|  |  |  |
| --- | --- | --- |
| **10.1 Variation** | |  |
| **Task 1** | | **Variation in humans** | |

1. Variation in humans is either inherited, caused by the environment, or a combination of both. Complete the table below to show at least four examples of each type of variation in humans.

|  |  |  |
| --- | --- | --- |
| **Inherited** | **Caused by the environment** | **Caused by genes and**  **the environment** |
|  |  |  |

1. Now, decide whether each example of variation you have listed is ‘continuous variation’ or ‘discontinuous variation’. Write a ‘C’ for continuous or a ‘D’ for discontinuous next to each one.
2. Do you notice any patterns in your table? (Does a column contain mostly Cs or Ds?) Describe the pattern.
3. Which example of variation from the middle column do you think can be most affected by the ‘environment’? Justify your answer.

|  |  |  |
| --- | --- | --- |
| **10.1 Variation** | |  |
| **Task 2** | | **Height and feet investigation** | |

**Investigation:** Do taller people have bigger feet?

1. Collect data from your friends and family to try and answer this question.

Present your data in a table. You could use the headings shown here or decide on your own.

|  |  |
| --- | --- |
| **Height (cm)** | **Foot size (cm)** |
|  |  |

1. Draw a graph of your data to see if there is a pattern.
2. Describe your graph and write a conclusion.
3. Suggest an explanation for the shape of the graph.

|  |  |  |
| --- | --- | --- |
| **10.2 Human reproduction** | |  |
| **Task 1** | | **Menstrual cycle peer assessment sheet** | |

Count how many keywords or terms have been included in the description.

1. Looking at the definition, was each term used correctly in the description?

Put a tick or cross in the table below.

|  |  |  |
| --- | --- | --- |
| **Key term** | **Definition** | **A close up of a logo  Description automatically generated A close up of a sign  Description automatically generated** |
| Menstrual cycle | It lasts about 28 days and prepares the body for pregnancy. |  |
| Menstruation | Loss of lining of the uterus. |  |
| Pregnancy | This occurs when a fertilised egg settles into the uterus lining. |  |
| Uterus/womb | Where a baby develops in a pregnant woman. |  |
| Egg | The female sex cell, released from the ovaries. |  |
| Ovulation | Release of an egg cell from the ovary. |  |
| Fertilisation | Joining of a nucleus from a male sex cell (sperm) and the female sex cell (egg). |  |
|  |  |  |
|  |  |  |
| What went well?  Even better if … | | |

|  |  |  |
| --- | --- | --- |
| **10.2 Human reproduction** | |  |
| **Task 2** | | **Research poster** | |

The developing foetus relies on the mother to protect it against harmful substances.

**Your task:**

Research the effects of your allocated substance on the developing foetus.

* cigarettes
* alcohol
* drugs, e.g. heroin.

Use your findings to produce a poster that warns people of the dangers of using the substance while pregnant. Design your poster so that it could be displayed in places such as GP waiting areas, noticeboards, health centres, etc. Effective posters usually have an eye-catching visual image and key information summarised clearly.

|  |  |  |
| --- | --- | --- |
| **10.3 Evolution** | |  |
| **Task 1** | | **What is the question?** | |

**Your task:** Devise suitable questions for the answers listed in this table:

|  |  |
| --- | --- |
| **Question** | **Answer** |
|  | population |
|  | natural selection |
|  | extinct |
|  | biodiversity |
|  | competition |
|  | evolution |
| **Self assessment: You will fill this in in the next lesson.** | |
| What went well? | |
| Even better if … | |

|  |  |  |
| --- | --- | --- |
| **10.4 Inheritance** | |  |
| **Task 2** | | **DNA research** | |

Choose tasks that add up to at least four stars.

|  |  |
| --- | --- |
| **Know \*** | * List the following in size order from biggest to smallest:   Gene, DNA, nucleus, cell, chromosome. |
| **Know \*** | * Define the word ‘gene’. * What is a DNA mutation? |
| **Apply \*\*** | * If human body cells contain 46 chromosomes, how many chromosomes does a human gamete (sex cell) contain? * Explain why offspring from the same parents look similar but are not usually identical. * Explain how a DNA mutation may affect an organism and its future offspring. |
| **Extend \*\*\*** | * Research and summarise the key role that each of four scientists played in the development of DNA theory: Watson, Crick, Franklin, and Wilkins.  |  |  | | --- | --- | | A close up of a sign  Description automatically generated | [science history.org/](https://www.sciencehistory.org/) |  * Outline two DNA breakthroughs/discoveries that have occurred since the year 2000.  |  |  | | --- | --- | | A close up of a sign  Description automatically generated | [dna-worldwide.com/resource/160/history-dna-timeline](https://www.dna-worldwide.com/resource/160/history-dna-timeline) | |