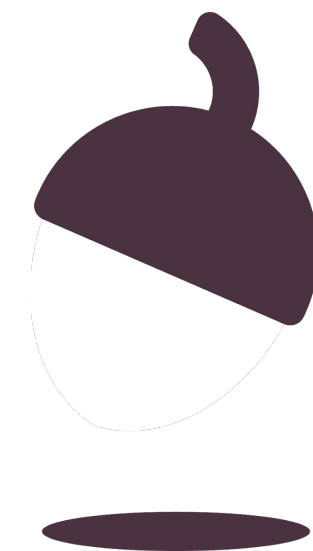


Combined Science - Biology - Key Stage 4

Genetic Inheritance - Higher

Mrs Gibbs



OAK
NATIONAL
ACADEMY

Independent task

Red-green colour blindness is a recessive characteristic. (the alleles are R and r for this gene)

1. What are the phenotypes? Not colour blind or _____
2. What are the **3** possible genotypes? _____, _____ or _____
3. What genotype **must** a person with red-green colour blindness have?
4. Will their genotype (from Q3) be heterozygous or homozygous?
5. What genotype **could** a person with unaffected vision have? _____ or _____



Independent task

The allele for having dimples (D) is dominant over the allele for not having dimples (d). A mother has the alleles dd and a father has the alleles Dd. Use a diagram to show the probability that their offspring will inherit dimples.

Show your answer as a percentage.



Independent task

Red-green colour blindness (r) is a recessive condition

- 1) Use a diagram to show the probability of the offspring of heterozygous parents being colour blind. Express this as a ratio.
- 2) What proportion of the offspring are likely to have homozygous genotypes?

Hints

- *Heterozygous means different alleles*
- *For recessive alleles, two copies of the gene are needed for it to be expressed in the phenotype*

