Name: _____ Date:_____

G7

Chapter 4 Cell Processes (pg 97)

Explore Activity

If you forget to water a plant, it will wilt. After you water the plant, it probably will straighten up and look healthier. Why does the plant straighten? In the following activity, find out about water entering and leaving plant cells.

Demonstrate why water leaves plant cells:

1. Label a small bowl “salt water.” Pour 250mL of water into the bowl. Then add 15g of salt to the water and stir.
2. Pour 250mL of water into another small bowl.
3. Place 2 carrot sticks into each bowl. Also, place two carrot sticks on the lab table.
4. After 30 min. remove the carrot sticks from the bowls and keep them next to the bowl they came from. Examine all 6 carrot sticks , then describe them in the table below.

Treatment	Observations

Predict what would happen if you moved the carrot sticks from the plain water to the lab table, the ones in the salt water into the plain water, and the ones from the lab table to the salt water. Answer in at least 3 full sentences.

Chapter 4, Section 1: Chemistry of Life (pg 98)

Reading Check: What types of things are made up of elements?

Mixture-

Reading Check: Why is a combination of sugar and salt said to be a mixture?

Quick Demo: Mixtures and Compounds
What did you observe in this demo? What did this demonstrate/model?

Organic Compound-

Enzymes-

Inorganic Compounds-

Section 1 Assessment: Answer in FULL sentences
1. What are similarities and differences between atoms and molecules?

2. What is the difference between organic and inorganic compounds? Give an example of each type of compound.

3. What are four types of organic compounds found in all living things?

4. Why does life as we know it depend on water?

5. If you mix salt, sand, sugar, and water in a small jar, will the resulting mixture be a suspension, a solution, or both?

Minilab (pg 103) Determining how Enzymes work.
Procedure:
1. Get three small cups of prepared gelatin from your teacher.
2. On the gelatin of one cup, place a piece of fresh pineapple. On the gelatin of a second cup, sprinkle meat tenderizer. Do not add anything to the third cup.
3. Let the three cups stand unbothered for 30 minutes.
4. Observe the 3 cups and record your observations in the table below.

Treatment	Observations

Analysis:
1. What effect did the piece of fresh pineapple have on the gelatin?

2. What effect did the meat tenderizer have on the gelatin?

3. What does fresh pineapple and meat tenderizer contain that caused the effects you observed?

4. Why do preparation boxes on a box of gelatin dessert tell you not to mix it with fresh pineapple?

Ch. 4 Section 2: Moving Cellular Materials (pg 106)

Passive Transport-

Diffusion-

Equilibrium-

Reading Check: What is Equilibrium, in your own words?

Osmosis-

Reading Check: Why do carrots in salt water become limp?

Active Transport-

Endocytosis-

Exocytosis-

Section 2 Assessment: Answer these in FULL sentences
1. Explain how cell membranes are selectively permeable.

2. Compare and Contrast the processes of osmosis and diffusion.

3. Identify the molecules that help substances move through the cell membrane during active transport and facilitated diffusion.

4. Why are endocytosis and exocytosis important processes to cells?

5. Think Critically. Why are fresh fruits and vegetables sprinkled with water at the grocery store?

MiniLab (pg 107) Observing Diffusion
Procedure:
1. Use two clean glass beakers of equal sizes. Label one “hot” and fill half way with very warm water. Label the other beaker “cold” and fill half way with very cold water.
2. Add one drop of food coloring to each beaker. Carefully release the drop at the water’s surface to avoid splashing.
3. Observe the beakers and record your observations in the table below. Observe and record again after 15 minutes.

Treatment and Time	Observations

Analysis
1. Describe what happens when food coloring is added to each glass (using vocabulary from this chapter)

2. How does temperature affect the rate of diffusion?

Ch. 4 Section 3: Energy For Life (page 113)

Metabolism-

Photosynthesis-

Respiration-

Reading Check: What must happens to food molecules for respiration to take place?

Fermentation-

Reading Check: Where in a cell does fermentation take place?

Quick Demo: What did you observe and what did you learn from it?

Section 3 Assessment: Answer in FULL Sentences

1. Explain the differences between producers and consumers and give 3 examples of each.

2. Explain how the energy used by many living things on Earth can be traced back to sunlight.

3. Compare and Contrast respiration and fermentation.

4. What condition must exist in cells for fermentation to occur?

5. Think critically. How can some indoor plants help improve the quality of air in a room?

Lab Activity: Observing Osmosis (Page 112)

It is difficult to see osmosis occurring in a cell because most cells are so small. However, a few cells can be seen without the aid of a microscope. Try this activity to see how osmosis occurs in a large cell.

What you will investigate:

How does osmosis occur in an egg?

Materials: unshelled egg, scale, distilled water (250mL), Light corn syrup (250mL), spoon, 500mL container

Goals:

- Observe osmosis in an egg cell
- Determine what affects osmosis

Procedure:

1. Obtain an unshelled egg. Handle the egg very gently! Use a scale to measure the egg's

mass. Record the mass.
2. Place the egg in the 500mL container, and add enough distilled water to cover the egg.
3. Observe and record the appearance of the egg after 30 minutes, 1 day, and two days.
4. On day two, remove the egg with a spoon and allow the water to drain off of it. Measure and record the mass of the egg.
5. Empty the container , then put the egg back in. Add enough corn syrup to cover it and repeat steps 3 and 4.

Data:
Initial mass of egg _____
Observations after 30 minutes:

Observations day 1:

Observations day 2:

Mass of egg after 2 days in distilled water_____
Observations after 30 minutes:

Observations after 1 day:

Observation after 2 days:

Mass of egg after 2 days in corn syrup _____

Conclude and Apply:
1. Explain the difference between what happened to the egg in water and in corn syrup.

2. Calculate the mass of water that moved into and out of the egg.

3. Hypothesize why you used an unshelled egg for this experiment.

4. Infer what part of the egg controlled water's movement into and out of the egg.

Chapter 4 Study Guide (pg 123)
Using Vocabulary: Write the letter and the WORD!!

1.	2.
3.	4.
5.	6.
7.	8.

Checking Concepts: Write the letter and the WORD!

1.	2.

3. 4.

5. 6.

7. 8.

9. 10.

Think Critically: Answer in FULL sentences

11.

12.

13.

14.

15.

Developing Skills: Answer in a full sentence or draw what is asked

16.

17.

18.

Test Practice: Write the letter and the word of the answer

1.

2.