Interface between Mathematics and Science  
Teacher Professional Development Workshop  
June – July 2008

SYLLABUS

Monday, June 30
8:00 – 8:30   Gather for coffee (Swords Faculty Lounge)
8:30 – 10:00  Introductions, Getting Acquainted, Assessments
10:00 – 11:00 Preliminary conversations: Damiano – Design of Experiments
11:00 – 12:00 Preliminary conversations: Ledbetter
12:00 – 1:00  Lunch
1:00 – 2:00   Meet with facilitator to discuss lesson plans

Tuesday, July 1
8:00 – 8:30   Gather for coffee (Swords Faculty Lounge)
8:30 – 10:00  Ledbetter: Introduction to experimental design
10:00 – 11:00 Gathering data: How many bacteria are in a culture?  
               Dilution and culture of bacteria
11:00 – 12:00 What to do with data: the idea of the map
12:00 – 1:00  Lunch
1:00 – 2:00   Meet with facilitator to discuss lesson plans

Wednesday, July 2
8:00 – 8:30   Gather for coffee (Swords Faculty Lounge)
8:30 – 10:00  Damiano: Design of Experiments / Descriptive Statistics
10:00 – 11:00 Ledbetter: Counting colonies, assembling data
11:00 – 12:00 Damiano: Interpretation of data
12:00 – 1:00  Lunch
1:00 – 2:00   Meet with facilitator to discuss lesson plans

Thursday, July 3
8:00 – 8:30   Gather for coffee (Swords Faculty Lounge)
8:30 – 10:00  Damiano: Descriptive statistics / Histograms and the Normal Curve
10:00 – 11:00 Group Activity
11:00 – 12:00 Scatter Plots, Correlation and Regression
12:00 – 1:00  Lunch and focus group
1:00 – 2:00   Meet with facilitator to discuss lesson plans
Monday, July 7
8:00 – 8:30  Gather for coffee (Swords Faculty Lounge)
8:30 – 10:00  Damiano: Scatter Plots, Correlation and Regression
10:00 – 11:00  Group Activity
11:00 – 12:00  Probability Basics
12:00 – 1:00  Lunch
1:00 – 2:00  Meet with facilitator to discuss lesson plans

Tuesday, July 8
8:00 – 8:30  Gather for coffee (Swords Faculty Lounge)
8:30 – 10:00  Ledbetter: Mendel’s experiments and transmission genetics
10:00 – 11:00  Crossing over during meiosis in *Sordaria*
11:00 – 12:00  Analysis of the data
12:00 – 1:00  Lunch
1:00 – 2:00  Meet with facilitator to discuss lesson plans

Wednesday, July 9
8:00 – 8:30  Gather for coffee (Swords Faculty Lounge)
8:30 – 10:00  Damiano: Modeling Chance
10:00 – 11:00  Application to data from *Sordaria*
11:00 – 12:00  Modeling Mendel’s Experiments
12:00 – 1:00  Lunch
1:00 – 2:00  Meet with facilitator to discuss lesson plans

Thursday, July 10
8:00 – 8:30  Gather for coffee (Swords Faculty Lounge)
8:30 – 10:00  Ledbetter: Genetically modified organisms and means of detection
10:00 – 11:00  Polymerase Chain Reaction to identify introduced genes
11:00 – 12:00  (continued)
12:00 – 1:00  Lunch and focus group
1:00 – 2:00  Meet with facilitator to discuss lesson plans
Monday, July 14
8:00 – 8:30   Gather for coffee (Swords Faculty Lounge)
8:30 – 10:00  Ledbetter: Phenotypes and population genetics
10:00 – 11:00 Phenotype frequencies of the class
11:00 – 12:00 Discussion and interpretation of data
12:00 – 1:00  Lunch
1:00 – 2:00   Meet with facilitator to discuss lesson plans

Tuesday, July 15
8:00 – 8:30   Gather for coffee (Swords Faculty Lounge)
8:30 – 10:00  Damiano: Confidence Intervals and Significance
10:00 – 11:00 Group Activities
11:00 – 12:00 (continued)
12:00 – 1:00  Lunch
1:00 – 2:00   Meet with facilitator to discuss lesson plans

Wednesday, July 16
8:00 – 8:30   Gather for coffee (Swords Faculty Lounge)
8:30 – 10:00  Ledbetter: Genetic evidence for human evolution
10:00 – 11:00 (continued)
11:00 – 12:00 Overall assessments and post-test
12:00 – 1:00  Lunch
1:00 – 2:00   Bell: Evaluating Student Learning

Thursday, July 17
8:00 – 8:30   Gather for coffee (Swords Faculty Lounge)
8:30 – 10:00  Damiano: Presentation of lesson plans
10:00 – 11:00 (continued)
11:00 – 12:00 Conclusions
12:00 – 2:00  Celebratory banquet lunch and networking plans