

Autumn Term

Year 11 B13 Reproduction

Aiming for Grade 4

Extended Homework Assignment

Name: _____

Set: _____

Instructions

A printed copy should be handed into your teacher.

The knowledge required to complete this assignment will be supported in class in lessons of the half term.



B13 Reproduction – Aiming for Grade 4

Aims

The aim of this homework is to help you revise the main topics in Chapter 13, Reproduction.

Learning outcomes

After completing this activity, you should be able to:

- state the advantages and disadvantages of asexual and sexual reproduction
- state what occurs during the process of meiosis
- describe the structure of DNA
- research the aims of the Human Genome Project
- interpret a genetic cross diagram.

Task

Using knowledge you have gained in lessons and your own research, complete the 4 tasks below.

Questions:

Part 1 – Asexual and sexual reproduction.

Write the following table headings on a piece of paper.

asexual reproduction	sexual reproduction
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Look at the statements below and copy them under the correct heading. Colour all the advantages in red and the disadvantages in blue (or use a key of your choosing)

only one parent needed	two parents / gametes needed	slow
fast	produces variation	produces identical offspring (clones)
time and energy required to find a mate	time and energy efficient	no partner needed

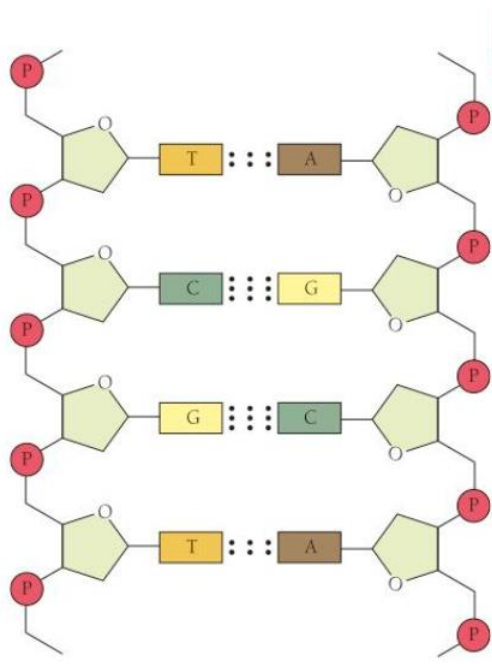
Part 2 – Meiosis

The below statements describe the process of meiosis, but are jumbled up. Write the statements in the correct order and then draw a simple diagram to illustrate each stage.

Second division
Cells with normal number of chromosomes formed
First division
Four gametes formed with a single set of chromosomes
Genetic information in cells copied resulting in cells with four sets of chromosomes

Part 3 – The structure of DNA

Using the keywords provided, label the structure of DNA. You can cut this diagram out to stick onto separate paper, or draw a copy of it.



- Words to use:

 - Adenine
 - Thyamine
 - Cytosine
 - Guanine
 - Phosphate group
 - Deoxyribose sugar

Part 4 – The Human Genome Project

Enter “An Overview of the Human Genome Project” into a search engine and use the information to answer the following questions:

4 a What is the goal of the human genome project?

.....

b Approximately how many human genes are there?

.....

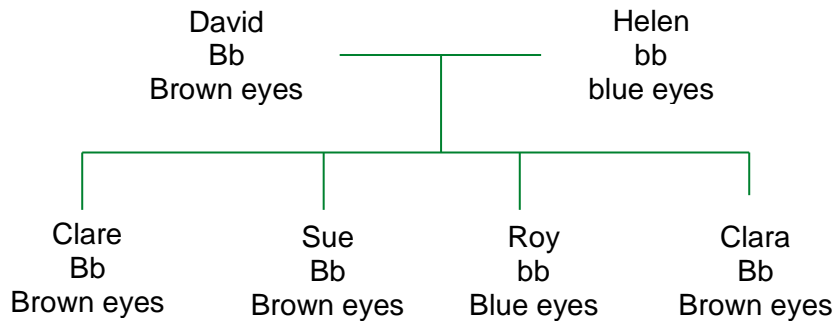
c When was the full sequence completed and published?

d What do health care providers hope to use this human genome project for?

.....

Part 5 – Inheritance

Look at this family tree and use it to answer the questions underneath.



5 a Name one person that has a homozygous genotype.

.....

b Name one person that has a heterozygous genotype.

.....

c What are the phenotypes in this family tree?

.....

d What is the ratio of brown eyes to blue eyes in David and Helen's children?

.....

e What would the homozygous genotype be for brown eyes?

.....