



Province of the
EASTERN CAPE
EDUCATION

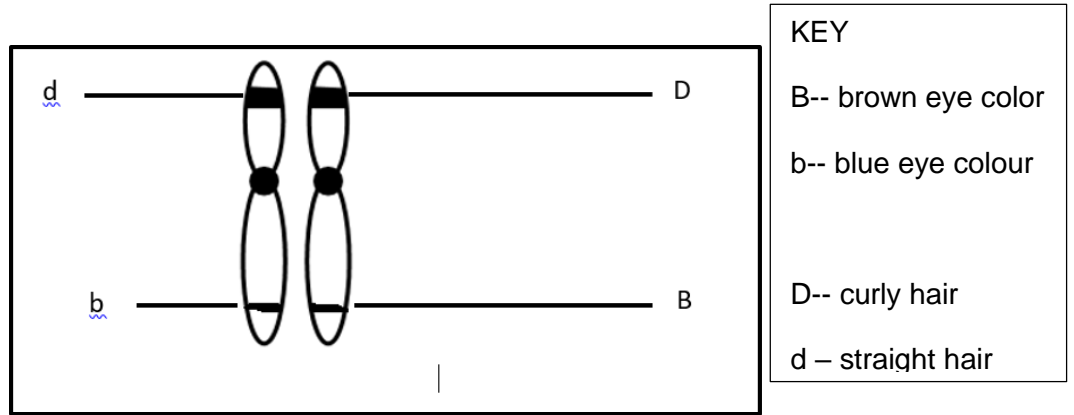
DIRECTORATE SENIOR CURRICULUM MANAGEMENT (SEN-FET)

HOME SCHOOLING SELF-STUDY WORKSHEET

| | | | | | |
|------------------------|---|---|----|-----------------------|---------------------|
| SUBJECT | LIFE SCIENCES | GRADE | 12 | DATE | 30 March 2020 |
| TOPIC | GENETICS AND INHERITANCE: CONCEPTS IN INHERITANCE and MONOHYBRID CROSSES | TERM 1 REVISION | | TERM 2 CONTENT | ✓ |
| TIME ALLOCATION | 45 minutes | <u>TIPS TO KEEP HEALTHY</u> | | | |
| INSTRUCTIONS | Use Mind The Gap Study Guide and read: <ul style="list-style-type: none"> • 5.1 Key concepts pg. 27-28 and • 5.2 Genetic Crosses pg. 29 <p>Answer the questions on the Worksheets below</p> | <ol style="list-style-type: none"> 1. WASH YOUR HANDS thoroughly with soap and water for at least 20 seconds. Alternatively, use hand sanitizer with an alcohol content of at least 60%. 2. PRACTICE SOCIAL DISTANCING – keep a distance of 1m away from other people. 3. PRACTISE GOOD RESPIRATORY HYGIENE: cough or sneeze into your elbow or tissue and dispose of the tissue immediately after use. 4. TRY NOT TO TOUCH YOUR FACE. The virus can be transferred from your hands to your nose, mouth and eyes. It can then enter your body and make you sick. 5. STAY AT HOME. | | | |

WORKSHEET GENETICS TERMINOLOGY EXERCISE- Lesson 1

1.1 The diagram below shows alleles controlling skin colour and hair shape



1.1.1 What is an allele?

.....(1)

1.1.2 Differentiate between the terms phenotype and genotype.

.....(2)

1.1.3 Name the characteristics controlled by dominant alleles in the diagram above.

.....(2)

1.1.4 Write the genotype for an individual who is heterozygous for hair shape. -----(1)

1.1.5 Give the genotype of an individual with blue eye colour. -----(1)

1.1.6 Explain why an individual with Dd has curly hair.

.....
.....
.....(4)

1.1.7 Give the genotype of an individual with curly hair. -----(1)

1.1.8 Why is individual with genotype dd said to be homozygous?

.....
.....(2)

(14)

LEARNER ACTIVITY: MONOHYBRID CROSSES

1. In humans, the allele for blue (**b**) eyes is recessive to the allele for brown (**B**) eyes. A man, heterozygous for brown eyes marries a woman with blue eyes. Show how the possible genotypes, phenotypes and ratio of individuals with brown and blue eyes in the F₁-generation may be obtained. (6)

2. In rabbits the dominant allele (**B**) produces black fur and the recessive allele (**b**) produces white fur. Study the table below showing the genotypes of four rabbits.

| | | | | |
|----------|----|----|----|----|
| Rabbit | 1 | 2 | 3 | 4 |
| Genotype | BB | Bb | Bb | bb |

- 2.1 What are the phenotypes for rabbits 2 and 4 respectively (2)

2.2 State the genotypic ratio that is shown in the table above. (1)

2.3 If rabbits 1 and 4 were mated and had 12 offspring, how many of these would you expect to be black? (1)

2.4 Rabbit 2 was allowed to breed with rabbit 3. Use a genetic cross to show the possible phenotypes and genotypes of the F1 generation for fur colour. (6)

TOTAL = 16

HOMEWORK: Q 2.4 P2 NOV 2018;
Q 1.4 NOV 2017