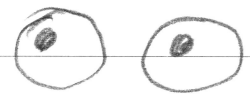
Start here.

(a)

Trisomy	There are 3 extra chromosomes that causes mutations
Polyploidy	There are 22 chromosomes instead of 23 chromosomes.
Base substitution	The bases on a DNA strand. When a substitution of one base is missing, the next base adds on to the next base and replaces the substituted bases location.

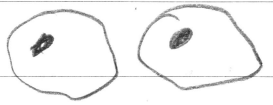
Extra or less added chromosomes can cause a wide effect on the DNA and an organism. Even with the smallest and slightest change can even cause death for some organisms.

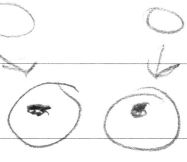
(b) Diploid cell - Similarities Differences



meiosis identical copy

Haploid cell



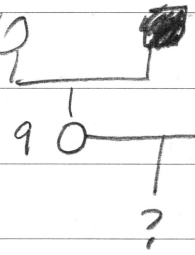


different parents daughter cells.

They look closely alike

(c) (b) Vision defect - recessive
limb defect - recessive

(iii)



} both are normal male and female but the female ~~is~~ may be carrying the defect seeing as her father has the defect.

R r. The defect is recessive so the ~~the~~ possible phenotypes of their children is a normal child with no defects. 50% chance of recieving a vision defect.

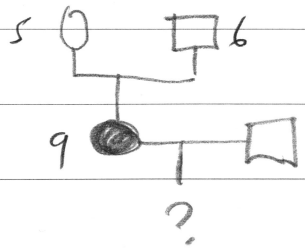
R - defect
r - no defect

	R	r
r	Rr	rr
r	Rr	rr

The daughter (9) has this ~~phen~~ genotype and does not have the ~~gene~~ affected gene.

50% Rr 50% rr
2 : 1

So their kids (9 x 10) will not have any defects.



} The female has the defect limb and the male doesn't.

Their children will have the limb defect because 10 carries the genes from his mother and his wife (9) also carries the defect.

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R - defect
r - no defect

(5) x (6)

	R	r
r	Rr	rr
r	Rr	rr

The ~~the~~ defect affected daughter (9). ~~and~~ she ~~is~~ 50% Rr
50% rr
1 : 1
Rr rr

(9) x (10)

	R	r
r	Rr	rr
r	Rr	rr

They will ~~both~~ have
~~50~~ 50% Rr and 50% rr
1 : 1
Rr rr

~~Sa~~

You may ask for an extra Writing Booklet if you need more space.

Start here.

(d) (i) Data collected and analysed is used to identify relative position of linked genes and these information collected is very effective.

~~The use of~~

Reporting, doing first hand investigations ~~and~~ experimenting and researching can be used and collected to be analysed to help identify linked genes. and are very reliable and ~~so~~ relevant.

(ii) The humanes genome project ~~was used~~ could not be used because the information collected was not reliable. ~~and therefore~~ By only studying linkage maps, their investigation was not relevant. The Human genome project ~~if they~~ did ~~more~~ used more reliable stuff and did some first hand investigation then their project ~~as~~ might've work more better.

(e) Our understanding of gene cloning and gene cascades has led to the development of new applications for technology. The more knowledge we gain, the better our understanding of how we can make different technologies work and what can be used to help further our educations on different technologies. Gene cloning and cascades has been used to produce a whole artificial chromosome. The chromosome was inserted into a bacteria and it amazingly survived and it reproduced bacteria. These uses help to elaborate on the different understandings of gene cloning and cascades.

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