Subject	**Biology**
Context	Your Biology bridging work will help you gain an overview and understanding of the structure of DNA and eukaryotic cells which are fundamental to large sections of A level Biology. You will also investigate some diseases that are caused when organelles fail to function correctly. Mathematical and practical skills are important in biology. You will carry out two experiments and record the results. This will provide evidence that you can measure length and time accurately and revisit the correct structure of a table of results.
Securing	In this section you will develop your skills in dealing with biological data. You will secure your understanding of how tables are constructed and how to deal with repeated experimental data. The document is on the HGS website 'Biology – Dealing with data'.
Processing	1. Produce a summary of the following organelles found in cells: Nucleus, Nucleolus, Ribosome, Mitochondrion, Golgi apparatus, Golgi vesicles Lysosome, Rough Endoplasmic Reticulum, Smooth Endoplasmic Reticulum, Chloroplast, Cell wall and Vacuole. The following websites will give you information about the organelles found in cells. http://www.a-levelnotes.co.uk/biology-aqa-as-notes-cells-structure-of-eukaryotic-cells.html https://www.thoughtco.com/organelles-meaning-373368 For each organelle you need a **diagram** showing the structure as seen with an electron microscope, state whether it is found in **plants and/or animal cells**, and give a brief (no more than **10 words**) outline of its **function**. 2. DNA is found in the nucleus and is an important information-carrying molecule. DNA is made of building blocks called nucleotides. Produce a piece of work that covers the information below. • Give the full name for DNA. • Describe the shape of a DNA molecule. • DNA is a polymer. What does this mean? • Draw and label a diagram to show the structure of a DNA nucleotide. • Name the four bases found in DNA • How are the two strands of DNA held together? • What is a phosphodiester bond? • DNA is an information carrying molecule. What information does it contain?
Exploring	• In this task you will demonstrate your ability to measure accurately two basic measurements (length and time) and record the data correctly in tables. The document is on the HGS website 'Biology – Practical skills' This work will be stuck into your lab book in September so please write on only **one side** of your paper. • A variety of diseases are caused by organelles functioning incorrectly. You have already summarised the function of each organelle, so refer back to this work.

	The following organelle malfunction causes the diseases listed. Research the cause of **one or more** of these diseases and explain the reason for the symptoms. • Mitochondrial complex 1 deficiency • Lysosomes: Niemann-Pick disease type C • Golgi: Alzheimer's • Ribosomes: Diamond Blackfan anaemia • ER: Hypothyroidism (congenital goitre) • Nucleus: Hutchinson-Gilford Progeria Syndrome.
Reviewing	• Test your knowledge of the important cell organelles by answering the questions on the Socrative quiz Biology bridging quiz 2024. Please put in your full name when asked. Use the QR code below to access the quiz.