NAME _____ DATE _____

Choose the Best Explanation

A scientific explanation describes **how something works**. It's the **cause** behind an observable **effect**, plus a **mechanism**—an underlying science idea.

Step 1— Draw lines to match each observation with the explanation it *most closely* relates to.

A child does not know how to fix a car even though her mother does. **Observation 1**	**Cause:** Gene shuffling is a source of variation in a population. **Mechanism:** Combining gene versions in different ways makes different combinations of proteins, leading to trait differences. **Explanation A**
A culture of millions of bacteria all started from one cell. When an antibiotic was added, most of the bacteria died. But a few survived. **Observation 2**	**Cause:** Traits that are acquired during an individual's lifetime do not pass to its offspring. **Mechanism**: Variations in acquired traits are due to differences in the environment, not genes. **Explanation B**
Two dog parents made offspring with different traits. **Observation 3**	**Cause:** Helpful traits often pass from parents to offspring. **Mechanism**: Helpful traits improve an individual's chances of reproducing. **Explanation C**
A non-poisonous butterfly looked similar to a poisonous species. Predators avoided eating it, and it survived to reproduce. **Observation 4**	**Cause:** Mutation is a source of genetic variation in a population. **Mechanism**: Mutation changes a gene's code, making it code for a slightly different protein, and leading to trait differences. **Explanation D**
A fish in a forest stream had a gene variation that made it blind. It didn't reproduce. **Observation 5**	**Cause:** Harmful traits rarely pass from parents to offspring. **Mechanism**: Harmful traits decrease an individual's chances of reproducing. **Explanation E**