Full lesson transcript for Mrs. Letsiba of School B

Lesson 2: Genetics and inheritance on 10 March 2020

Details

- This lesson transcript represents 35 minutes of teaching time.
- A female black South African teacher was teaching the topic of genetics and inheritance to 15 male and female learner participants all in grade 12.
- The lesson took place at a former model C co-educational High school in Johannesburg East district in Gauteng on Tuesday 10 March 2020.
- When used by the teacher, the learners' names have been changed to protect anonymity.
- The textbook utilised during the lesson is Exam Fever Life Sciences Grade 12 2nd edition published by Exam Fever Publishers.
- Used the chalkboard and chalk.

Transcription conventions

Symbol	Signification
T:	A verbal contribution belonging the teacher
L:	A verbal contribution belonging to any individual learner
Ls:	A verbal contribution belonging to two or more learners
…	Noticeable pause of less than 1 second in a turn, which could be due to reformulation or hesitation
—	Sound abruptly cut off e.g false start Truncated word Formal made shorter e.g S-
/ /	Words between slashes show uncertain transcription (not clearly known or understood.

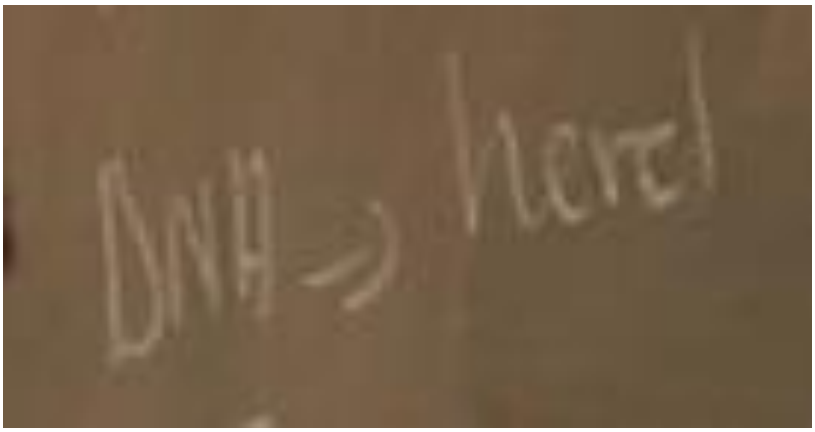
/ ? /	Inaudible utterances
[ ]	Words in brackets indicate non-linguistic information e.g [Laughter], throat clearing, smile, applause, sigh happily/deeply, contently, swallowing, nodding, shaking head dance or movement towards/away
( )	Parenthesis around tone units indicate words spoken in a sotto voice under one's breath (in a very quiet voice)
(( ))	Overlapping speech (learners and teachers)
,	Slight pause
?	High rising intonation
.	Falling intonation at the end of tone unit
:	Colon following a vowel, indicates elongated vowel sound or extending length of sound e.g Die:d
::	Extra colon indicates longer elongation
↑	A step up in pitch/ high pitch (high quality sound)
↓	A shift down in pitch (low quality sound)
^	A caret indicating high pitch level e.g ^weird
-	Low pitch level
— —	Self-interruption or repair
abc	Best guess transcription
ALL CAPS	Utterance is louder/said with extra stress/emphasised compared with surrounding words

/	Rise tone e.g …saying something, /
\	Fall tone
V	Fall-rise-tone
Λ	Rise-fall-tone
CAPS	Prominent syllable e.gs Kb On or FAthEr

EPISODE 1:RECAPPING DNA THE CODE FOR LIFE

1. Mrs. . Letsiba: So, I introduced ehh…this topic that is ehh… [writing on the board]

genetics ehh…genetics a:nd…ehh…the inheritance…genetics and the inheritance… and then I said to you that ehh…we need ehh…to go back ehh…to our first ehh…chapter which is ehh…that is ehh...the DNA… ehh…the code of ((life)). [Writing on the board]

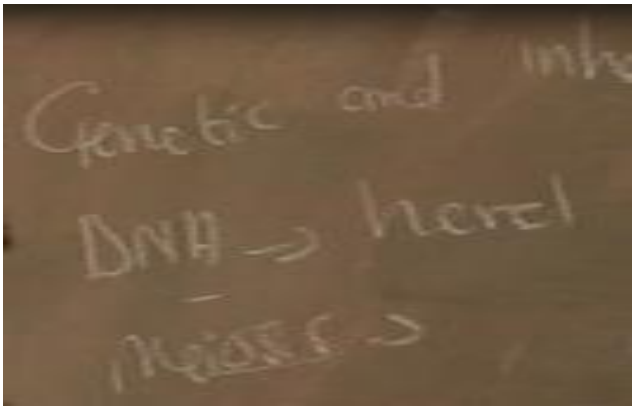


…we go back to DNA the code of life…and then we find out ehh…what we learned ehh…in the DNA code of life.

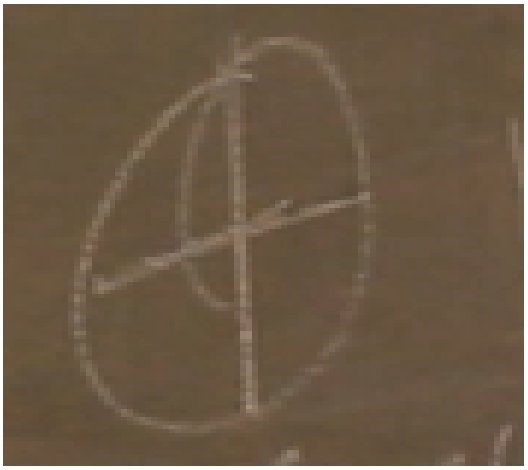
2. We said that one of ehh…the characteristics or one of ehh…the function of ehh…the DNA is that it transfers THE characteristics from THE parent to THE ((offspring)) neh...

EPISODE 2: RECAPPING MEIOSIS

3. And then we continue with the second chapter that was ehh…meiosis neh… [pointing to the board]

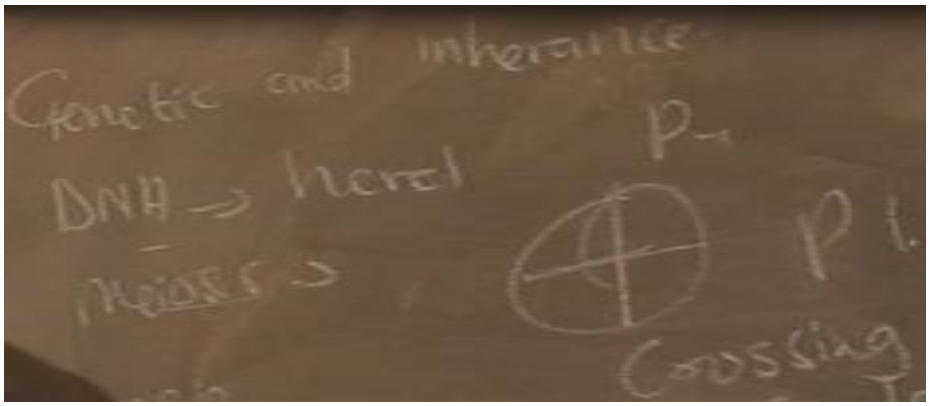


… and we said that in meiosis ehh…we are going to have ehh…our parent cells being divided ehh…into FOUR daughter cells neh… [pointing to the board]



… and these ehh…four daughter cells which are ehh…going to be different…there will be variation in them.

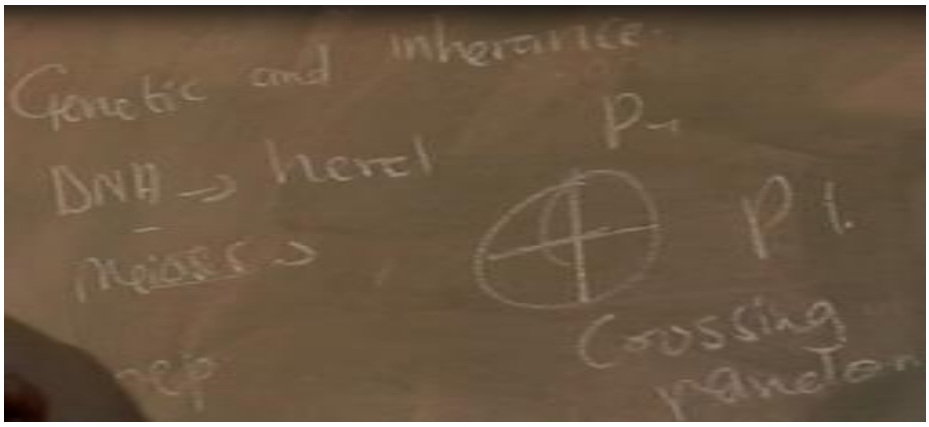
4. I explained to you that the thing that causes variation in these ehh…four daughter cells here is ehh…what…ehh…the… [writing crossing on the board]



…crossing…ehh…((over)).

5. So, we need to…keep on reminding ourselves…that we have ehh…the crossing over.

6. Ehh…remember again it is when…in prophase ehh…one, where we have the crossing over and the other thing that made…these daughter cells TO be ehh…to be ehh…genetically different…is because of what…the… [writing random on the board]



((random arrangement)) neh…random ehh…arrangement of the…of the chromosomes at the equator in ehh…metaphase…you understand?

7. In metaphase 1, prophase 1…we are going to see that ehh…crossing over…random ehh…arrangement of THE of— of the chromosomes…you understand…

8. You remember what I have said again about ehh…this ehh… crossing over story…that ehh…these ehh… homologous…ehh… chromosomes …they are going to be lined [using hands]

…next to each other.

9. Can you see the sequencing that ehh…we are having what…the DNA…that will do what…that is ehh…wi:ll transfer those ehh…hereditary characteristics.

10. And then came in meiosis.

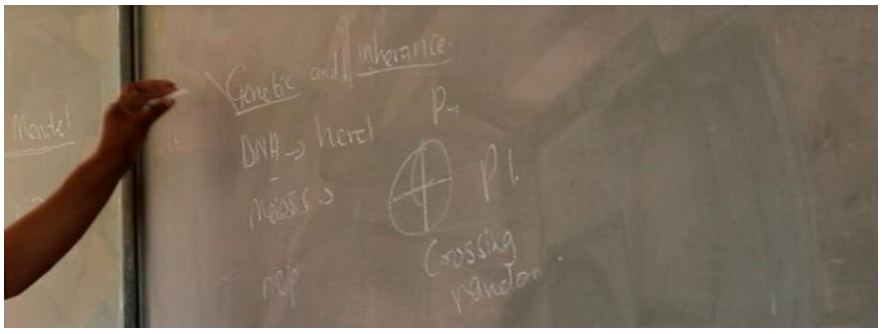
11. Even though those characteristics…

…they are-- were transferred…but what we have to know…is that they are what…that they are going to be ehh…different neh….

12. Ehh…we said that the poi:nt whereby…this is taking place…crossing over is taking place is called the chiasmata neh…and will be what…when they are lined…

…next to each other they will be ehh…the ((bivalent)) you understand!

13. Then we MOVED ehh…from ehh…meiosis because we want to come to this ehh…chapter here. [Pointing to the term genetics and inheritance on the board]



…that is genetics and inheritance.

EPISODE 3: RECAPPING REPRODUCTION

14.		So, we move to your reproductive eehh… strategies neh…and we learned about all those strategies…the ovipary, the internal, the external fertilization you understand…
15.		Then we go to human…ehh…reproduction.
16.		That is ehh…we learn more about ehh…the fusion of the male and the female ehh…gametes that will form a zygote…
17.		And that zygote again…ehh…will divide ehh…by the process of ehh…mitosis and be what… be morula…from morula we have what?
18.	Ls:	Blastocyst!
19.	Mrs. Letsiba:	The blasto-cyst neh…not the blastocyte…[coughing] okay, ehh…that is THE blastocyst.
20.		Then we have what…that ehh…the implantation inside ou:r uterus as females.
21.		And remember the hormonal ehh…control there…we are going to have ehh…that corpus luteum that is going to secrete what…ehh…progesterone to maintain the pregnancy… until such a time that ehh…we have that ehh…that child to be ^born…you understand?
22.		And then from there we now come to this ehh…genetics and ehh…the inheritance.

EPISODE 4: INTRODUCING INHERITANCE

23.		So, what I want to emphasise here…I was saying to the other class that ehh…I am not talking about inheritance…

…when your parents are dead and then…you start fighting.

24. Always when you are watching your television you see uHitler [IsiZulu way of referring to Hitler] neh…

25. When you see those kinds of -- the ehh…programs…ehh…you know they are fighting for ehh…the material things neh...

26. Ehh…because my father was having this car, now…ehh…the car belongs to me…^NO!

EPISODE 5: GENETICS AND INHERITANCE

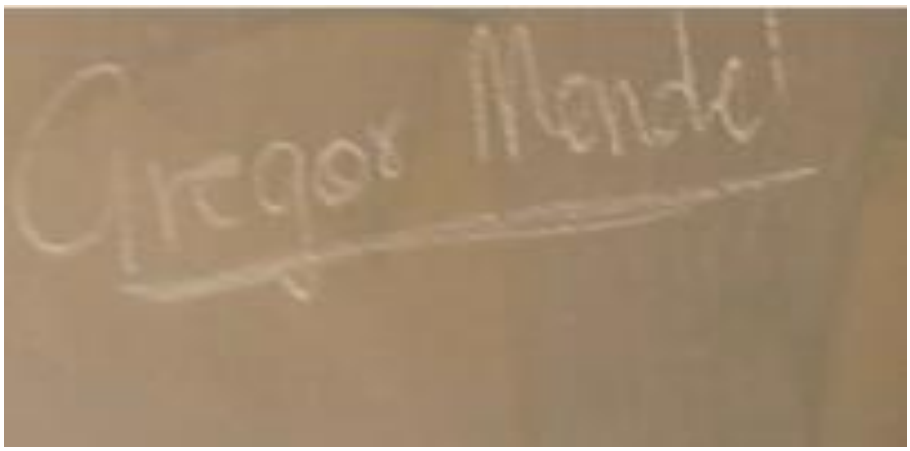
27. Ehh…in genetics and inheritance we are talking about the ehh…genes that you have INHERITED [using hands]

…ehh…from ehh…both ehh…

…the ehh…two ehh…parents…you understand?

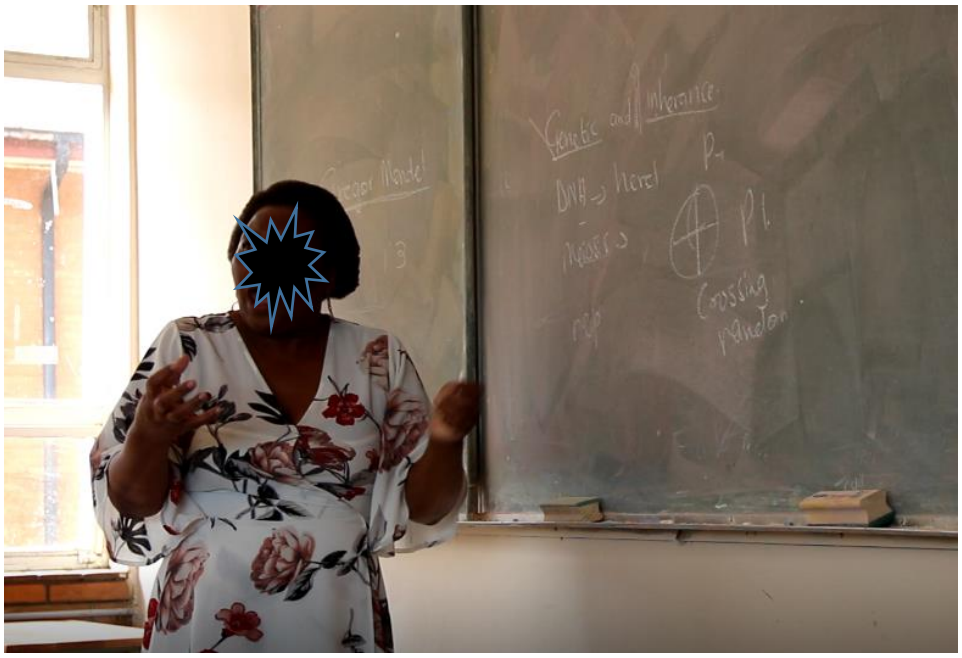
28. Ls: Yes!

29. Mrs. Letsiba: So, we have this ehh… the Austrian ehh…monk…that is ehh… [writing on the board]



…Gregor ehh…Mendel.

30. We have ehh…the Austrian monk neh…we have the Austrian ehh…monk…this is the scientist ehh…who came up ehh…with the study of…of GENETICS…you understand?
31. Ls: Yes!
32. Mrs. Letsiba: That is ehh…Gregor ehh…Mendel.
33. So, you will find this…ehh…this man here [pointing to his name on the board] Gregor…ehh…question 1.3… in your question 1.3 remember ehh…that in that ehh…question that is the matching ehh…ehh…columns neh…A, B and whatever.
34. So you will be given this man Gregor Mendel [pointing to his name on the board] and then ehh…father of genetics…maybe you will be given ehh…Charles Darwin, you will be given ehh…Watson and Crick.
35. So, with ehh…Gregor ehh…Mendel, you have to know ehh…he is the father of genetics.
36. He is the one who came up with ehh…how ehh…we are inheriting ehh…how we are inheriting… [using hands]
37. Kamogelo: The genes!
38. Mrs. Letsiba: …ahh…Sam it is still my ehh…time…ehh…Gregor Mendel came up with ehh…HOW [using hands and head]



…we are going to inherit.

39. Did we not say that ehh…during fertilization ehh…that 23 [writing on the board]

… number of chromosomes ehh… from the P and the 23 ehh…from the M neh…that is the paternal and the ((maternal)).

40. ↓Already when we are saying that ehh…we have an egg that is ehh…fertilized by ehh…spermatozoan.

41. Then ehh…that child will have how many…?

42. Ls: 46.

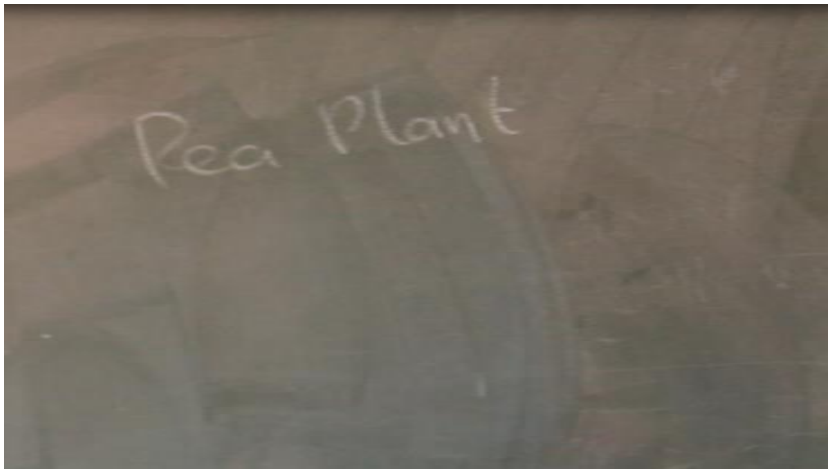
43 Mrs. Letsiba: …number of the chromosomes [using hands] …that you have ↓already ehh…inherited what…those characteristics.

44. We are not going to say that when / ? / …immediately, that fertilization ehh…has taken place neh…

45. And then ehh…the zygote is there we GET 46 number of ehh…of the ehh…chromo- the chromosomes…you understand?

46. And so, Gregor Mendel as the Austrian ehh…monk…he was using ehh…THE ehh…pea ehh…plants.

47. He was using the pea plants… [writing on the board]



… and I have said to you what…we need to know whenever we talking about the allele…what is ehh…the allele…?

48. When we are talking about the ehh…co-dominance what is the ehh…co dominance neh….

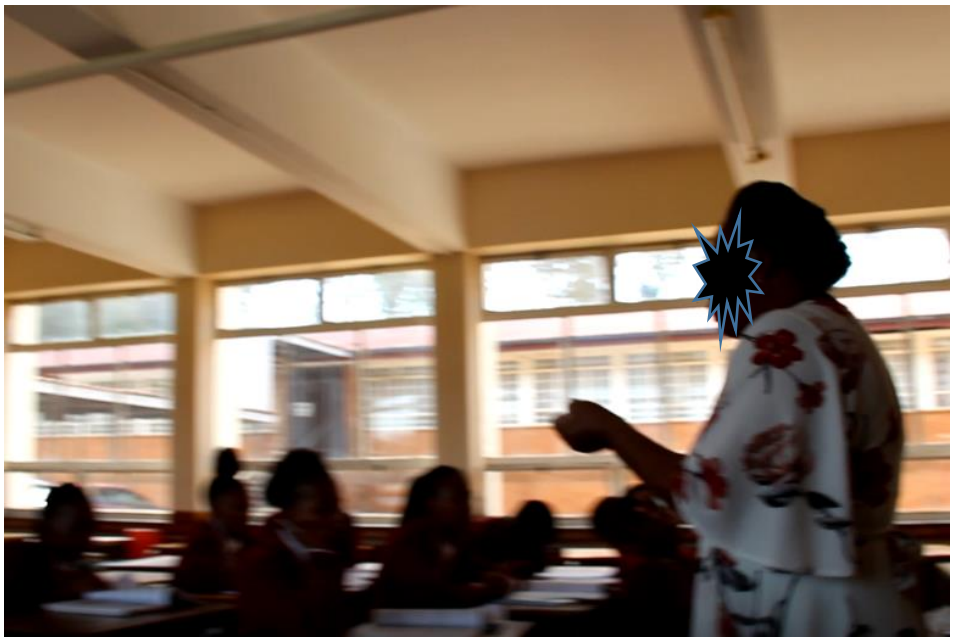
49. You look at madam Letsiba [referring to herself]

…and you are able to do what…to describe me…you understand…that is my PHENO-TYPE…

50. But before we can even talk about ehh…that phenotype…

…we have what---THE— the ehh…GENO— ehh…TYPE… [writing on the board]

the what…the genotype…the meaning of ehh…the genotype is the genetic makeup of an organ— ism…the genetic makeup of an organism… [moving towards the learners]



51. And then we what-- which means it is that ehh…it is this genotype that will bring [using open hands]

…about my ehh… pheno— type…

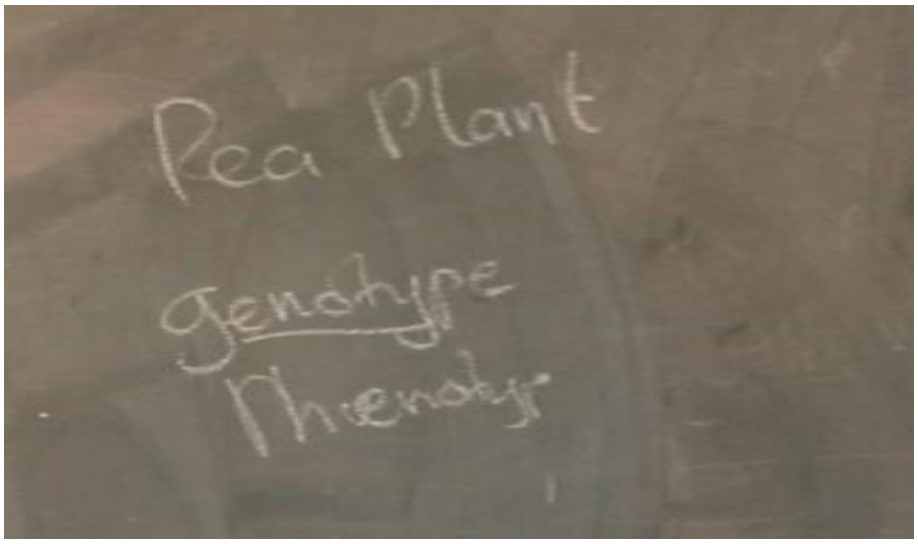
…you understand people! [Moving towards the learners]

52. Ls: Yes!

53. Mrs. Letsiba: You understand!

54. Ls: Yes!

55. Mrs. Letsiba: Okay, so this is the genotype… the genetic makeup and then we have what… THE— the pheno— type [writing phenotype on the board]



… then what it will lead to the physical appearance…the physical appearance of the individual.

56. If now I have to explain or describe how Thando ehh…looks like, I will be able to do that…you understand!

57. And some of you ehh…during ehh… parents meeting-- I always say that…ehh…last week I came across ehh…Mario's mother…

58. I did not ask that…ehh…are you ehh…Mario's mother… [disturbance from outside] ehh… by looking at her physical appearance and Mario's ehh… phenotype, you understand!

59. Both of them they are ehh…dark in co— in ((complexion)) …ehh…some of the features are very much ehh…similar.

60. So, it is what…it is the ehh… PHENO-TYPE.

EPISODE 6: COMPLETE DOMINANCE

61. Mrs. Letsiba: And then we have the COMPLETE-- Gregor Mendel also came up with THE ehh…this… [writing on the board]

… COMPLETE ehh…the complete ehh…dominance.

62. So with the complete ehh…dominance we are going to have ehh…two alleles neh…ehh…the other one ehh…that will ehh…complete the other and the other one that will be ehh…dominant and the other one that will be what…ehh…recessive.

63. Can we go quickly to our study guide that is page… [opening the study guide] page…page ehh…30…ehh…on page ehh… 31.

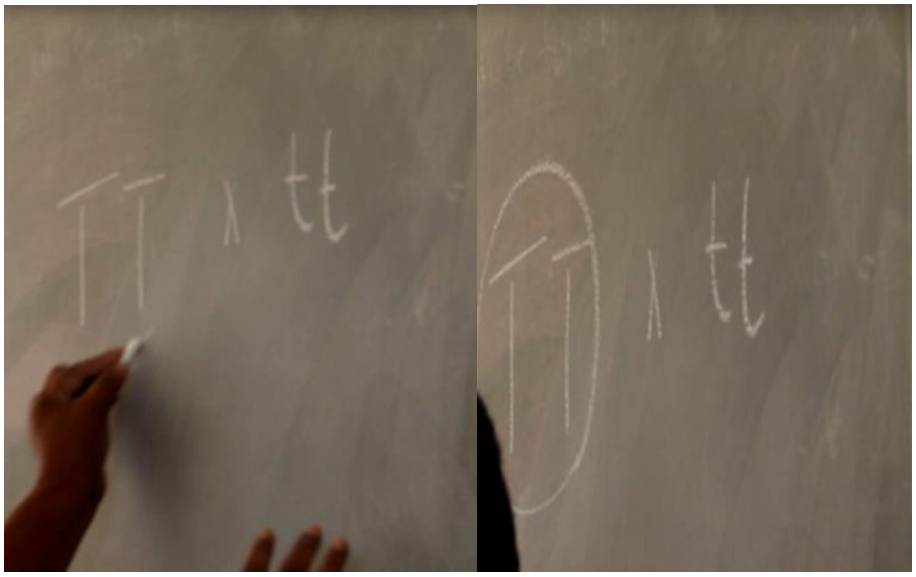
64. [Reading from study guide] Ehh…the "co— complete dominance ehh…only one characteristic is what…is EXPRESSED" neh… [using hands]

…only one ehh…characteristic is expressed.

65. Maybe as he was doing ehh… his experiments Gregor Mendel… he uses… as I was saying to you-- that he uses the pea plant…one characteristic neh…he uses one and the tall plant [writing on the board]

… and the short plant…he uses ehh…the tall plant and a short ehh…plant…whereby ehh…in his complete ehh…dominance.

66. So, because of one characteristic then we have what ehh…the T [writing on the board]



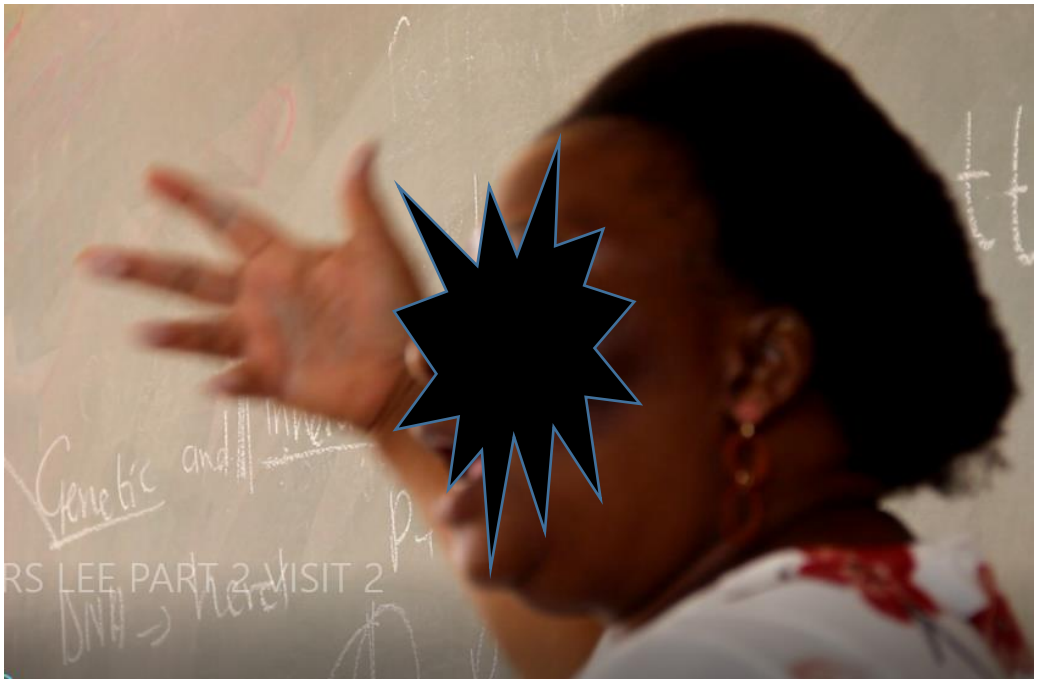
… and then we have ehh…small lette:r t.

67. So ehh… the small I mean the capital letter T neh…that will stand for THE TALL ehh… [writing on the board]

… PLANT plant.

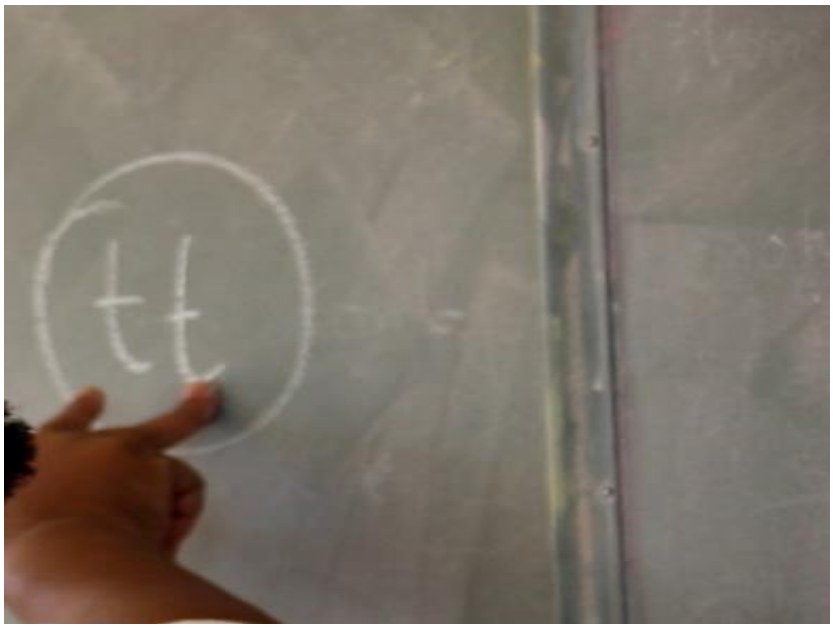
68. So, we are doing what here…we are EXPLAINING ehh…THE ehh…that ehh…phenotype of this plant…

69. What type of a plant …how-- what is the height of the plant?



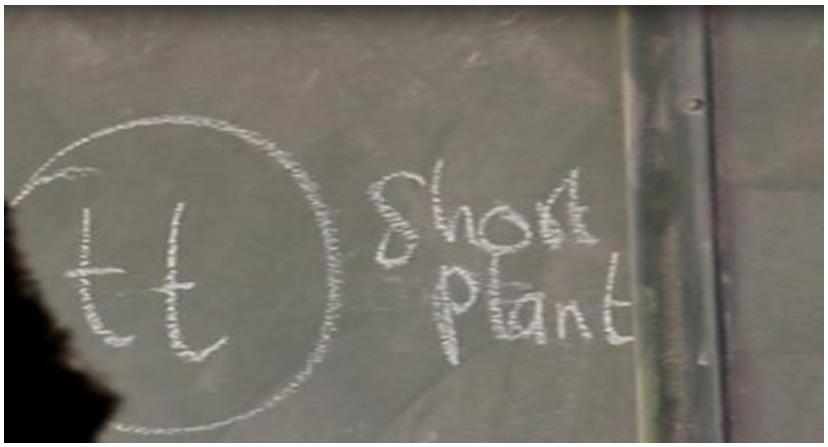
70. So, we are able-- it is something that we can see neh…that we say that ehh…the plant i:s ehh… tall.

71. And then we have another [writing on the board]



ehh…the tt that is small letter t that is ehh what…is ehh…((short))

ehh…((plant)).

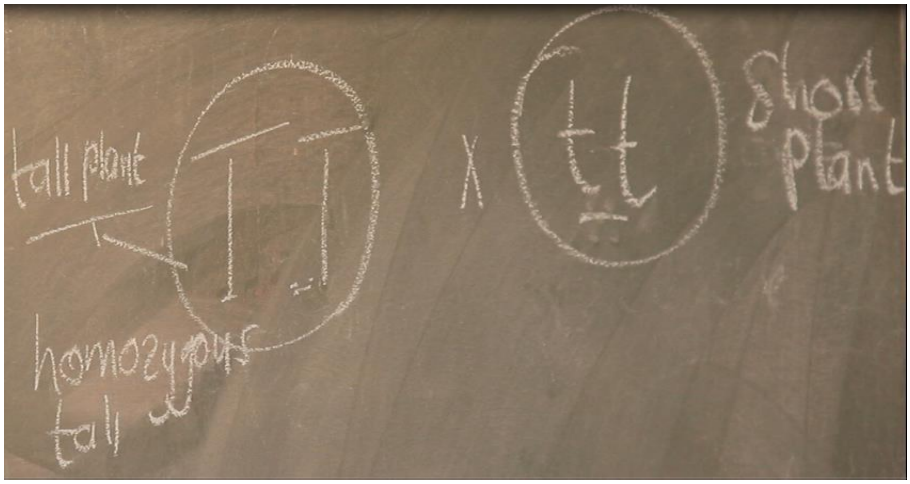


72. So, then Gregor Mendel…using ehh…the tall and also ehh…the short plant to see how many of ehh…this ehh…offspring are going to be tall and how many of ehh…these offspring are going to be ehh…to be ((short)) neh…

73. A::nd ↓it is very much important that ehh… before you can even-- we are referring to this-- if we are going to do ehh…this crossing where we are going to do this type of the crossing where we find out how many of these… of these ehh…offspring are going to be tall and how many of them are going to be ehh…short.

74. Then we will be ehh… talking about what we call the homo— ehh…the mono— hybrid ehh…process.

75. So ehh…TWO capital letter T neh…we are referring to them as the [writing on the board]



… homo— zygous ehh…tall because of these ehh…two ehh…capital letters neh...

76. And then here we have ehh…the homo— zygous ehh…short.

77. I want us to go back ehh…to the…our study guide and let us see what the word homo- zygous stands for [putting on her reading glasses].

78. [Reading from the study guide] Ehh… "an individual having TWO of the same gene" neh…an individual ehh…having ehh…two of the same gene for a particular…

ehh…characteristic neh…for a particular characteristic.

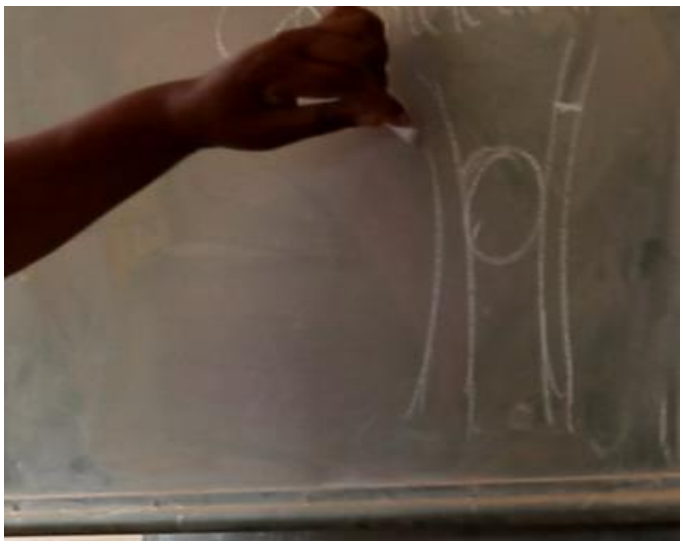
79. Remember, again ehh... [drawing on the board]

…we have ehh… our ehh…our—

80. Ls: Chromosomes!

81. Mrs. Letsiba: …ou::r chromosome here neh…so on this ehh-- [disturbance: learner talking to the teacher]

82. Ehh... on this chromosome we have ehh…those alleles neh…you all know we have the allele ehh…for ehh…the brown eye… [writing on the board]



… and then ehh…we also have the allele for ehh…the ehh… [writing on the board]

…black ehh…eye.

83. ↓Remember what I have said… I do not know if it is this class or the other class that ehh…it is very much important that you know yourself neh…

84. Do not be only concerned about am I beautifu::l…/ ? / whenever you are standing in front of the mirror yo::u are here-- you are concerned about those pimple::s neh… or you are just concerned about other things.

85. If you are-- I am talking here of the biological ehh…parents neh…

86. I am not talking about the step, the step, the step.

87. So, biological ^YOU SIT DOWN you understand ehh…if you have ehh…your st-- ehh…both yo— ur…biological ehh…parents.

88 You look at them…what have I inherited?

89. What ehh…is the colour of my eyes?

90. Is it black or is it ehh…brown neh…?

91. Eeh…is it black or brown?

92. Then you look as-- ehh…as you are busy ehh…eating your ehh… breakfast there neh…

93. And then telling them lies…so, wena [IsiZulu word for ‘you’] at the same time you know exactly, I want to find out if ehh…I have these black eyes that I have…I inherited from my mother or fro:m MY father.

94. So immediately, immediately, immediately, immediately, ehh…you see that, then you have to know that okay, I have ehh…THE ehh…the ehh…black ehh… eyes neh…I have the black eyes.

95. I do not have ehh…th:e…the ((brown)) ehh…eyes.

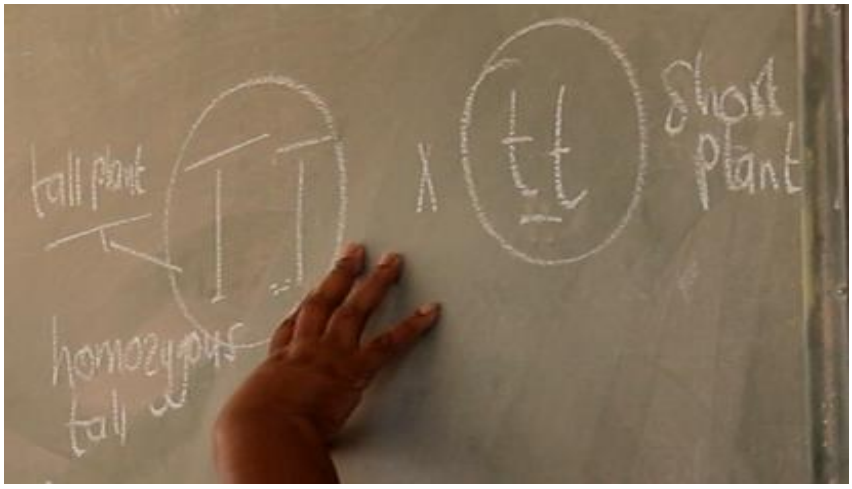
96. So, meaning that ehh…these ehh…black eyes they are dominant ehh…trait neh…

97. So, when you look at yourself, not everything that ehh…you have is ehh…dominant neh...

98. Some will be dominant some ehh…characteristics will what… ehh…will be ehh…((recessive)) ...you understand!

EPISODE 7: MENDEL AND GENETIC CROSS

99. So, as ehh…Gregor Mendel here [showing it on the board]

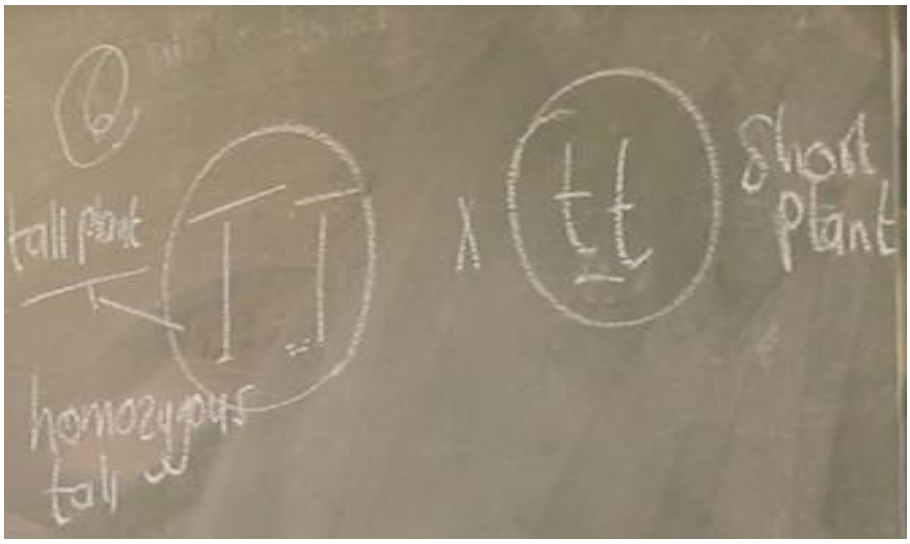


… with ehh…this plant here the tall and the ehh…the short plant.

100. The homo—zygous tall and also the homo—zygous ehh…short neh… [still showing on the board].

101. So, he started to do what…to do ehh…his ehh…crossing.

102. So, we have what people…we ha:ve [consulting the study guide] …ehh…the first thing that we need to write there… because normally this it can be around [writing a '6' on the board]



…six to ehh…to seven marks.

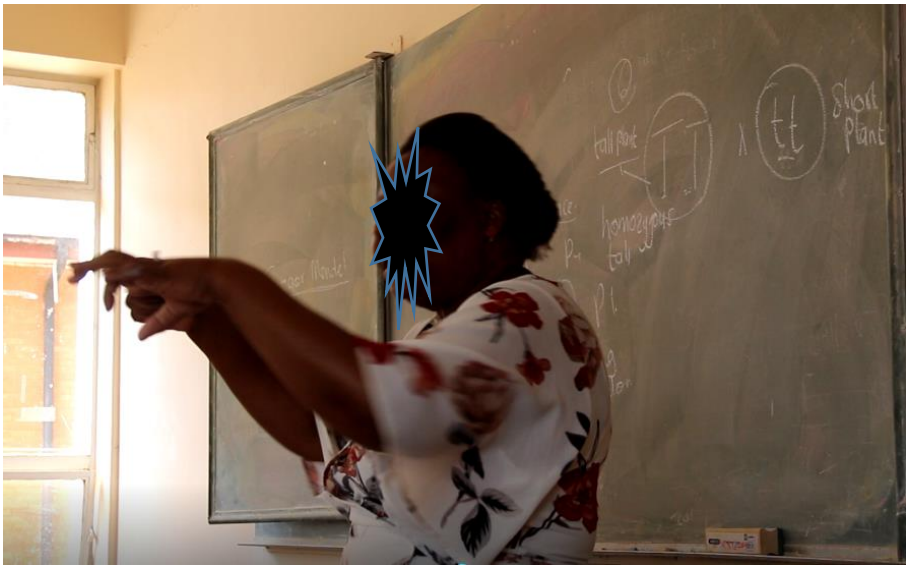
103. I always tell you that you must ^find out where the six marks are coming from.

104. They are not just going to give you marks because you have written the ehh…tt times tt.

105. Then they are giving you ehh…six-- the way I-- I forever show you diagrams…

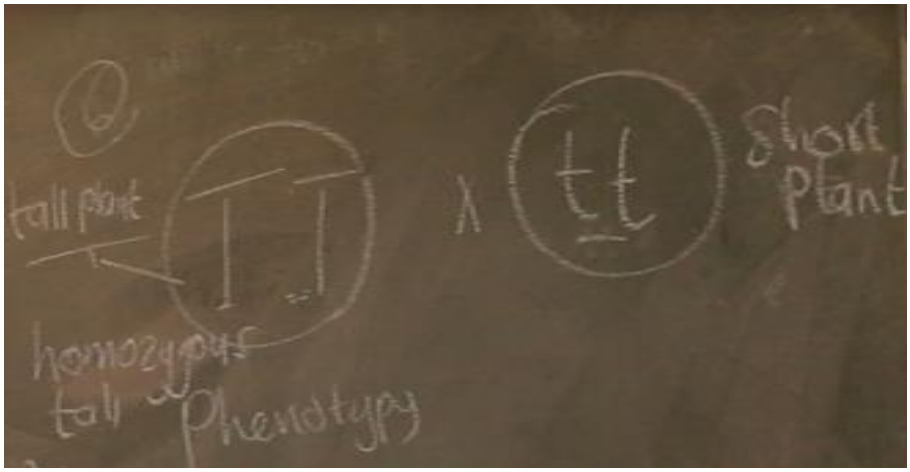
106. Whenever you are plotting a graph-- if the graph is saying seven marks neh…you need to know then that-- where these marks are coming from neh…where are you going to lose ehh…marks… [using hands]

107. Your plotting, your scale, your labeling, you::r ehh…your caption,



…that must involve what…ehh…the two ehh…VARIABLES you understand!

108. So, we have what here…we have…THE ehh… [writing on the board]



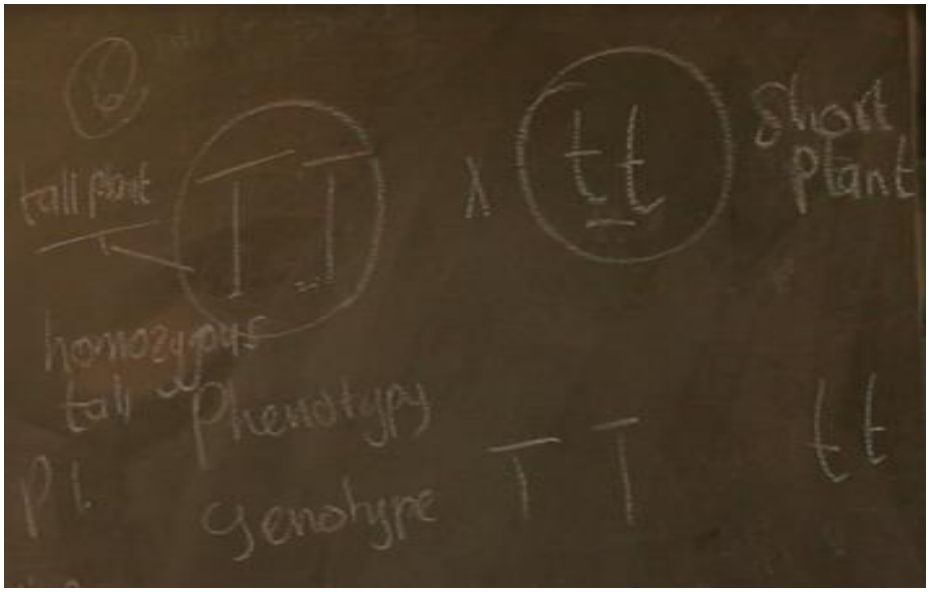
PHENO- ehh…the PHENOTYPE neh....

109. So, what is our phenotype here? [Showing on the board]

110. It is tall a:nd ((short)), because we are able to do what… [using hands] to describe our two plants…that ehh…the other one is tall…

and the other one ehh…is ((short)).

111. And then from-- the-- the-- it will be what…ehh…the [writing on the board]



…geno- ((type)).

112. What is our genotype here?

113. That is when you are writing what…your ehh…TT and the small ehh…letter ehh…t…T capital letter HOMO— zygous tall and a short ehh…plant that is ehh…the homo— ehh…zygous ehh…short. [Pointing to a learner]

114. Thando: So, ma'am, are you telling us to write tall times short?

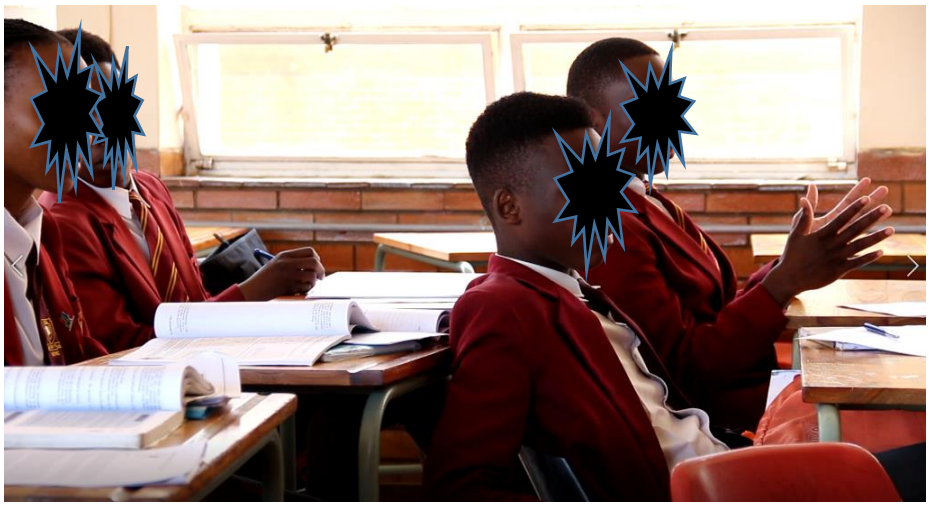
115. Mrs. Letsiba: We write tall and-- ehh…yes!

116. You write like that…tall times short and then the genotype neh…and then after that— [pointing to a learner]

…hmm… [nodding head]

EPISODE 7: QUESTION ABOUT SURGERY

117. Craig: Ma'am, I heard that there is a surgery where they cut your skin / ? / and it is put inside the womb and then the child grows [using hands]



118. Mrs. Letsiba: Ehh! I do not know; I do not know that…where they are putting a child and then they are cutting ehh…can we not deviate neh…can we not deviate from what we are doing. [Points to a learner]

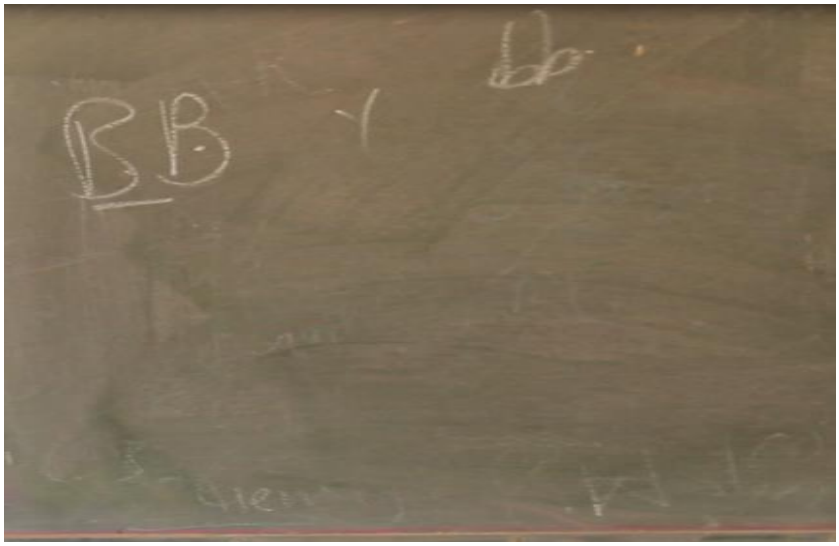
119. Vuyo: It is always supposed to be the letter T?

120. Mrs. Letsiba: No! No! Neh. It will not always be the letter ehh…T. sometimes the examiner uses the letter that ehh…they want neh…

121. So, it is very much important that ehh…whenever [clapping hands] / ? /

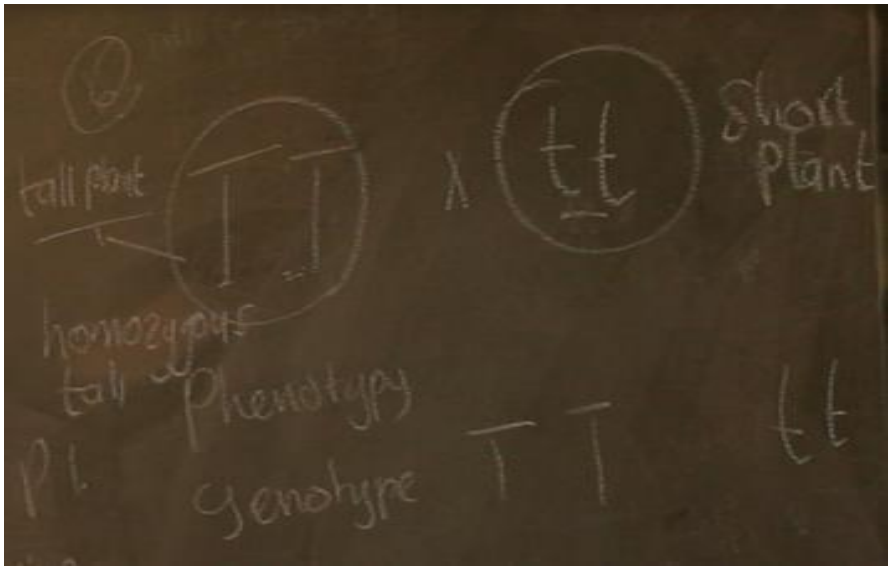
okay, ehh…the examiner gave me the letter ehh…B.

122. Let us say that ehh…fo:r this ehh…black an:d brown maybe for black or brown he uses the ehh… [writing on the board]



…two capital B…and then for the other one, he uses what…the small ehh…letter ehh…b…

123. So, ehh…and ↓we are referring to this one here neh… [showing on the board]



124. Ls: Yes!

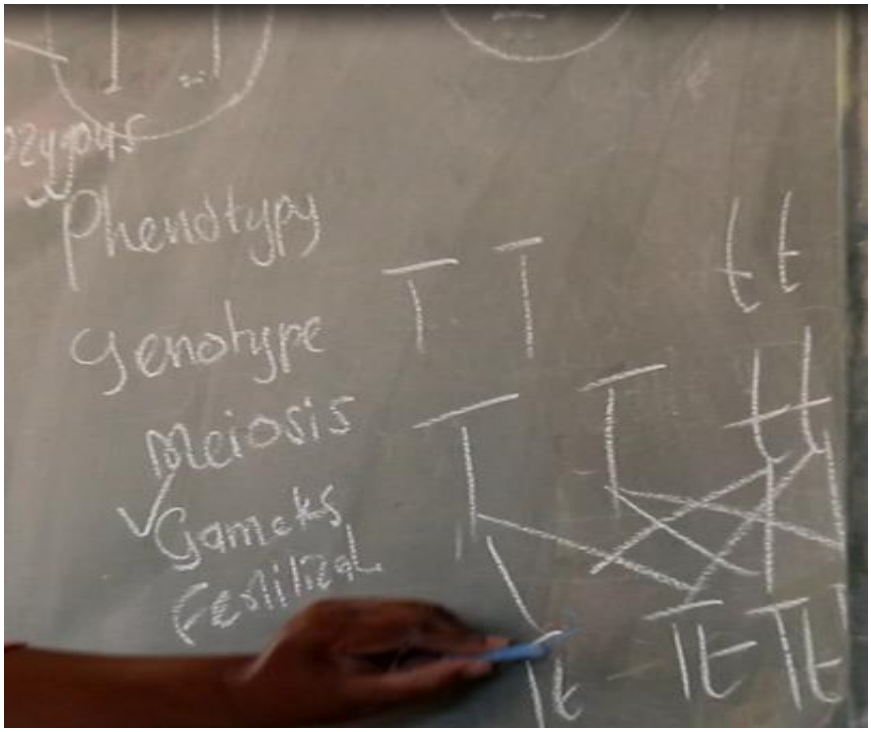
125. Mrs. Letsiba: …the genotype TT and tt neh…

126. And then from there we have what…ehh… meiosis neh…

127. There must be meiosis and then ehh…gametes and then ehh…ferti—((lization)).

128. Then you will get another mark here… [showing that on the board] just for you to do what…to write that meiosis, ehh…gametes…they must follow the-- that order you do not have to start with fertilization, no!

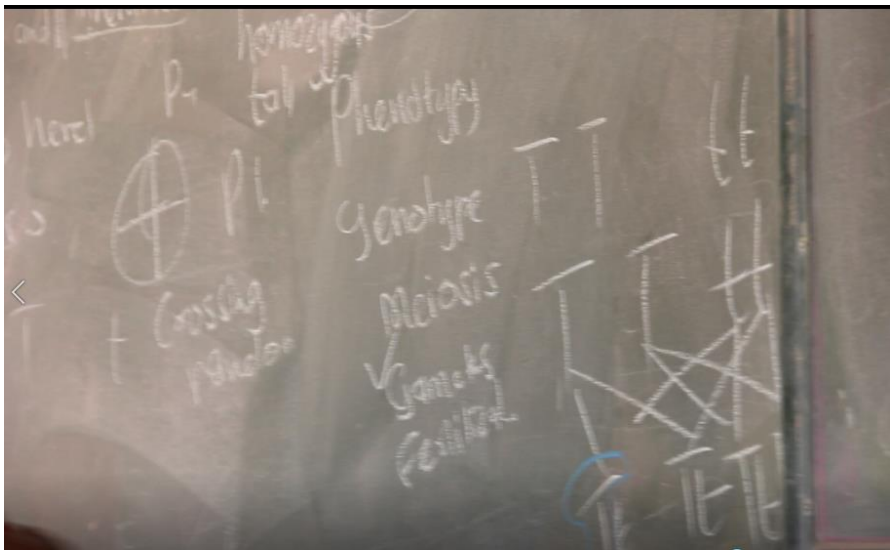
129. You do not have to start ehh…with ehh…that gametes…we know it has to be meiosis…sorry it is gametes and then fertilization. [Writing on the board]



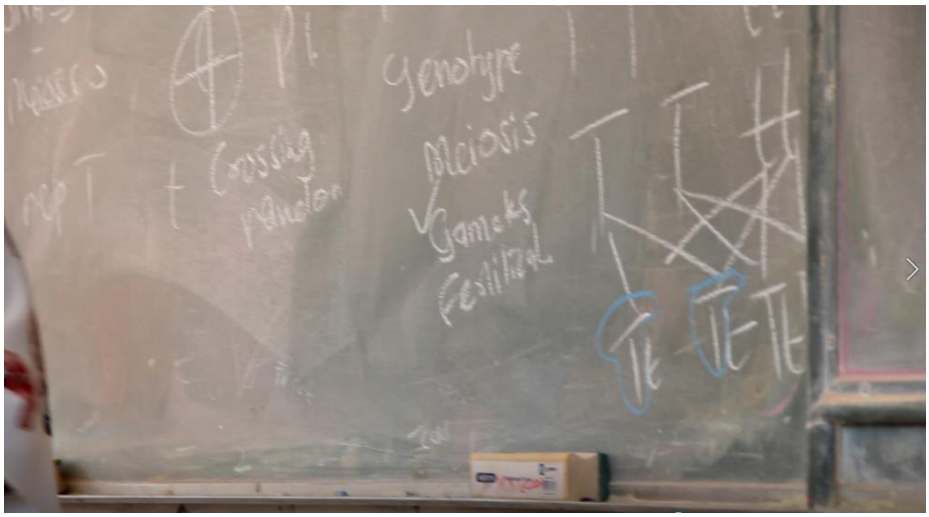
130. So, what will be here?

131. And then we have ehh…again our tt then you start to do what… [writing on the board] to do your cross, ehh…you do your cross, and then you do your cross, then you do your cross then ehh…look at ehh…our results here… [goes to the other side of the board]

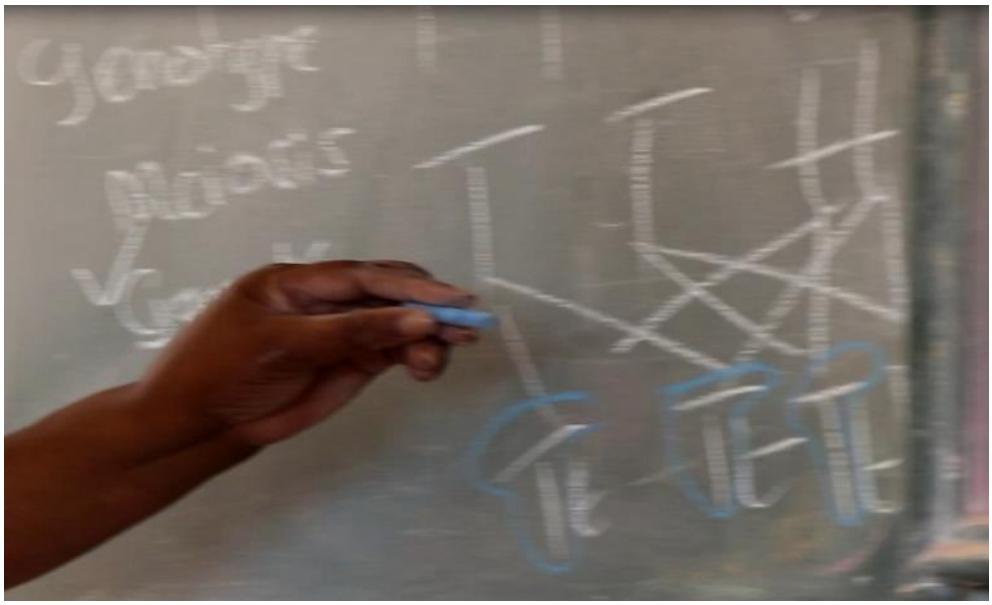
132. We are having what…ehh… [circling the letters] …the capital letter T neh…first offspring that is ehh…the capital letter T…



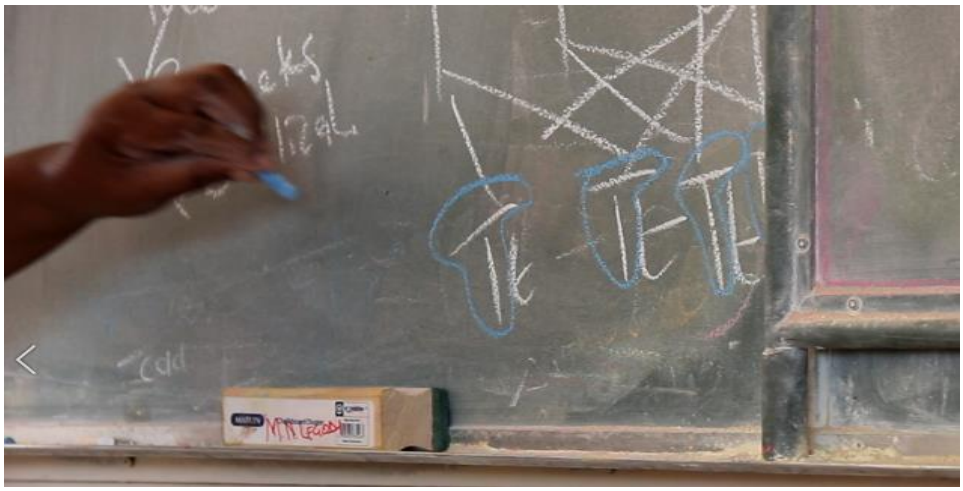
and then ehh…this one here again the capital letter T,



…the third one again we have what…ehh…the capital letter T



…and the last one you also have what ehh…the capital lette:r T.



133. So, which means that ehh…these ehh…offspring here [showing on the board] they are ALL TALL because of what…because of this capital letter T…

134. And we are no longer…referring to them as what…as HOMO— ((ZYGOUS)) but then they are what… ((HETERO— ZYGOUS)) neh… [using hands and head]

…they are HETERO— ZYGOUS.

135. Mrs. Letsiba: Ehh… [moving towards learners and pointing to a very tall boy]

…can you quickly come, Stan…no!

136. You come! [Pointing to a short girl].

137. Ls: [Giggling]

[Learners come to the front]

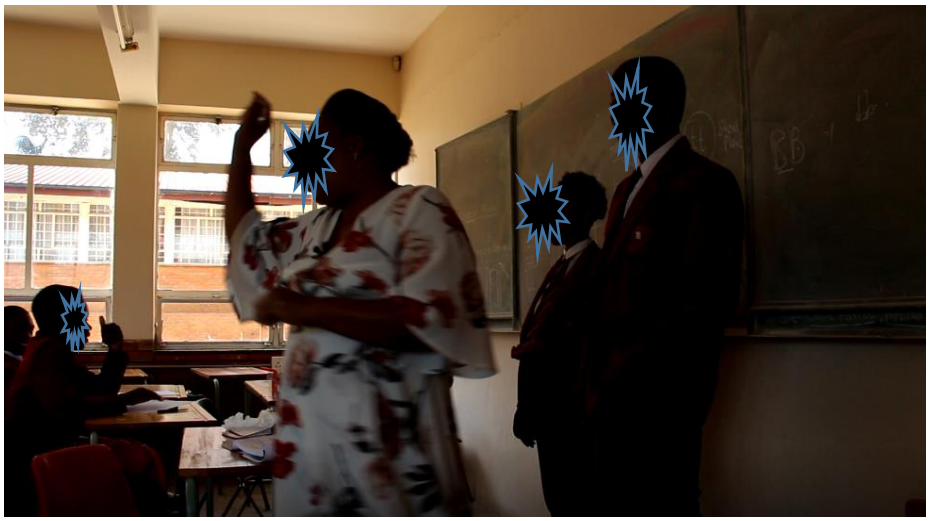
138. Mrs. Letsiba: So, here we are having ehh…tall-- neh…ehh…the father is tall. [Pointing to the two learners]

139. Ls: [Laughter]

140. Mrs. Letsiba: The mother is ehh…((short)) …that is our ehh…we are going to do our first filial generation neh…

141. Ls: Yes! [Laughing]

142. Mrs. Letsiba: So, let us see ehh…the children that we are going to have… Sibusiso come!



143. Ehh…that is our first ehh…child here…that is the first filial generation and then ehh…Gontse come…

144. Ls: [Laughter]

145. Mrs. Letsiba: …and then ehh…you… come… Siphesihle quickly…I want these kids here… areye [SeSotho for 'let us go'] Siphesihle quickly…and then ehh…

146. Vuyo: Mzwakhe!

[Laughter continues]

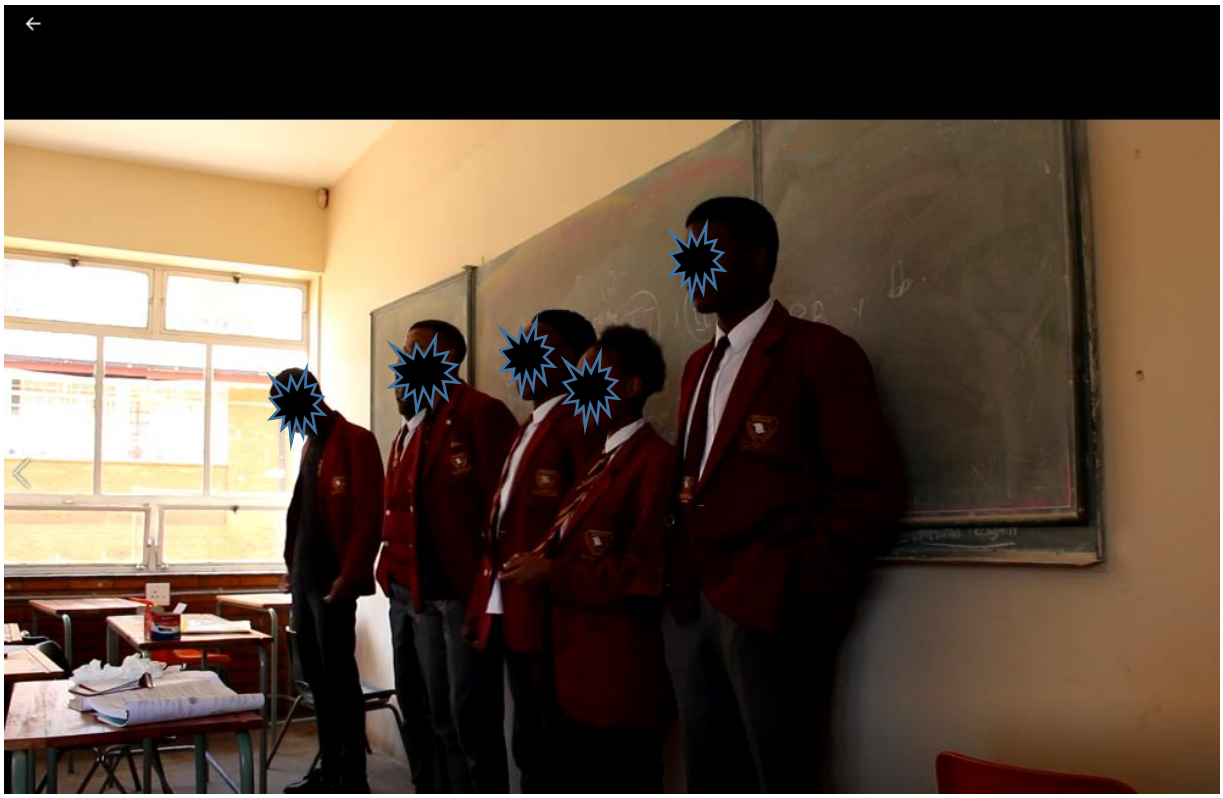
147. Mrs. Letsiba: Mzwakhe come…

…these ehh…four children here neh…look at ehh…the mother…ehh…the mother is ehh…short neh…

…and we have crossed ehh…short and the ehh… tall… quickly [telling Mzwakhe].

148. We have crossed ehh… the short and THE…the tall neh...short and tall.

149. And ehh…all these ehh…kids here [pointing to learners in the front]



…they are tall…you understand that we are referring to them as what…as the FIRST FILIAL GENERATION.

150. Even if… [laughter continues] even if they are—

151. Listen…even if they are tall [separates the 'children' from the 'parents'] but then they are… still have what…ehh…this recessive ehh…trait here neh… [hugging the short girl representing the mother].

152. Ls: Yes!

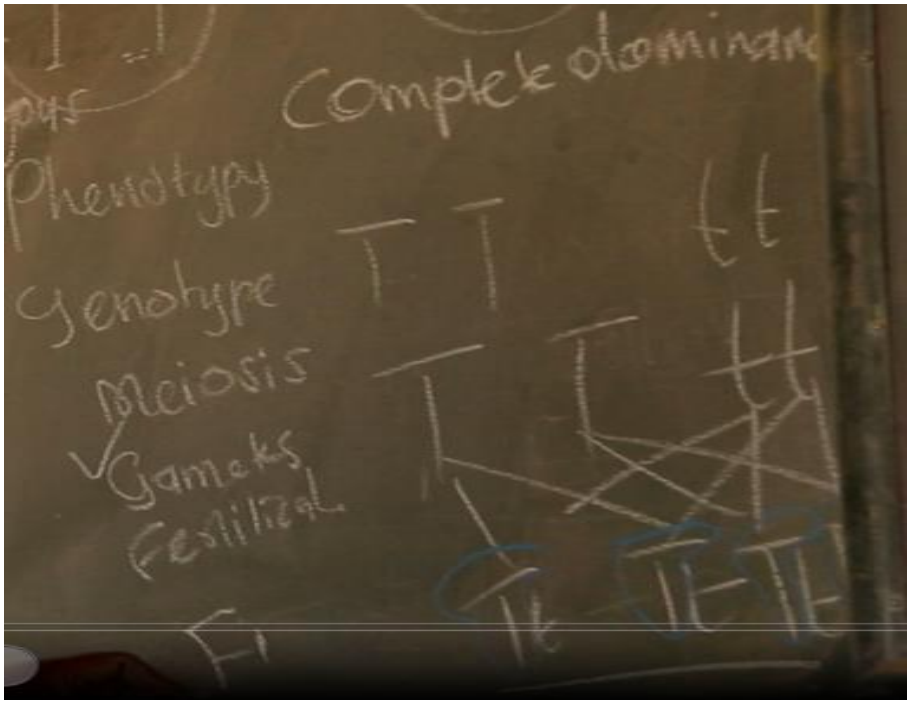
153. Mrs. Letsiba: Some of them when they are going to have ehh…their own children they are going to be what…ehh… ((short)).

154. So, it is the inheritance that we are…thank you [referring to the learners in front] …that we are…ehh…talking about.

155. So, as of today ehh…I know that you will not forget this.

EPISODE 8: BACK TO GENETIC CROSS

156. Mrs. Letsiba: So, this ehh…crossing this crossing here [pointing to the board]



… we are referring to it as THE COMPLETE DOMINANCE…we have ehh…the complete ehh…DO—MINANCE neh…

157. Ehh…because we have different kinds of ehh…this monohybrid cross.

158. So, this ehh…first one is referred to as complete dominance.

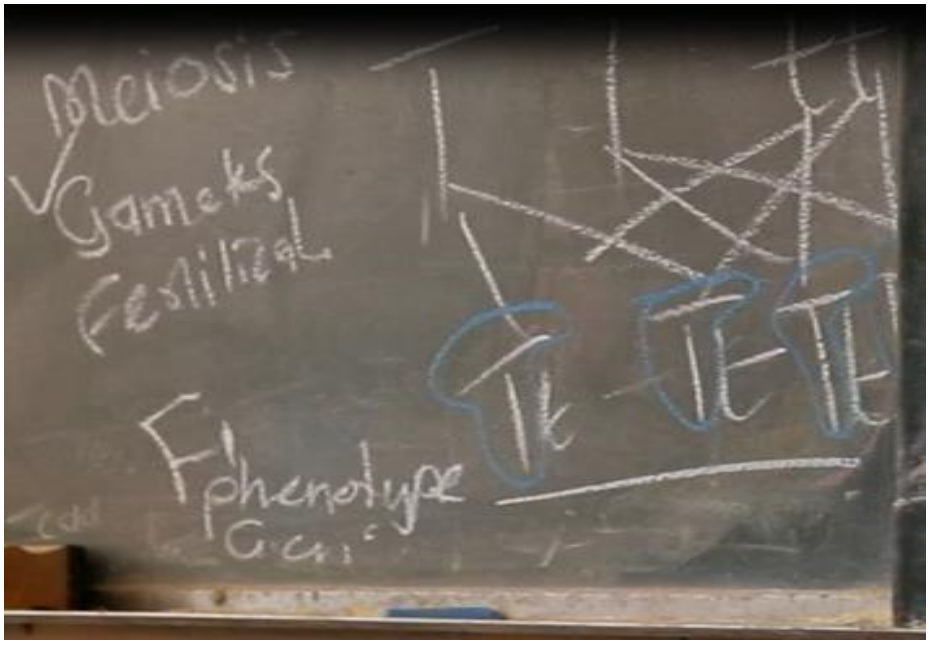
159. So, sometime when you are looking at that…ehh…the examiner will be saying you that you are doing ehh…THE…the tall and the sho::rt.

160. And then you say using eeh…neh…using ehh…the results neh…of your first filial generation neh…ehh…using the result what is our results here?

161. It is these ehh…four ehh…offspring that we have here neh…ehh…that weare referring to it as what…as the F_1…F_1 meaning first…filial…((generation)).

162. In our first filial generation we find that ehh…all our offspring is ehh…all of them are tall…you understand…and then ehh…talking about the six marks ehh…

163. I am going to write here again here ehh…



…pheno— type neh…

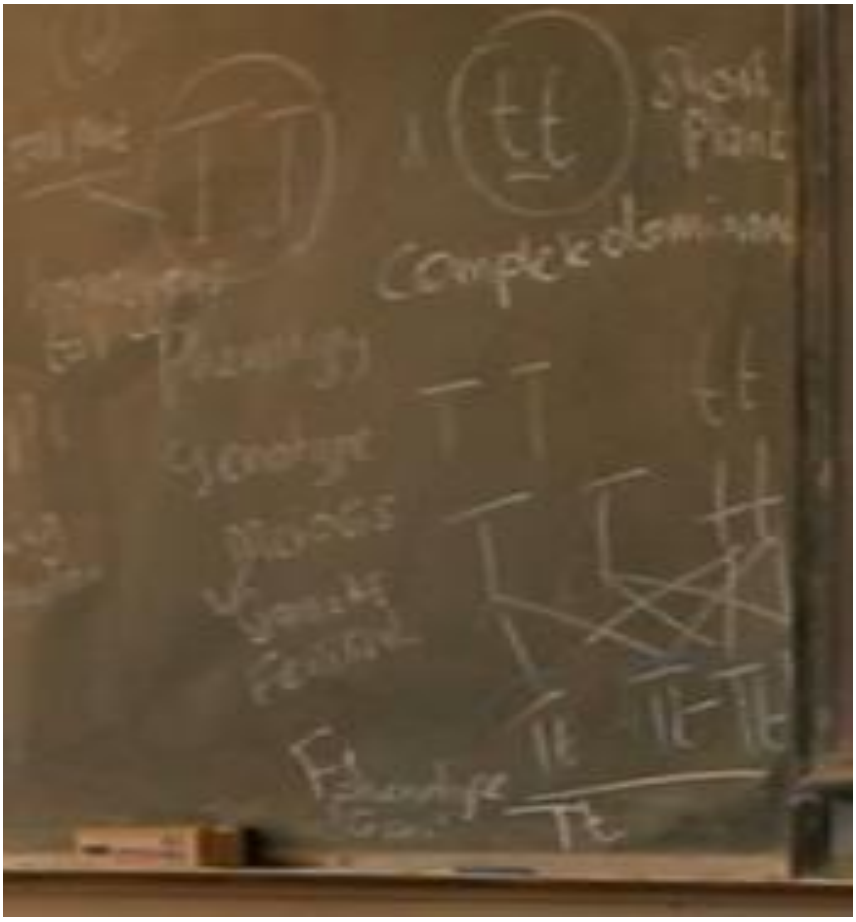
164. And then we also write what…ehh… the ((geno-type)) … because this result is no longer the same as ehh…this one here…you understand.

165. In the beginning we have the tall…the homozygous ehh…tall and then the homozygous ehh…short.

166. Then ehh…we have done our crossing…then ehh…the phenotype we will just write all tall…that is the phenotype…all ehh…tall.

167. Then ehh…the genotype then you write what…ehh…this ehh…T and the small letter ehh…t.

168. So, as I am saying the examiner can say you that ehh...take these results here neh… [pointing to the board]



…and then you show what…^the SECOND FILIAL GENERATION neh…you are showing the second filial generation… [Points to L4 who is Mario]

169. Mario: Ma'am, [using hands] how are we certain that the phenotype… is tall since the crossing over is between tall…and short so how—?

170. Mrs. Letsiba: Because ehh…we are having what…ehh…this ehh…capital letter ehh…T here… neh… that is ehh…the dominant.

171. So, that is why I said to you that ehh…you look at yourself…do you have brown eyes…do you have ehh…th:e black ehh...eyes neh…?

172. So, we have crossed someone who is ehh…tall and the other one that is short…tall a:nd short.

173. And then what is the result after we have crossed them neh…?

174. So, we find that all ehh…the offspring will have what…this capital letter…T neh and then we have ehh…this recessive so we have what…

175.		Can you check again in our study guide…the dominant and the recessive…dominant and recessive so you understand— ehh…see it on page 31 ehh… you read that for me ehh…Mario…dominant ehh…gene.
176.	Mario:	[Reading from study guide] 'Dominant gene, a gene that expresses itself in the phenotype of an individual and masks the effect of the recessive gene'.
177.	Mrs. Letsiba:	So, you are having that ehh…black ehh…eyes neh…from your ehh…mother neh!
178.		And then ehh…we have ehh…that ehh…that ehh…recessive…
179.		So, ehh…the dominant will musk what…THE the recessive…
180.	Mrs. Letsiba:	We will not unless otherwise we are going to what…in our second filial generation neh…some of these ehh…offspring here, they are going to be tall neh…and some of the offspring are going to be what…ehh…short.
181.		That is ehh…our ehh…second filial generation.
182.		Sit there my boy I will come to you [referring to a learner] …and then you read again [referring to Mario] ehh…recessive.
183.	Mario:	[Reading] 'A gene that does not express itself in the phenotype.'
184.	Mrs. Letsiba:	A gene that does not express itself on THE ehh…pheno-type…
185.		Remember the phonotype is what… ((the physical appearance)) [using hands and body].
186.		As I was saying now that ehh…last week when you were here with your mom neh… [referring to Mario]
187.		I did not ask questions neh…by just merely looking at HE:R PHENO TYPE neh…that is her physical appearance neh!
188.		Ehh… BY the mere fact that you-- some of your features…the phenotype neh… ehh…they are ehh…the same…
189.		…but it does not mean that even if some of these features which are the same which are expressed in the phenotype, then ehh…that recessive allele we throw it away.
190.		No! We don't throw it away…you understand!
191.		You still have— ↓Ehh…we always ehh…at all the time we hear our mothers at home…our grandmother-- ehh…parents…

192.		Ehh…you find that ehh…you are dark in complexion and then ehh…she is dark in complexion then you are having this child who is lighter in complexion.
193.		And then you ask yourself, but I am dark in complexion.
194.		And the other one, I am also dark in complexion why then do we have a child who is ehh…lighter in complexion neh…?
195.		And that child is very, very, very light neh…
196.		And then that is where we are talking about what…THE PHYLO GENETIC ehh… TREE neh…
197.		They will say to you that when you-- no do not worry neh…you are ehh…not ehh…light in complexion neh…ehh…your great, great granny neh…
198.		Can you see where its coming from…?
199.		Your great, great granny was lighter ehh…in complexion.
200.		We have ehh… Sihle now… who is lighter in complexion and maybe he is going to marry someone who is lighter and a yellow bone neh…
201.		And then the thing that ehh… [bell rings] because ehh…the two of us, we are yellow bones and then our children all of them neh…are going to be ehh…yellow bones.
202.		No! Ehh…one of them might be what…darker in ehh…complexion.
203.		You look madam Naidoo's children neh…I always make example that ehh…you look at Nadia you look at the other one… Nadia is lighter in complexion like the mother and then that other one i:s dark in ehh… in complexion… you understand?
204.	Ls:	Yes!
205.	Mrs. Letsiba:	So, ehh…before we continue I want us to ehh…TO quickly-- ehh…to-- because I want to give you this activity…I want us to learn using ehh…THE question paper…because sometimes people, I am seen like a priest then…it does not ehh…make sense, people must work.
206.		So, please, please, please my dear children you fill in for me and then you are bringing those ehh…back to me…its fine madam…okay.

207. Vuyo: Ma'am, ma'am my question is if— if the tall was recessive was—

208. Mrs. Letsiba: No! The tallness—we are checking it at this genotype here neh!

209. Vuyo: I am saying if it was recessive…i:f it was recessive…

210. Mrs. Letsiba: No! It will not be recessive—

211. Gontse: Always?

212. Mrs. Letsiba: Because we have ehh…the capital-- always know that ehh…when we have …ehh…when we have ehh…the capital letter neh…

213. When you just see-- I do not want you to be confused people…now you start making mistakes in your examination.

214. You just see ehh…the capital letter…that you know…you do not have to go and drink water and come back.

215. So, just know that it is what…it is ehh…dominant neh…whether it is hot or cold ehh…that will be a dominant.

THE END!