

**Assignment # 2 Quantitative Thinking in the Life Sciences**  
**(Assigned on September 5<sup>th</sup> . Due on September 12<sup>th</sup>)**

1. Concept or Logic Map
  - 1.1. Continuing with the concepts learned in class, develop a concept map for your system or question (if you have multiple questions or systems, just choose one).
  - 1.2. Write a complete document describing the concept map and background details needed to understand this map.
  - 1.3. Introduce your ecosystem
    - [ Sunflower cropping system. Sunflowers are an important agricultural crop with annual revenue from oil and seed estimated to be...]
  - 1.4. Introduce the question / function
    - [ When does the Sunflower stem weevil emerge and oviposit on the sunflower crop?]
  - 1.5. Introduce the major components driving your system and informing your question.
    - [the focal species – the sunflower stem weevil, its host - the sunflower crop, its predators, its environment, etc]
  - 1.6. Methods: a sentence or so, about the concept of a concept map
  - 1.7. Results: the concept map
    - My concept map is available under the link *September 5<sup>th</sup> concept map example* under the courses tab on my website: <http://www.uvm.edu/~scmerril/Courses.html>
  - 1.8. Discussion: touch on the factors and how they are likely linked together
    - [Emergence is likely driven by heat units and precipitation events, with ovipositioning success linked to overwintering success and crop growth stage. Etc.]
  - 1.9. References as needed
  
2. Basic coding in R
  - 2.1. Run through the *Chapter 2: Sept 5<sup>th</sup> R Code* found under the courses tab:
    - <http://www.uvm.edu/~scmerril/Courses.html>
  - 2.2. Turn in your code (remember to annotate!) and results as part of this assignment