

## Examples of Experiments with two factors or two factors with blocking

1. Factors: Oven temperature (300, 350, 400 degrees F)  
Type of prepacked refrigerator cookies (sugar, peanut butter, chocolate chip)  
Response Variable: Diameter of baked cookie
2. Factors: type of paper airplane (sonic, dart, glide)  
type of paper (newspaper, typing paper, origami, legal paper)  
Response Variable: hang time
3. Factors: type of pan (glass or aluminum)  
brand of brownie mix (Betty Crocker or Gold Medal)  
blocking: day1, day 2  
Response Variable: amount of hard crust on brownies
4. Factors: Brand of refrigerated buttermilk biscuit (3 brands)  
Position on oven rack (6 positions)  
Block: oven run (5 different times)  
Response Variable: percentage change in height for biscuit.
5. Factors: Brand of Facial Tissue (3 or more brands)  
Number of sheets tested together (1,2,3,4).  
Response Variable: strength of facial tissue, as measured by number of 1 ounce fishing sinkers needed to tear open tissue clamped in embroidery hoop.
6. Factors: Amount of salt put in 12-ounce can of frozen orange juice  
(1/8 tsp, 1/4 tsp)  
Amount of sugar put in 12 -ounce can of frozen orange juice  
(1/4 cup, 1/2 cup, 3/4 cup)  
Response Variable: Percentage of melting (by weight) of frozen ice cubes made with orange juice after allowed to melt 30 minutes (cubes were put on 1/2 inch wire mesh)
7. Factors: brand of spaghetti sauce (store, national, gourmet)  
stirred or unstirred  
  
Response Variable: weight in grams of sauce that flowed through a colander in a given period of time (a thicker sauce would give rise to smaller weights).

8. Factors: brand of cereal (name, generic)  
length of time in milk. ( 1 minute, 2 minutes, 3 minutes)

Response Variable: a measure of sogginess (amount of milk before cereal – amount of milk after cereal) - details would need to be figured out here.

9. Factors: Brand of nail varnish solvent (2 brands)  
Brand of nail varnish (3 brands)

Response Variable: Time in minutes until varnish completely dissolved.

(one drop of nail varnish applied to piece of cloth and then cloth immerse in a bowl of solvent)

10. Factor: Amount of salt added to 100 ml of water (1, 2, or 3 teaspoons)  
Placement of water (cup, plate)

Response Variable: Amount of water remaining after 48 hours.

11. Factor: Brand of Ice Cream (3 brands)  
Flavor of Ice Cream (Chocolate, Vanilla, ??)

Response Variable: Melting Time of Ice Cream to the Nearest Second.

12. Factors: Brand of Fishing Line  
Level of Stress (S or NS – S means hanging a brick from line for 14 hours.)

Response Variable: Strength of Line ( hang a bucket at end of line, fill bucket with water until line broke, strength is amount of water).

13. Factors: Type of Butter (Land O'Lakes, Great Value, Cabot)  
Method for Melting (Burner, Toaster Oven)  
Response Variable: Melting times in minutes.

14. Factors: Type of Cup (Glass, Styrofoam, plastic)  
Type of Liquid (Coke, apple juice, water)  
Response Variable: Amount of time for ice cube in cup to melt.

15. Factors: Type of Fruit (apple, banana, strawberry)  
Type of Preservative ( lemon juice, oil, water)  
Response Variable: Percent of discoloring on fruit surface

16. Factors: Liquid Used for Ice Cube (Tap water, bottled water, salt water)  
Oven temp (250, 300, 350)  
Response Variable: Amount of time for cube to melt
17. Factors: Type of Flour (white, wheat, bread)  
Baking time (5 minutes, 10 minutes, 15 minutes)  
Response Variable: Height of bread roll
18. Factors: Type of Absorber (Twinkie, Sponge)  
Type of Liquid (Water, Orange juice, cola)  
Response Variable: Amount of Liquid absorbed in 2 minutes
19. Factors: Brand of Antacid (Equate, Maalox, Mylanta)  
pH level of water/vinegar solution (2.8, 3.8, 4.8)  
Response Variable: Percent change in pH level after three minutes
20. Factors: Type of Drink (lemonade, water, sprite)  
Stirring of Drink or Not  
Response Variable: Amount of time for after dinner mint to dissolve.
21. Factor: Rolling of fruit or not  
Type of Fruit (Orange, Lemon, Lime)  
Response Variable: Amount of Juice Extracted
22. Factor: Flavor of Incense (Vanilla, Cinnamon)  
Air current (No, Yes-2 feet away, Yes – 4 feet away)
23. Factor: Brand of Antacid Tablet (Plus, Regular)  
Liquid (Apple Juice, Water, Grapefruit Juice)  
Response Variable: Time to Dissolve
24. Factor: Type of Cake Mix (Pillsbury, Duncan Hines, Betty Crocker)  
Part of Egg (Compete egg, egg white)  
Response Variable: Fluffiness of cupcake
25. Factor: Type of Water (Tap, Purified, Sugar)  
Burner Size (Small, Large)  
Response Variable: Boiling Time of water