 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**  ** Model the inheritance of a specific trait and explore the variation in the offspring produced.

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| --- | --- | --- | --- | --- |
| Know - | |  | Apply  2  1 | |
| Ideas | |  |  |  |
| K1 | Inherited characteristics are the result of genetic information, in the form of sections of DNA called genes, being transferred from parents to offspring during reproduction. |  | A1 | Use a diagram to show the relationship between DNA, chromosomes and genes. |
| A2 | Use a diagram to show how genes are inherited. |
| K2 | Chromosomes are long pieces of DNA which contain many genes. Gametes, carrying half the total number of chromosomes of each parent, combine during fertilisation. |  | A3 | Explain how a change in the DNA (mutation) may affect an organism and its future offspring. |
| A4 | Explain why offspring from the same parents look similar but are not usually identical. |
|  | |  |  |  |
| Facts | |
| K3 | The DNA of every individual is different, except for identical twins. |  | A5 |  |
| K4 | There is more than one version of each gene e.g. different blood groups. |  |  |  |
|  | |  |  |  |
| Key words | |
| K5 | **Inherited characteristics:** Features that are passed from parents to their offspring. |  | A6 |  |
| K6 | **DNA:** A molecule found in the nucleus of cells that contains genetic information. |  |  |  |
| K7 | **Chromosomes:** Thread-like structures containing tightly coiled DNA. |  |  |  |
| K8 | **Gene:** A section of DNA that determines an inherited characteristic. |  |  |  |
| 3 | Extend |  |  |  |
| E1 | Suggest arguments for and against genetic modification. |  |  |  |
| E2 | Suggest benefits from scientists knowing all the genes in the human genome. |  |  |  |
| E3 | Determine how the number of chromosomes changes during cell division, production of sex cells and fertilisation. |  |  |  |
| E4 | Find out why scientist Watson, Crick and Franklin were so important. |  |  |  |
| E5 |  |  |  |  |
|  |  |  |  |  |
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|  |  |  |  |  |
| E6 |  |  |  |  |
|  |  |  |  |  |
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