Worksheet 2.10.5a Exploring human chromosomes

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1 Where is DNA found? >

Work with a partner to answer these questions.

a) How many chromosomes are found in the human egg cell, sperm cell and fertilised egg?

egg cell:

sperm cell:

fertilised egg:

b) Why is it important that egg and sperm cells have this number of chromosomes?

2 Pairing chromosomes >>

Complete this task with a partner.

a) Pair up each chromosome (from page 2 of this worksheet) with its matching partner. Use the size, shape, colour and pattern of markings of the chromosomes to determine pairs.

b) Arrange the chromosomes from largest to smallest and number them directly below each pair. Your numbers should start at 1 (the largest pair of chromosomes) to 22 (the smallest pair of chromosomes).

c) Put the sex chromosomes (each is labelled either X or Y) last and label them number 23.

d) Glue the chromosome pairs in the correct order, with the chromosomes in a pair oriented in the same direction.

3 DNA problems >>>

Work in a group of three to complete this task.

Explain the impact of a change in DNA passed on from the parents. You will research one of the following:

* Down’s syndrome
* Edward’s syndrome
* Patau’s syndrome
* Kleinfelter’s syndrome
* Triple X syndrome.

You must find out:

* how the syndrome is caused
* what the symptoms are
* what the typical life expectancy is of people with the syndrome.

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Pairing chromosomes resource sheet

Follow the instructions on page 1 to match up the 46 individual chromosomes below into 23 pairs.

