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| **Scenario #1:**  You have two fish – one goldfish and one Siamese fighting fish. You give them the same amount of food each day at the same time. One of the fish is in fresh water and the other is in salt water. The objective of the experiment is to find out which type of fish consumes more food.   * Is this a controlled experiment? Why or why not? * How would you redesign this experiment to make it controlled? * Identify the independent and dependent variable in your redesigned experiment:   + Independent:   + Dependent: |

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| **Scenario #2:**  You are hoping to find out in which season plants grow faster. You take a cactus and measure its growth during one month in spring. In the autumn, you measure a fern’s growth for one month and compare the results.   * Is this a controlled experiment? Why or why not? * How would you redesign this experiment to make it controlled? * Identify the independent and dependent variable in your redesigned experiment:   + Independent:   + Dependent: |

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| **Scenario #3:**  You have an apple tree and an orange tree in your backyard. They get the same amount of rain and sunlight. You give special fertilizer to the apple tree only to see if it helps it grow faster.   * Is this a controlled experiment? Why or why not? * How would you redesign this experiment to make it controlled? * Identify the independent and dependent variable in your redesigned experiment:   + Independent:   + Dependent: |

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| **Scenario #4:**  On a cloudy Monday you have vanilla ice cream and it melts in 5 minutes. On a sunny Tuesday, you have frozen yogurt and it melts in 3 minutes. You conclude that frozen yogurt melts faster than ice cream.   * Is this a controlled experiment? Why or why not? * How would you redesign this experiment to make it controlled? * Identify the independent and dependent variable in your redesigned experiment:   + Independent:   + Dependent: |

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| **Scenario #5:**  You have a 1995 Volkswagen and your brother drives a 2010 Toyota. You are both driving safely to your cabin at the same speed starting with a full tank of gas. You run out of gas first. He says that it is because your car is older.   * Is this a controlled experiment? Why or why not? * How would you redesign this experiment to make it controlled? * Identify the independent and dependent variable in your redesigned experiment:   + Independent:   + Dependent: |

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| **Scenario #6:**  You and your friend are baking muffins. You both follow the exact same recipe but he only has whole-wheat flour in his house and you have white flour. He forgets to set the timer and bakes for an extra 15 minutes. Your muffins rise more than his. You determine than white flour is better for making muffins.   * Is this a controlled experiment? Why or why not? * How would you redesign this experiment to make it controlled? * Identify the independent and dependent variable in your redesigned experiment:   + Independent:   + Dependent: |