5-E Lesson Plan Template

Your Name: PUSD Science	
Grade Level: 6th grade	Subject Area: Physical Science
Lesson Title: Sink or Float?	Lesson Length:

The Teaching Process

Lesson Overview Students will be learning about the physical characteristics of solids, liquids and gases
Unit Objectives: **1. Asking questions and defining problems** **2. Developing and using models** **3. Planning and carrying out investigations** **4. Analyzing and interpreting data** **5. Using mathematics and information and computer technology** **6. Developing explanations and designing solutions** **7. Engaging in argument** **8. Obtaining, evaluating, and communicating information**
Standards addressed **Design a solution that solves a practical problem by using characteristic chemical and physical properties of pure substances.**
List of Materials **Ice, cups, rubbing alcohol and water**

Instructional Sequence

Phase One: Engage the Learner	
These activities mentally engage students with an event or question. Engagement activities capture students' interest and help them to make connections with what they know and can do. The teacher provides an orientation to the unit and assesses students[1] prior understanding of the concepts addressed in the unit. **Groups of students are given a list of objects and they need to determine if the objects will sink or float**	
What's the teacher doing? Walking around the room and listening to student discussions	What are the students doing? Discussing and determining the correct answer for the activity

Phase Two: Explore the Concept	
Students encounter hands-on experiences in which they explore the concept further. They receive little explanation and few terms at this point, because they are to define the problem or phenomenon in their own words. The purpose at this stage of the model is for students to acquire a common set of experiences from which they can help one another make sense of the concept. Students must spend significant time during this stage of the model talking about their experiences, both to articulate their own understanding and to understand another's viewpoint. **Notebook Entry: Ice Cubes**	
What's the teacher doing? Observing students and listening to student conversations	What are the students doing? Observing and Comparing the effects of two liquids on ice

Phase Three: Explain the concept and define terms	
Only after students have explored the concept does the curriculum and/or teacher provide the scientific explanation and terms for what they are studying. The teacher may present the concepts via lecture, demonstration, reading, or multimedia (video, computer-based). Students then use the terms to describe what they have experienced, and they begin to examine mentally how this explanation fits with what they already know. **Vocabulary terms: Density, Buoyancy, solid, liquid, gas, melting,**	
What's the teacher doing? Explaining density and buoyancy- how the two concepts are related to one another and why ships float.	What are the students doing? Watching short video clips, defining words and creating examples of density and buoyancy in the real world. Solve mathematical problems related to density and buoyancy

Phase Four: Elaborate the Concept	
Students elaborate on their understanding of the concept. They are given opportunities to apply the concept in unique situations, or they are given related ideas to explore and explain using the information and experiences they have accumulated so far. Interaction between the students is essential during the elaboration stage. By discussing their ideas with others, students can construct a deeper understanding of the concepts. **Foil boat activity – students will create a tinfoil boat that can carry the most paperclips**	
What's the teacher doing? Circulating among groups and assisting as needed	What are the students doing? Creating a boat that will hold the most paperclips

Phase Five: Evaluate students' Understanding of Concept	
The final stage of the model has a dual purpose. It is designed for the students to continue to elaborate on their understanding and to evaluate what they know now and what they have yet to figure out. Evaluation of student understanding should take place throughout all phases of the instructional model. The evaluate stage, however, is when the teacher determines the extent to which students have developed a meaningful understanding of the concept. **Students will design and build a hot air balloon.**	
What's the teacher doing? Circulating and helping with materials	What are the students doing? Constructing and testing hot air balloons