

5 Meiosis and genetic variation – Part 1

—Answers

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Work through these after you have tried the questions yourself.

2.1 it produces gametes (sex cells), which have half the number of chromosomes of a body cell.

2.2 each gamete carries half the chromosomes, so when egg and sperm join the full number is restored (half from each parent).

2.3 crossing over (swapping pieces between chromosomes) and independent assortment (random lining-up of chromosome pairs).

2.4 meiosis makes four non-identical cells with half the chromosomes; mitosis makes two identical cells with the full number.

2.5 meiosis shuffles the genes differently each time, and random fertilisation combines different egg and sperm, so each child gets a unique mix.