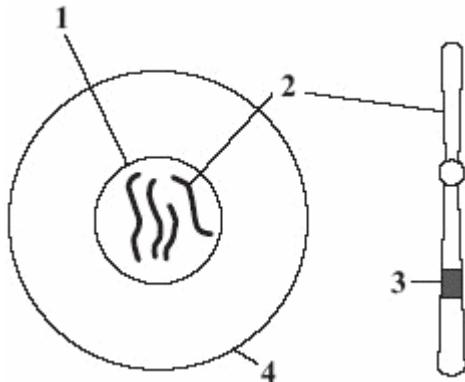


**Why organisms are different and reproduction**

1. The diagram shows a human egg.



Match structures, **A**, **B**, **C** and **D**, with the labels **1–4** on the diagram.

- A** cell
- B** nucleus
- C** chromosome
- D** gene

2. These young rabbits look like their parents.

This is because information about characteristics such as fur colour is passed from parent to their young.



Match words, **A**, **B**, **C** and **D**, with the numbers **1–4** in the sentences.

- A** chromosomes
- B** genes
- C** nucleus
- D** sex

Information is passed from parents to their young in . . . **1** . . . cells.

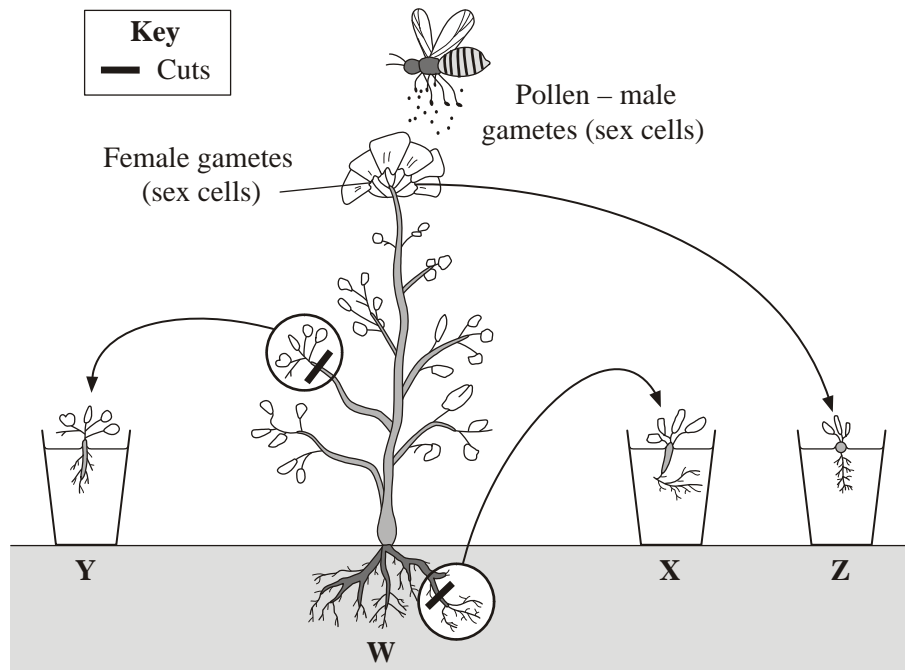
Each characteristic, eg fur colour, is controlled by . . . **2** . . .

The structures which carry information for a large number of characteristics are called . . . **3** . . .

The part of the cell which contains these structures is called the . . . **4** . . .

Unit B1, B1.7.1 & B1.7.2

3. New plants may be produced from older adult plants in a variety of ways. Three of these are shown in the diagram.



- (a) Which process has been used to produce plant **X**?
- 1 taking cuttings
  - 2 sexual reproduction
  - 3 adult cell cloning
  - 4 embryo transfer
- (b) Which process has been used to produce plant **Z**?
- 1 taking cuttings
  - 2 sexual reproduction
  - 3 adult cell cloning
  - 4 embryo transfer
- (c) Which of these plants will have genes which are all identical to the adult plant (**W**)?
- 1 **X** and **Y**
  - 2 **X**, **Y** and **Z**
  - 3 **Y** and **Z**
  - 4 **X** and **Z**
- (d) Producing new plants by the method used to produce plant **Y** is . . .
- 1 quick and cheap.
  - 2 quick and expensive.
  - 3 slow and expensive.
  - 4 slow and cheap.

Unit B1, B1.7.1 & B1.7.2

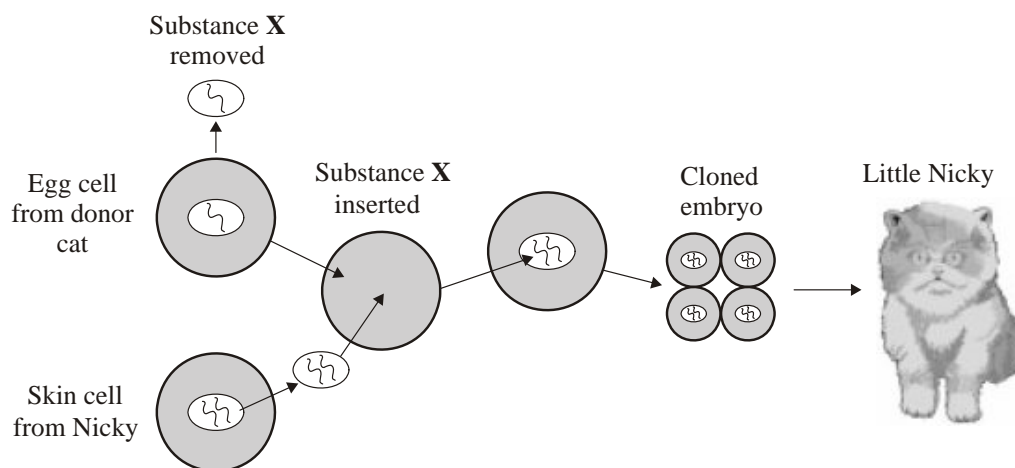
4. In each part choose only **one** answer.

Read the passage below about cloning.

The first cloned-to-order pet sold in the United States is named Little Nicky, a 9-week-old kitten delivered to a Texas woman saddened by the loss of a cat she had owned for 17 years. The kitten cost its owner \$50 000 and was created from substance X from her beloved cat, named Nicky, who died last year.

“He is identical. His personality is the same,” the owner, Julie, told The Associated Press in a telephone interview. She asked that her last name and home town not be disclosed because she said she fears being targeted by groups opposed to cloning.

The diagram shows how Nicky was cloned.



- A** Substance X is . . .
- 1 carbohydrate.
  - 2 DNA.
  - 3 fat.
  - 4 protein.
- B** This technique involves . . .
- 1 asexual reproduction.
  - 2 fertilisation.
  - 3 mutations.
  - 4 sexual reproduction.
- C** Nicky and Little Nicky are identical because they have the same . . .
- 1 cells.
  - 2 enzymes.
  - 3 genes.
  - 4 personality.

Unit B1, B1.7.1 & B1.7.2

- D On which grounds are people most likely to object to this technique?
- 1 economic
  - 2 ethical
  - 3 scientific
  - 4 social

5. In each part choose only **one** answer.

This question is about genetically modified food.

Read the passage.

In 1996, two supermarkets started to sell genetically modified (GM) tomato puree, a paste made by cooking GM tomatoes. It was cheaper than non-GM puree and sold very quickly. The GM tomatoes contained a transferred gene which allowed them to keep ripe longer. The GM tomatoes were grown in America because the British climate was not suitable. Laws prevented uncooked GM tomatoes from being sold in Europe. The cans of tomato puree were clearly labelled to show that the GM puree was made from GM tomatoes. In 1999, the supermarkets stopped selling the GM tomato puree.

- A Why were the GM tomatoes produced in the first place?
- 1 to produce cheaper puree
  - 2 to produce tastier puree
  - 3 to produce a bigger crop in America
  - 4 to produce larger tomatoes
- B Which of the following is the most likely reason to explain why people stopped buying the GM tomato puree?
- 1 concern about the effects on the British economy
  - 2 concern about the effect on the environment of growing GM crops
  - 3 European laws prohibiting the sale of GM tomatoes
  - 4 the tomatoes could not be grown in Britain
- C How are GM tomatoes produced in the first place?
- 1 producing clones from a mutated plant
  - 2 fusing cells of young tomato plants
  - 3 sexual reproduction of two varieties of tomato plant
  - 4 transferring genes from another species
- D Why were the tins of tomato puree labelled to show that they had been made using GM tomatoes?
- 1 because the supermarkets were worried about health effects
  - 2 so that the public could choose GM or non-GM puree
  - 3 to inform the public about genetic engineering
  - 4 to raise public concern over GM crops