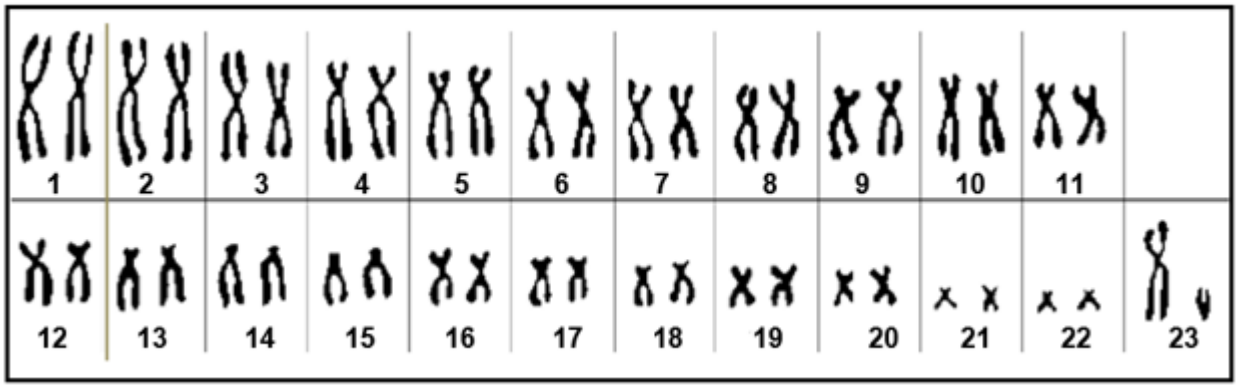
Province of the
EASTERN CAPE
EDUCATION

DIRECTORATE SENIOR CURRICULUM MANAGEMENT (SEN-FET)

LIFE SCIENCES HOME SCHOOLING SELF-STUDY WORKSHEET 4

SUBJECT	LIFE SCIENCES	**GRADE**	12	**DATE**	09/04/2020
TOPIC	SEX DETERMINATION AND SEX-LINKED INHERITANCE	**TERM 1 REVISION**		**TERM 2 CONTENT**	✓
TIME ALLOCATION	45 MINUTES	**TIPS TO KEEP HEALTHY** 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.**			
INSTRUCTIONS	Use the following resources to answer the worksheet: • Textbook • Mind The Gap Study Guide pg. 32 and 33 • EC Sex determination and Sex-Linked Inheritance Virtual Lesson Video • Mindset Learn website • https://learn.mindset.africa/resources/life-sciences/grade-12				

1 The diagram below shows a karyotype. graph below represents the age when puberty is reached by boys and girls in a population.



1.1 How many of the following are present in the karyotype:

(a) Chromosomes (1)

(b) Autosomes (1)

(c) Gonosomes (1)

1.2 How many chromosomes would be present in the gametes produced by this individual? (1)

1.3 Is the karyotype in the diagram that of a male or a female (1)
(5)

2 Haemophilia is a genetic disorder caused by a recessive allele on the X chromosome.

A haemophiliac female marries a normal male. Use a genetic cross to show why all their sons will be haemophiliacs. **(6)**

3 Haemophilia is a genetic disorder caused by a recessive allele on the X chromosome.

A haemophiliac female marries a normal male. Explain (without using a genetic cross) why all their sons will be haemophiliacs. **(4)**

4 Colour blindness (Daltonism) is a sex-linked disorder caused by a recessive allele **(X^d)**.

A woman who is heterozygous for normal vision married a man with normal vision. Use a genetic cross to show the possible genotypes and phenotypes of their children **(6)**

5 Explain why there are generally more males than females with colour-blindness in a population **(4)**

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