

STUDENT GUIDE

ELABORATE LESSON 13



Part 1: Our Motivation

Record what we were trying to figure out that led to this investigation.



Part 2: Observing New Phenomenon

Read the “Case Studies” handout. In your own words, describe what happened to the athletes in the two different articles.

Case Study #1	Case Study #2

Record the questions we will investigate based on the results you observed.



Part 3: Creating and Sharing Initial Explanations

Use your knowledge from this module to explain why you think the two athletes had the medical problems you read about.

Case Study #1	Case Study #2



Part 4: Using a Model to Observe How Changes to the Amount of Water in the Bloodstream Impact the Body

Record what you notice happening to the amount of water in the different components of the model.

Model 1: Model of Dehydration and Overhydration

Dehydration Model	Initial Conditions	After 12 hours

Overhydration Model	Initial Conditions	After 12 hours

What did you observe in this model?

Model 2: Cell Membrane Simulation

Dehydration Model	Initial Conditions	After 12 hours (60 seconds in the simulation)

Overhydration Model	Initial Conditions	After 12 hours (60 seconds in the simulation)

What did you observe in this model?

What conclusions can you draw from both Model 1 and Model 2 about what happens inside the body during dehydration and overhydration?



Part 5: Gathering Information from Texts

Read the “Dehydration and Overhydration Texts” handout. Record important quotes or summarize information that you find that will help us answer the questions we are investigating. As you do so, be sure to describe how changes in water in the cells of various organs can affect their function.

Dehydration Article

Overhydration Article

**Part 6: Constructing Explanations**

Using the evidence you have gathered, explain how both people became sick and died. In your response, be sure to:

- Describe how changes to the amount of water in cells of the body may have caused the death of the two individuals.
- Cite evidence from at least two different sources from this lesson.