Statistical Reasoning Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

WS 6.3: Block Designs Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Day: \_\_\_\_\_\_

1. Suppose you want to test a new hand wash detergent for clothes to see if it works better in warm or cold water. The response variable is a cleanliness rating from

0 (very dirty) to 10 (very clean). We know that whites and colors react differently in water temperature so we want to block this. Draw a diagram.

1. Researchers believe that a new drug called Bone Builder will help bones heal after children have broken or fractured a bone. The researchers believe that Bone Builder will work differently on bone breaks and bone fractures. Bone Builder will be used in conjunction with traditional casts. To test the impact of Bone Builder on bones healing, researchers recruit 18 children with bone break and 30 children with bone fractures. Draw an appropriate experiment design to determine if Bone Builder will help bones heal.
2. The progress of a certain disease differs in men and women. A clinical experiments was conducted to see how two different therapies might help slow down the progress of that disease. The researchers want to test to see if the therapies are more effective than the older, traditional therapy and they also want to see if there is a difference between the two new therapies. A total of 500 subjects volunteered: 200 females and 300 males. Draw an appropriate experiment design.
3. Which of two brands of laundry detergent – Brand A or Brand B – cleans clothes better? Does one brand work better in both hot and cold water? A basket contains 120 pieces of white dirty laundry.

Identify the:

* 1. Subjects
  2. Explanatory variable
  3. Response variable

Draw a diagram to describe this experiment.