Teacher Answer Key

Case Study

1. She used a watt meter to compare power draw: ~70 W per incandescent strand vs. ~7 W per LED strand, and calculated monthly kWh for each.

2. She showed that if her family—and eventually the whole street—switched to LEDs, total electricity use and related neighborhood CO_2 emissions during the holidays would drop.

Multiple Choice

1. A

2. B

3. D

Matching

1-E, 2-D, 3-A, 4-C, 5-B

Fill-in-the-Blank

1) incandescent, 2) hours, 3) dioxide

Short Answer (Sample Responses)

Q1: Incandescent setup uses about 38 kWh per month, while LEDs use around 3.8 kWh; less energy used means fewer CO_2 emissions if electricity comes from fossil fuels.

Q2: Examples: replace old incandescent strands with LEDs, use timers so lights aren't on all night, limit the number of strands, or turn off other unnecessary lights when decorations are on.

Q3: One household's change is small alone, but repeated across many homes it adds up; visible actions like switching to LEDs also model sustainable behavior and support broader cultural shifts toward efficiency.