**KEY Variables Practice**

Independent variable (IV): what the experimenter changes in an experiment

Dependent variable (DV): the change that occurs in an experiment because of the IV.

A. Research Question: How many drops of water will a clean penny and a penny dipped in soap hold?

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| **Type of Penny** | **Trial 1** | **Trial 2** | **Trial 3** | **Average** |
| **Clean penny** | 56 | 67 | 49 | 57.3 |
| **Soapy penny** | 77 | 82 | 69 | 76 |

1. What is the independent variable? The pennies (clean, soapy)

2. What is the dependent variable? Drops of water

B. Research Question: Which bubble gum has the longest lasting flavor?

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| --- | --- | --- | --- | --- |
| **Gum** | **Trial 1** | **Trial 2** | **Trial 3** | **Average** |
| **Orbit** | 14 minutes | 16 minutes | 13 minutes | 16 minutes |
| **Bazooka** | 5 minutes | 4 minutes | 7 minutes | 5.3 minutes |
| **Juicy Fruit** | 7 minutes | 6 minutes | 7 minutes | 6.7 minutes |

3. What is the independent variable? Bubble gum flavors

4. What is the dependent variable? Length of time flavor lasts

C. In order to find the “stickiest” tape, an experiment was designed by putting different tapes “sticky side” up on a meter stick, then placing the meter stick on a book so a marble can roll down. The distance the marble rolled before stopping was used to determine the stickiest tape.

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| **Tape** | **Trial 1** | **Trial 2** | **Trial 3** | **Average** |
| **Duct tape** | 21.5 cm | 32.6 cm | 26.3 cm | 26.8 cm |
| **Masking tape** | 42 cm | 41.8 cm | 39.4 cm | 41.1 cm |
| **Shipping tape** | 29.7 cm | 31.3 cm | 33 cm | 31.1 cm |

5. What is the independent variable? Types of tape (duct, masking, shipping)

6. What is the dependent variable? Marble roll distance

7. What would you keep the same for all tapes (controlled variables)? Angle of meter stick, release of marble, same marble (mass, diameter)