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Worksheet: Heredity

1. If a trait A exists in 10% of a population of an asexually reproducing species and a trait B exists in 60% of the same population, which trait is likely to have arisen earlier?
2. A Mendelian experiment consisted of breeding tall pea plants bearing violet flowers with short pea plants bearing white flowers. The progeny all bore violet flowers, but almost half of them were short. This suggests that the genetic make-up of the tall parent can be depicted as (a) TTWW (b) TTww (c) TtWW (d) TtWw
3. A study found that children with light-coloured eyes are likely to have parents with light-coloured eyes. On this basis, can we say anything about whether the light eye colour trait is dominant or recessive? Why or why not?
4. How do Mendel’s experiments show that traits are inherited independently?
5. How does the creation of variations in a species promote survival?
6. How is the sex of the child determined in human beings?
7. A man with blood group A marries a woman with blood group O and their daughter has blood group O. Is this information enough to tell you which of the traits – blood group A or O – is dominant? Why or why not?
8. How do Mendel’s experiments show that traits may be dominant or recessive?
9. How is the equal genetic contribution of male and female parents ensured in the progeny?