

## YOU BE THE JUDGE!

Name: \_\_\_\_\_ Date: \_\_\_\_\_

Each of these experiments can be improved. First read the paragraph, and then briefly explain on a separate sheet how you would improve the experiment.

1. Fred studied electric fans to see which fan produced the greatest wind force. He tested four different fans. Each was tested two times and the results were averaged. All fans used 120 volts and were run on the high setting. To measure the wind speed, he used a wind gauge, which was placed 30 centimeters from the center of each fan. Each fan tested had a diameter of 35 centimeters. Three of the fans had four blades and one had three blades. Fred found out that the Remington fan produced the most wind.
2. Susan studied the effects of fish oil on the growth of kidney bean plants. She grew 40 plants. One plant was her control and the other 39 received different doses of fish oil. All plants were grown in the same size containers (both plastic and clay pottery). All used the same type and amount of soil and all received equal amounts of sunlight. Susan diluted the fish oil with water so that some plants received more water and less fish oil than others. Plant #19 received 2 milliliters of fish oil and grew the best.
3. Jim tested bubblegum to see how much mass different brands lose after being chewed for five minutes. He tested four brands (A, B, C and D) and massed each unchewed piece. First, he chewed the Brand "A" piece for five minutes, massed it and subtracted this value from the unchewed value for that brand. He repeated this procedure for Brands "B" and "C". His sister did Brand "D" because his jaws became tired from chewing. Since each brand had a different original mass, he presented his results as a percentage of original mass loss. Brand "B", the gum with the cherry liquid inside, lost the most mass.
4. Rosa tested brine shrimp eggs in different levels of salty water. She wanted to find out the best salinity for hatching the eggs. Her control was a jar filled with a mixture of 100 milliliters of water, 3.5 grams of salt and 2 grams of brine shrimp eggs. She used beakers and miscellaneous jars for her experimental samples. Jar "A" had 50 milliliters of water and 10 grams of salt; Jar "B" had 75 milliliters of water and 10 grams of salt; and, Jar "C" had 100 milliliters of water and 10 grams of salt. Rosa also wanted to find out if temperature affected the hatching rate, so she placed Jar "A" in the shade, Jar "B" in a refrigerator, and Jar "C" in direct sunlight. Unfortunately, she began her project only two days before it was due and none of the eggs had hatched by the time she turned it in.