Justified True or False - Science

Decide if each statement below is true or false and provide your reasoning.

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| --- | --- | --- | --- |
| **Statement** | **T** | **F** | **Explain Your Reasoning** |
| All DNA codes for protein. |  |  |  |
| All cells in an organism contain the same genetic content. |  |  |  |
| Each chromosome is a single, very long DNA molecule. |  |  |  |
| Chromosomes swap sections during mitosis to create genetic variation. |  |  |  |

# Student Responses

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| --- | --- | --- | --- |
| **Statement** | **T** | **F** | **Explain Your Reasoning** |
| All DNA codes for protein. |  | ✔ | Some DNA is used for structure  or to regulate processes |
| All cells in an organism contain the same genetic content. | ✔ |  | Every cell in an organism is a copy of the original zygote cell because cell division creates identical copies |
| Each chromosome is a single, very long DNA molecule. | ✔ |  | Under a strong enough microscope you can see that the DNA molecule is continuous and folded up on itself |
| Chromosomes swap sections during mitosis to create genetic variation. |  | ✔ | Chromosomes swap sections during *meiosis* when sex cells are replicating |

# Reflection

What does this information tell you?

What could you do with this information?