Heredity

CHAPTER 8

NCERT FOCUS

ANSWERS

Topic

1. **(c) :** All progeny bore violet flowers, so they all must have gene for violet flower. As violet colour appears in hybrids thus it must be the dominant character. So, white flowered plant should have ww genes to show recessive white character. It indicates that all progenies got allele W (violet colour) from violet flowered plant, thus its all gametes should have W allele. To serve the purpose, plant must have WW genes. But, tallness was found in 50% progenies thus half of its gametes contained T gene and other half contained t gene. Inclusively, the tall parent plant had TtWW genotype.

2. No, from the given statement, we cannot say with certainity whether light eye colour is dominant or recessive. However, since both children and their parents have light eye colour, the possibility is that light eye colour is a recessive trait. Had the light eye colour been a dominant trait, the homozygous light eyed parents would have only light eyed children but heterozygous light eyed parents might had some recessive dark eyed children (3 : 1 ratio).

3. (i) Select two varieties of dogs, one with white coat colour and the other with black coat colour.

(ii) Crossbreed them taking male dog from one variety and bitch (female dog) from the other variety.

(iii) Observe the colour of offsprings of F_1 generation.

(iv) Now, bring about breeding among the organisms of F_1 generation.

(v) Observe the coat colour of organisms (pups) of F_2 generation and note the variations in coat colour.

(vi) Draw conclusions on the basis of your study. One of the probable inheritance pattern may be as given below.

Phenotypic ratio = 3 : 1, Black coat colour (3) : White coat colour (1) .

4. A zygote is formed by the fusion of sperm and ovum. During the formation of gametes as a result of reductional division (meiosis), sperms and eggs receive only half of the genetic material of parent cell and thus become haploid. When fertilisation occurs, zygote is formed, which is diploid (2n). In this way, both male and female parents contribute exactly equal amount of genetic material to the offspring.

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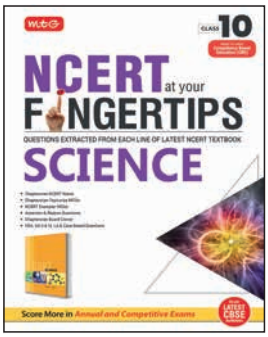

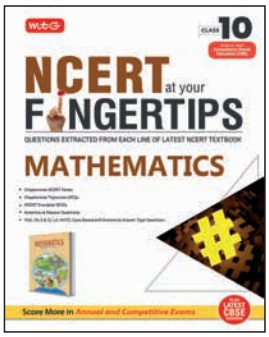

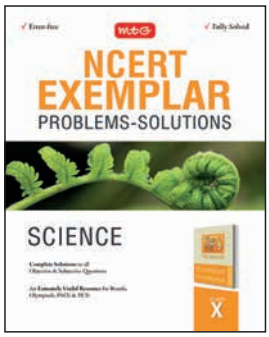

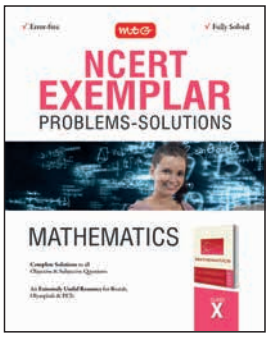

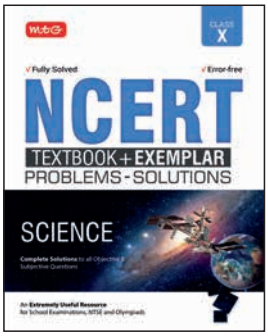

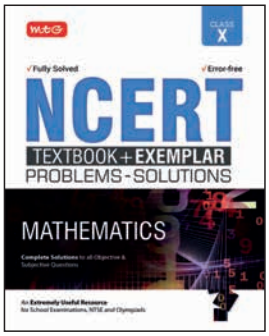

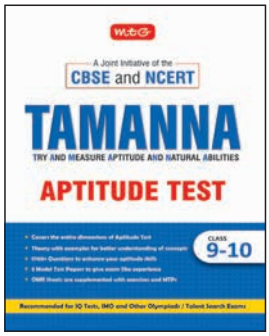

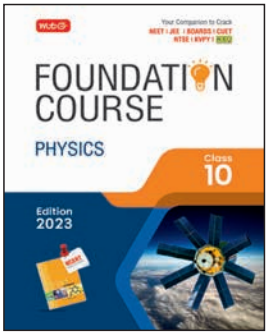

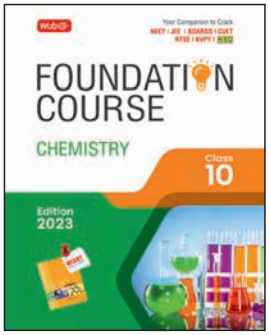

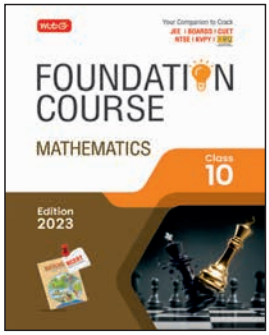

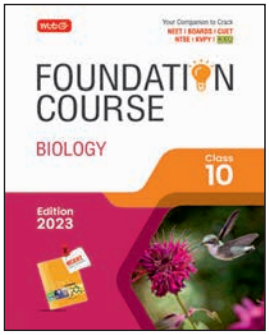

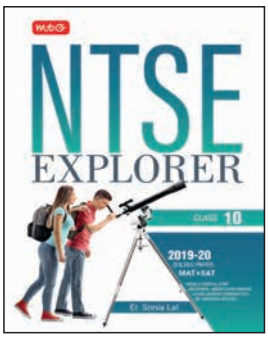

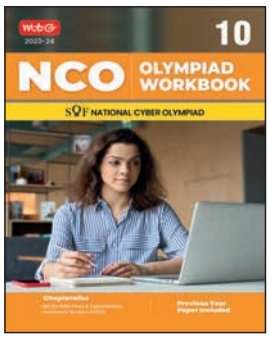

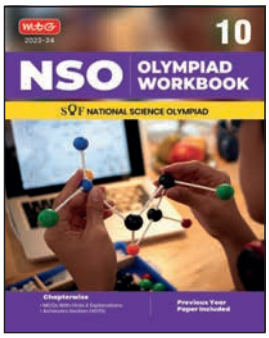

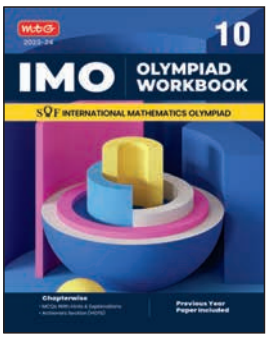

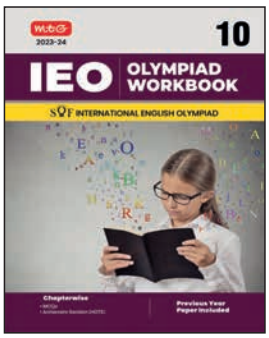

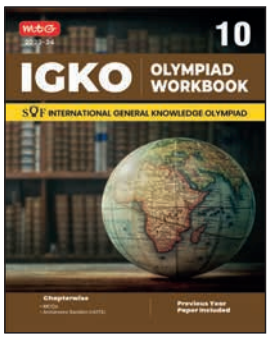

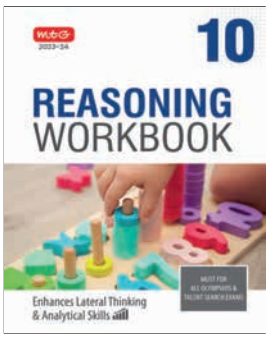

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