

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
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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
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