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| Descriptive Investigation   * Collecting data that measures or describes objects or events * It has a question * **No** hypothesis or controlled variables | Comparative Investigation   * Observing and collecting data to find similarities and differences between two objects or events * Includes hypothesis | Experimental Investigation   * Designing a fair test using a procedure with variables & controls to answer a question or problem * Uses ALL steps of the scientific method |
| Scientific Method  Organized way to answer a science question/problem with a hypothesis, experiment, variables, multiple trials, data collection, analysis, conclusion | Hypothesis  Educated guess that can be tested to answer a scientific question or problem; an idea that can be tested by experiment or observation | Theory  A well-established, reliable explanation that has been tested in many conditions by multiple people |
| Independent Variable  Variable that is manipulated during the experiment; it goes on the x-axis  (**MIX**: Manipulated, Independent, X-axis) | Dependent Variable  Responds to changes in the independent variable and is measured; it goes on y-axis (**DRY:** Dependent, Responding, Y-axis) | Controlled Variable  Variable that is held constant during an experiment |
| Metric System  Measurement System that uses metric prefixes to represent powers of 10  (like kilo, hecta, deka, deci, centi, or milli) | Water Displacement  Method used to find the volume of an irregular object by placing the object in water and measuring how much the water volume goes up | Table  Uses columns and rows to organize data |
| Bar Graph  [http://sr.photos2.fotosearch.com/bthumb/CSP/CSP958/k9589268.jpg](http://www.google.com/url?sa=i&rct=j&q=bar+graph+clipart&source=images&cd=&cad=rja&uact=8&docid=XUFA6xFJqXWklM&tbnid=Xvh98AeRbexIdM:&ved=0CAUQjRw&url=http%3A%2F%2Fwww.fotosearch.com%2Fillustration%2Fbar-chart.html&ei=FY2HU6W-CbegsQSdwYHYAQ&bvm=bv.67720277,d.b2k&psig=AFQjCNGS4X__t9cj5peYYCELlqOqiPGveg&ust=1401478715463851)Uses bars to show or compare data in different categories or groups | Circle Graph  [http://t2.gstatic.com/images?q=tbn:ANd9GcRdTkMZL07P85zKw8oS0FFz8hpTEpMg2oMV1q7M3rbtH3yj9lZb](http://www.google.com/url?sa=i&rct=j&q=circle%20graph%20clipart&source=images&cd=&cad=rja&uact=8&docid=YSH1N1kfDKvAoM&tbnid=lPlybf2meyBhEM:&ved=0CAUQjRw&url=http%3A%2F%2Fwww.clipartguide.com%2F_search_terms%2Fpie_chart.html&ei=gI2HU6maJY6ysAStxIH4CA&bvm=bv.67720277,d.b2k&psig=AFQjCNGPu9Xy9cQDVVkAHm42f8cg8IpIsw&ust=1401478904082813)Uses a circle to show parts of a whole (percents) | Line Graph  Shows trends or changes in data, often over time  [http://www.myschoolhouse.com/clipart/LineGraph.gif](http://www.google.com/url?sa=i&rct=j&q=line%20graph%20clipart&source=images&cd=&cad=rja&uact=8&docid=GJ2rd6_iGR4EFM&tbnid=MahwdvnGkBMpCM:&ved=0CAUQjRw&url=http%3A%2F%2Fwww.myschoolhouse.com%2Fcourses%2FO%2F1%2F17.asp&ei=042HU-jhLMmmsQSi5oDoAw&bvm=bv.67720277,d.b2k&psig=AFQjCNHNDbLrnpd6qIZzF05oNQ5a_rGGNg&ust=1401478982463605) |
| Mean  The arithmetic average; add the numbers and divide by the numbers of numbers | Median  The middle number when arranged in order from least to greatest | Mode  The most frequent number in a list of numbers |