

# Math Modeling 9-12 Institute Homework

## Important:

- Do the reading and be prepared to respond to the HW questions during the opening session of the next day. If you are not applying for Education Credit, you don't need to write anything, but quick notes or highlighting will be helpful.
- If you are applying for Education Credit, type your answers in a Word or Pages file, to be submitted all at once no earlier than June 27<sup>th</sup>.
- Use this typical Filename: Jane Doe Modeling 4-8 HW. Please use this filename template exactly – it will make my life much easier.
- In your HW file, clearly specify the days assigned. For example  
Day 1 HW  
*Your text*

### Day 2 HW

*Your text* Same for Days 3 and 4.

- E-mail this file with all HW completed to [lewdouglas@berkeley.edu](mailto:lewdouglas@berkeley.edu) by Friday Monday July 18, 2014. If you need an extension, ask for one and give a reason. I can't submit the forms until July 30, so you can expect to receive your credit confirmation around Aug. 15<sup>th</sup>.

## Monday Night HW:

1. Download **Appendix D of the CA Math Framework** from <http://www.cde.ca.gov/ci/ma/cf/draft2mathfwchapters.asp>. Read lines 1-142 and be prepared to discuss the reading.
2. Read **Principles for Mathematics Instruction for ELLs**. Which of the bullets in the four principles on pages 4 and 5 struck you the most? Which are you already aware of? Which would you like to focus on more? (The article is from [http://ell.stanford.edu/teaching\\_resources/math](http://ell.stanford.edu/teaching_resources/math).)
3. **For Educational Credit,**
  - a. Write a few paragraphs about how your understanding of math modeling has evolved as a result of the Appendix D reading and today's sessions.
  - b. Write a few paragraphs about your experience teaching ELLs so far and the most important things you learned from reading the article in #2.

**Tuesday Night HW:**

1. Bring an image or video designed to elicit questions and provoke the modeling cycle.
2. Read Lines 143 – 205 of Appendix D of the CA Math Framework
3. **For Educational Credit,**
  - a. Write a paragraph about what images and/or videos you considered and why you choose the one you did.
  - b. Consider the roles of teacher and student described. Which parts are you most comfortable with? Least comfortable?
  - c. Consider the “Spectrum Table” starting on page 13. What is the highest level that your students grapple with currently? What is the highest level you aspire to in 2014-15 for your students? Provide some reasons for your answers.

**Wednesday Night HW:**

1. Identify the core questions your modeling task will ask and the core content it will target.
2. Read lines 206-309 of Appendix D of the CA Math Modeling Framework
3. **For Educational Credit,** write a few paragraphs about your reaction to the reading, including discussion of the table following line 215.

**Thursday Night HW:**

1. Refine your modeling task if it needs it, or work on another one if it doesn't. In particular, plan how you will take or find more video and pictures that you can use.
2. **For Educational Credit:**
  - a. Read the rest of Appendix D of the CA Math Modeling Framework. Which of the modeling problem ideas on pages 20, 22, 23 and 26 (in the boxes) appeal to you. How could you use them in a course next year?
  - b. Create a useable lesson plan for your modeling task. It should be clear enough that another teacher who has some experience with mathematical modeling can understand it and use it. Use whatever template you want. If you need some samples, e-mail Lew and he will e-mail some to you.
3. Optional: Read ***Orchestrating Discussions***, by Peg Smith et al. If you like it, you may want to buy ***5 Practices for Orchestrating Productive Mathematics Discussions***, published by NCTM. Cost on Amazon is \$27.)