

SCIENCE 1.9

ANSWERS

WORKSHEET TWO

CHROMOSOMES

1. A human has 46 chromosomes or 23 pairs of chromosomes in a body cell.
2. Human sex cells contain half the number of chromosomes 23, (they are haploid), compared with body cells which contain 46.
- 3.

Organism	Egg	Sperm	Fertilised egg
Human	23	23	46
Koala	8	8	16
Tomato	12	12	24

4. Chromosomes are made up of genes (which are made up of DNA).

5.

(a) DNA	(1) One half of a replicated chromosome.
(b) Gene	(2) The state of a nucleus when it has two sets of chromosomes.
(c) Diploid	(3) The unit of inheritance.
(d) Chromosome	(4) A double helix molecule that contains genes.
(e) Chromatid	(5) Long strands of DNA found in the cell nucleus.

6. Before a cell divides each one of the chromosomes copies itself and forms two exact copies known as chromatids. These are held together by a centromere (a central point).

7. A karyotype is a picture of the number of chromosomes an organism contains. The homologous pairs will be together and also the sex determining chromosomes will be shown, XY for a male, XX for a female. It can also be used to tell if an organism will have abnormalities because of an incorrect number of chromosomes.