Detailed Testable Statements Assignment

|  |  |  |
| --- | --- | --- |
| Statement | Testable/Not Testable | How to Make it Testable (Detailed) |
| Do fingers wrinkle faster in hot or cold water? | Put finger in hot water capture the Time when finser wrikls – T1 Put finder Hot water – T2 If T2 > t1 - |  |
| How do cat's meow? | Pull the left ear – If cat meows – Pull the right ear – cat meows Fill the milk in feeding bowl – cat meows? Show a rat to the cat – Meows? | Will the cat meow if I pull the ear. Will the cat meow if I give him milk Will the cat meow if it sees a rat. |
| What makes plants grow? | Not Testable,  1; Many factors can affect plant growth sunlight, water, soil, fertilizer, temperature, etc. | 1; Plant seeds in sand, clay, and garden soil. Keep light and water the same for each. Track which grows faster or healthier.  2: Use fertilizer on one group of plants and leave another group without fertilizer. Compare their growth weekly. |
| Does soil type affect plant growth? | Testable | Plant the same type of seeds in different types of soil like sand, clay, and garden soil. Water them equally and keep them in the same sunlight. Observe which grows best. |
| How do kites work? | This is an explanation-based question, but it can’t be tested directly. | 1: Build kites with different shapes (diamond, delta, box). Fly them under similar wind conditions and observe which stays up longer or is more stable.  2: Build kites from different materials (paper, plastic, cloth). Fly them and measure how long they stay airborne. |
| Does Pepsi have more carbonation than Coke? | Testable | Take a fresh bottle of each drink. Pour them into separate glasses. Measure the number or height of bubbles or use a tool that checks gas content. Compare which one fizzes more. |
| What makes something sink or float? | Not Testable  1; It doesn't point to a specific factor you can isolate or measure in an experiment.  2; Instead, you need to focus on a like density or shape to test. | Use the same material (like clay).  Shape it into a ball, then a flat boat-like shape.  Drop both into water and observe which floats |
| Does the saltiness of water affect how fast it freezes? | Testable | Prepare several cups of water with different amounts of salt. Put them in a freezer and check every 10 minutes. Note which one freezes first. |
| Does the temperature of the air impact how high a basketball bounces? | Testable | Heat and cool basketballs to different temperatures. Drop them from the same height and measure how high they bounce. Compare the results. |
| Can I design a device that attaches my skateboard to my bike? | Testable | Create a device idea, build it using available tools, and test if it works while riding the bike. Adjust based on results. |
| Does the amount of TV people watch affect their school attendance? | Testable | Ask students how many hours they watch TV and check their attendance records. See if those who watch more TV are absent more often. |
| Can different scents in the room affect how long people sleep? | Testable | Try using different scents (like lavender or citrus) in the room. Use a sleep tracking app or device to measure how long people sleep with each scent. |
| When will fossil fuels run out? | Not Testable,  **1: Tracking how fast we are using it, and**  **2; Projecting future energy conusmption** | 1; Current global fossil fuel reserves (from energy reports)  2: Current global fossil fuel consumption per year |
| How do batteries work? | Not Testable,  It explains how energy is stored and released, not something you can directly "test" in a simple way. | 1;Store batteries at different temperatures (cold, room temp, warm).  2; Use them in the same device and time how long they last. |
| Why is the color blue calming? | Not Testable,  It doesn’t have one measurable, universal cause, so it's not directly testable. | 1:Use LED lights of different colors in a dark room.  2:Use LED lights of different colors in a dark room. |
| Does using emojis make people happy? | Testable | Send people two types of messages—one with emojis and one without. Ask them which made them feel better. Keep a record of their answers. |
| Can I solve the problem of my grandfather finding his way to the bathroom at night without turning on a light? | Testable | You can place motion lights or glow-in-the-dark strips. Observe if he walks safely at night. Ask if it helps. |
| Does eating school lunch affect how alert people are in their afternoon classes? | Testable | Compare alertness of students who eat lunch vs. those who don’t. Teachers can rate alertness, or you can give simple attention tests after lunch. |
| Does having plants in a house reduce the carbon dioxide level in the house? | Testable | Use a CO₂ meter in a room without plants. Then add plants and check the meter again after a few days. Compare results. |
| Can I create a backpack/umbrella combination? | Testable | Design and build a model of the product. Test if it holds items like a backpack and opens an umbrella correctly. |
| Why am I awesome? | Not Testable,  1: Different people will define “awesome” in different ways.  2; It’s based on opinion, not something you can experiment with or observe under controlled conditions. | 1:Perform acts of kindness for a week.  2; Keep a journal rating your mood and self-perception each day.  3: Compare it to a baseline week. |
| Why are Reese’s Cups so good? | Not Testable,  1: It means different things to different people (taste, texture, memory, comfort).  2: Everyone's taste budsare different. | 1; Conduct a blind taste test with Reese’s Cups and other chocolates...  2: Ask participants to rate each one from 1 to 10.  3: Compare the average ratings. |
| Why is our galaxy moving? | Not Testable,  1; You can’t observe the galaxy directly.  2; It’s explained using science not controlled experiments. | 1; Inflate a balloon with dots each dot = galaxy  2; As you blow it up, all dots move away from each other simulating universal expansion. |
| Why do people watch TV? | Not Testable,  1: Too broad and based on **personal motivation**.  2; It involves **multiple factors** entertainment, boredom, relaxation, habit, education, etc. | 1; Survey people about their stress levels and TV habits.  2: See if people with higher stress report watching more TV. |