

## Rebekah Jones, Utah

**Title:** Egg Digestion in a Test Tube

**Description:** Egg digestion experiment using the enzyme pepsin as a catalyst

**Background:** Students will use various solutions to test the digestion of a piece of hard boiled egg in a test tube.

**Materials:** Depending on class size, put the following solutions in the correct number of small flasks, and have the student groups take turns adding the correct solution to the correct test tube. 1 gram of pepsin (lab grade 1:3,000) powder added to 100 mL of distilled water, 100 mL distilled water, 20 mL 1% hydrochloric acid (added to test tubes 3 and 4 by teacher). Graduated pipettes for each solution. 4 test tubes for each student group (screw top test tubes with caps work best), 1 to 2 hard boiled eggs cut in small uniform pieces for each class.

**Background Knowledge:** Students should have an understanding of enzyme function. Use the data chart below to explain to students what solution needs to go into each test tube. Fill out the first half of the student worksheet as a class. For the procedure draw four test tubes on the board and have students diagram what goes into each test tube. Explain to students that the test tube with only water is the control.

The following are the results you should expect to see in the data table.

Data: Observations

Test Tubes	Day 1	Day 2	Day 3
1. Egg+ Water (5mL)	No change	No change	No change
2. Egg + Water (2mL) + Pepsin (3 mL)	No change	No change	Liquid a little cloudy
3. Egg + HCl (1mL) + Water (4mL)	No change	No change	No change
4. Egg + Pepsin (3mL) + HCl (1mL) + Water (1mL)	Liquid cloudy, egg piece smaller	Liquid very cloudy, egg almost gone	Liquid very cloudy egg completely gone

If you have any question please contact [rebekah.jones@uintah.net](mailto:rebekah.jones@uintah.net)

## Egg Digestion Experiment

Name

List two things you could vary in this experiment

- 1.
- 2.

List one things you could measure

List five things you should keep constant in your experiment

- 1.
- 2.
- 3.
- 4.
- 5.

### Question:

What is the control in your experiment?

### Hypothesis:

### Procedure:

**Data:** Write your observations

Test Tubes	Day 1	Day 2	Day 3
1. Egg+ Water (5mL)			
2. Egg + Water (2mL) + Pepsin (3 mL)			
3. Egg + HCl (1mL) + Water (4 mL)			
4. Egg + Pepsin (3mL) + HCl (1mL) + Water (1mL)			

**Conclusion** (include these parts):

Summary (what did you do?)

Cause and effect (what happened and why)

Hypothesis (was it supported by your data or not)

Further Study (what you would change)