Predict what will happen to an eggplant if it is covered in salt

Predict what will happen to an eggplant if it is put into water

grade pg 2 and 3 **(set up eggplant)**

Which plant was grown in salt water?

A 

B 

Explain your choice from the previous question

Eggplant

Where did that come from?

Take Out: Blue Warm Up Sheet- Thursday
Ecology Disrupted Case Study Packet
Open to pg 3 to show you finished your homework

To Get: Chrome Book- Log into weebly

Homework: Pg 4&5: Complete Reflection Questions and Wrapping It Together if not done in class

Set Up Eggplant Demonstration

If you haven't answered the questions on the top of pg 3...DO IT NOW bc I will record a grade at the beginning of class

Homework from last night- pg 3

Wrapping it all together

1. What is the research question for this case study?

How does salt from roads affect rivers/streams.

2. Why do cities use road salt?

Salt melts ice to allow safe travel

3. During snowy and icy months, which nearby streams do you think will have the highest levels of salt: urban, suburban, or forested? **Why**?

(pick an answer)....explain why

Get your bag with your seeds. Unwrap the paper towel and count the number of seeds that have germinated.

Evid

Time (Day)	Control Group 0 mg/L NaCl		Experimental Group __ mg/L NaCl	
	Number of seeds germinating	%	Number of seeds germinating	%
0	0	0	0	0
1	0	0	0	0
2	3	30	1	10
3				
4				

Fill in the chart for day 1 control group and day 1 experimental group.

Ex: 5 seeds germinated = 50%

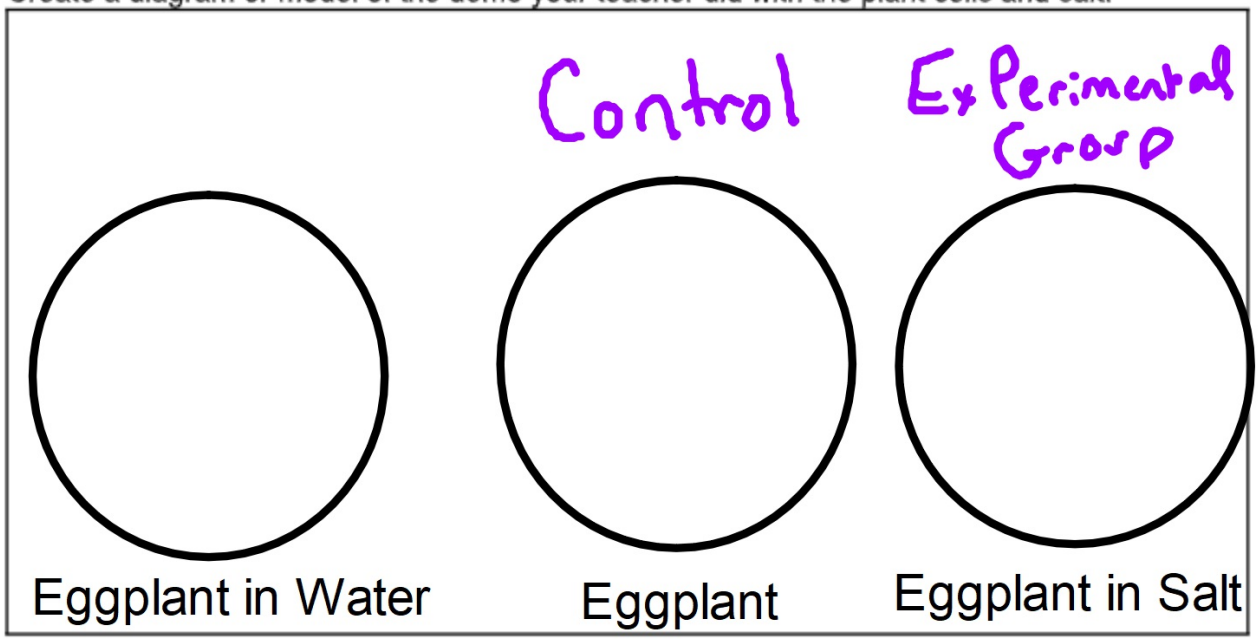
Calculating %: (# observed germinating/ Total number of seeds) x 100 = %

View the Results of the Eggplant Demonstration

Part 2: Salt and Ecosystems

THE EFFECT OF SALT ON PLANT CELLS:

Create a diagram or model of the demo your teacher did with the plant cells and salt:



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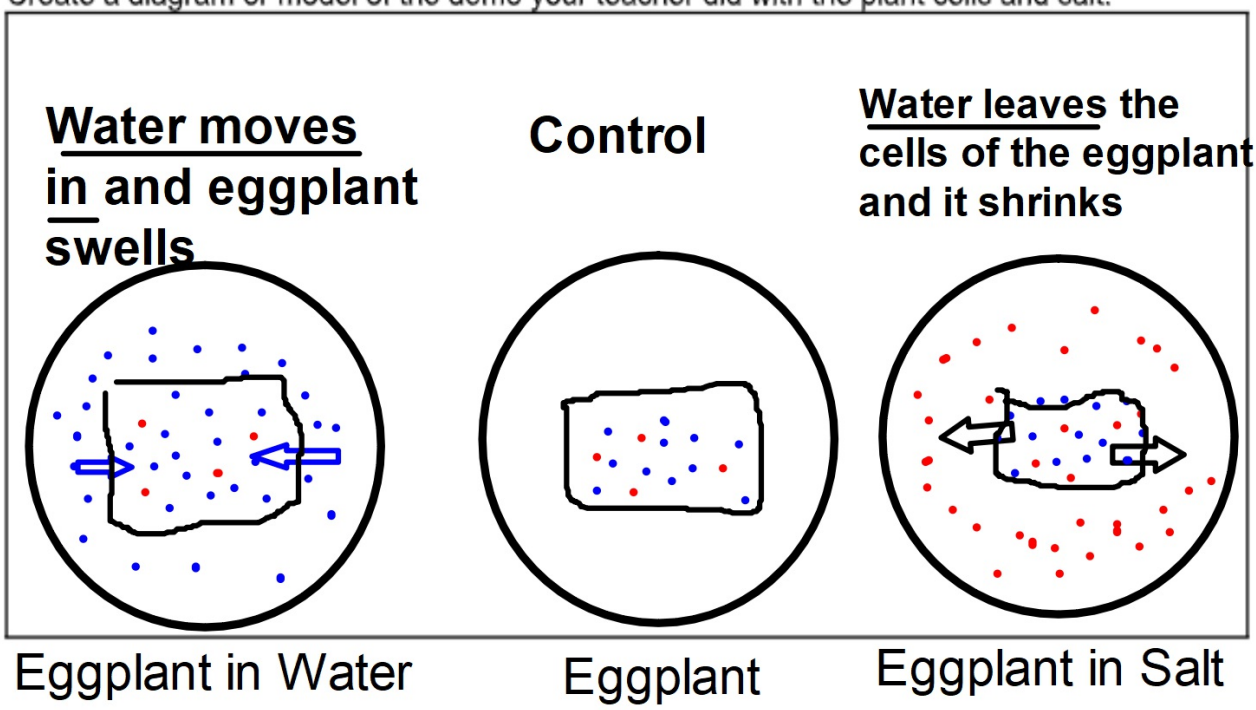


Read the Review of Osmosis in your case study packet
As you read:

1) Number the paragraphs
2) Circle Key Terms
3) Underline important information

Pg 3 in packet

Review:

Molecules are in constant motion, and tend to move from areas of higher concentrations to lesser concentrations. Diffusion is defined as the movement of molecules from an area of high concentration to an area of low concentration. The diffusion of **water molecules** through a selectively permeable membrane is known as Osmosis. Selectively permeable means that some molecules can move through the membrane while others cannot.

Movement through membranes is called transport. The difference between high and low concentration is known as the concentration gradient. Diffusion and osmosis are passive forms of transport; this means that do not need energy to move areas of high concentration to areas of low concentration. Active transport requires energy to transport molecules from low concentration to high concentration. Osmosis is the movement (transport) of water (small dots) through a selectively permeable membrane from an area of high concentration to an area of low concentration.

How does the information in the reading relate to what you saw in the eggplant demonstration?

Turn to your table partner and discuss these questions for 1 minute

Where did all of the water come from?

What will happen to the eggplant without all of that water?

What happens to you when you eat really salty foods like chips? What do you think is happening to your cells?

Explain what would happen if a person drank sea water

Access the Salt In Ecosystems Infographic on weebly

Sept 12 on weebly

fill in chart and then answer questions on pg 4 and 5

Summarize the infographics in the Chart and then complete the Reflection Questions

	List at least two organisms that live in this ecosystem	How will changing salt levels affect the organisms that live in this ecosystem?
Forest		
Fresh Water		
Swamp		
Marsh		
Estuary		
Ocean		

THE FOREST

Table of Contents

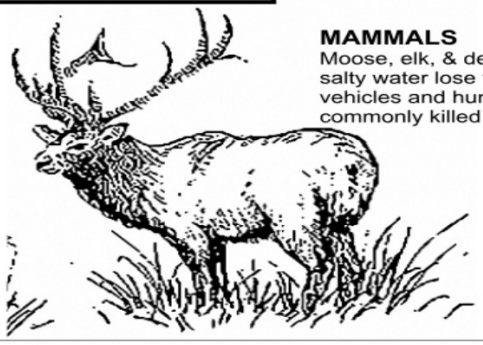
PLANTS
The Mountain Holly and Tamarack plants cannot grow in salt levels higher than 170 mg/L.

SALT is not a normal part of this ecosystem.

BIRDS
Seed eating birds may eat road salt crystals because they think they are seeds. These birds may then die.

DID YOU KNOW?
About 8 to 12 million tons of road salt is used per year in the United States.

ROOTS AND SEEDS
Salt levels of 100 mg/L can affect water absorption, root growth, seed sprouting. The loss of habitat harms animals that depend on the land for food, shelter, and breeding sites.



MAMMALS
Moose, elk, & deer that drink salty water lose their fear of vehicles and humans and are commonly killed by traffic.

	List at least two organisms that live in this ecosystem	How will changing salt levels affect the organisms that live in this ecosystem?
Forest		

Reflect on what you have learned:

1. At what level does salt start to affect non-saltwater organisms in the forest? Is it a small or large amount and which organism is most affected?

2. At what level does salt start to affect non-saltwater organisms in a freshwater pond? Is it a small or large amount and which organism is most affected?

3. Pine trees are hurt by salt levels as low as 67.5 mg/L, but people are allowed to drink water with more salt than that level. What system/organs in humans help to regulate the salt levels in your body?

4. Why is it okay for people to drink water with some salt, but bad for people if they drink water that is too salty? (Relate this to osmosis…what will happen to your cells?)

5. Some of the organisms that are most affected by salt are the small pants and animals that are lowest on the food chain. How will their death affect other biotic factors in a freshwater ecosystem?

6. How is it possible for a freshwater swamp to turn into a salt marsh without trees? What happened to the trees? What human activity can lead to this?

Wrapping it all together

1. Support the statement that the *salt level* isn't the problem for ecosystems; the *problem is changing the amount of salt* in an ecosystem. Give a specific example.

2. List three ways that salt can negatively affect organisms in a freshwater, forest or swamp ecosystem.

i.
ii.
iii.