**The Black Pearl: Scene 1**

It is a regular spring morning in your absolute favorite class, Ms. Story's Biology course. You and your classmates have just finished learning about the cell membrane, which is made up of the phospholipid bilayer, and how it maintains homeostasis for the cell. You were excited to learn about osmosis and how water moves into and out of the cell, based on the type of solution the cells are submerged in. Confident in your knowledge, you are putting your new notes away and getting ready for some daily work, when suddenly…..

The door to the classroom swings open, blown by a mysterious, salty, warm wind. The scent of the sea, adventure, and rum fills the classroom. Puzzled, you stare at the door to the room, wondering what could be causing these strange conditions on a cool Georgia morning. In swaggers Captain Jack Sparrow.

“Yoho scientists! I have a use for you. Alas, my beloved ship, The Black Pearl, came under attack in the Atlantic Ocean…now the only thing I care about in this world lies at the bottom of the sea” Jack says, striding confidently into the classroom. “She has been sleeping on sea floor for 250 years.”

“Jack,” Ms. Story says calmly, “We are all very sorry about your ship, obviously, but how could we help you with this? We are nowhere near the coast, and besides, we don’t even have a ship to raise yours with. What could we do?”

Jack smiles at the class broadly. “While sailing the seven seas I have heard tales of the young minds at work in this class. I need you young scallywags to figure out if I were able to raise The Pearl, would I still be able to save her? Would she be fit to sail?”

“Well, Jack...there are a lot of variables...” said Ms. Story doubtfully, “but I think my class can take the case. These old land lubbers can solve any problem with science!”

“Excellent!” exclaims Captain Jack “send me a message in a bottle when you’ve reached your conclusions...I’ll be awaiting your good news.” Jack jubilantly leaves the room, confident that your class can solve his puzzle and determine whether or not his ship will be sailable. You’re now on the case.
### Box Chart: The Case of The Black Pearl

**Big Idea:** What is the topic all about? What must I know and be able to communicate to others? What are the key concepts I need to know, understand, and apply?

**Essential Question:** What questions do I need to answer to help me understand the big idea and make connections to the real world? What questions will get me thinking about key concepts and big idea of the lesson? How can I use my prior knowledge to answer questions?

**Problem:** What is the questions you need to answer? What is the problem you want to solve? What are you trying to find out?

**Hypothesis:** What is your prediction about the problem? What do you think is going to happen?
Questions to Consider

What would you ask in an interview with waterlogged wood conservator?

How would you solve Jack’s problem using your knowledge of osmosis and solutions?

What way would you design an experiment to determine if the Black Pearl will still be sailable when it is brought up?

Propose a method in which you can determine what happened to Jack’s ship after it sunk.

Form a hypothesis: Knowing what you know about osmosis and solutions, do you think Jack’s ship is salvageable. Why or why not?
Assignments

- Rubric for letter in folder
- Rubric for lab design in folder
- Ticket out the door assessment in folder
- Peer evaluation document in folder