNA and RNA are used to synthesise proteins.

This module builds on your understanding of natural selection and evolution to appreciate how changes to a population can arise due to environmental factors favouring a mutation of a gene.

#### 3.4.3 Genetic diversity and mutations

##### Mutations

You will learn how changes to the DNA can cause changes to the proteins made

##### Genetic conditions

You will learn about specific genetic conditions that arise from mutations

##### Meiosis

You will learn how variation is introduced in readiness for sexual reproduction

##### VOCABULARY

<b>DNA</b>	<b>Gene</b>
<b>mRNA</b>	<b>Allele</b>
<b>tRNA</b>	<b>Mutation</b>
<b>Transcription</b>	<b>Chromosome</b>
<b>Translation</b>	

##### Non disjunction

You will learn what happens when chromosomes do not separate correctly in meiosis

#### 3.4.4 Genetic diversity and adaptations

##### Natural selection

You will learn how organisms have changed over millions of years

##### Types of selection

You will learn how different factors can change characteristics of organisms over several generations

##### Antibiotic resistance

You will learn how antibiotic resistance is related to natural selection and the dangers that arise