

FURTHER GO



Science

Barnet
Southgate
College 
HeadStart

Biology – Task sheet

Task 1

Create your own Punnett square for a characteristic of your choice e.g. eye colour, tongue rolling. You can choose the letters to use just remember to include a key.

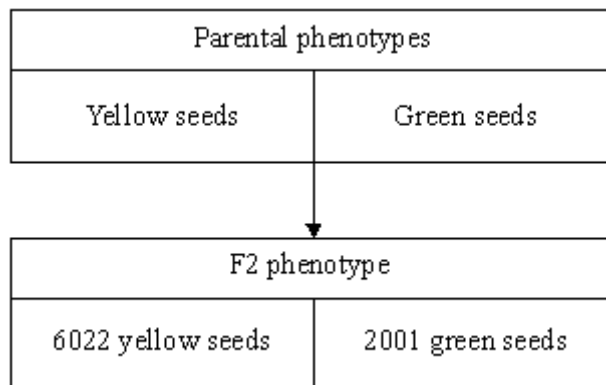
Task 2

Write a paragraph describing your Punnett square in detail, use the following words in your description as appropriate: homozygous, heterozygous, dominant, recessive, alleles, genes and gametes.

Task 3 – Complete the questions below.

Q1 In the 1850s an Austrian monk, called Gregor Mendel, carried out a series of investigations on heredity.

- (i) What plants did he use for his investigations?
- (ii) In his work he assumed that one gene controlled one characteristic. He started his investigations with pure breeding parents. Use a genetic diagram to show how he explained the following result.



Q2.

For many years scientists studied the organisms in an area of grassland.

One of the animals was a species of black fly. In this population only one allele **B** existed for colour. All the flies were homozygous **BB**.

A mutation occurred which produced a new recessive allele **b** which could produce a green colour.

- (a) Draw **two** genetic diagrams to show how the single **b** allele in just one fly was able to produce homozygous **bb** green flies in two generations.

First generation

Second generation

- (b) Although this new allele was recessive and the mutation only occurred once, a large proportion of the fly population was soon green.

Suggest in terms of natural selection why the recessive **b** allele was able to spread through the population.

Resources to help you

<https://www.bbc.co.uk/bitesize/guides/zcdfmsg/revision/2>

https://www.youtube.com/watch?reload=9&v=PyP_5EgQBmE

<https://www.youtube.com/watch?v=Vk8xu9LAW1E>

<https://alevelbiology.co.uk/notes/genetics/>

Any good GCSE or A level textbook