**Sink of Float? 2nd Grade Science**

| Standard                  | S.RS.02.13  Recognize that when a science investigation on sinking and floating of objects or substances is done the way it was done before, similar results are expected  
|                           | P.PM.02.12  Describe objects and substances according to their properties (color, size, shape, texture, hardness, liquid or solid, **sinking or floating**). |
| Objective/Target and I can statements – written in student friendly language | • The learner will describe an object as being able to sink or float.  
• The learner will explain the process to test for sinking and floating.  
  o I can test an object to see if it can float or sink.  
  o I can write out a plan for how to test for sinking or floating.  
• By carrying out the process of testing items with multiple trials, students will understand that repeating the process in a similar way will lead to similar results. |
| Lesson Management: Focus and Organization | • When giving instructions, divide the jobs in half: table groups have 4 students at a table, make two groups. Group A will have a set of instructions for measuring mass (have Group A repeat the instructions back to you). Group B will have a set of instruction for testing sinking or floating (have Group B repeat the instructions back to you.)  
  • Instructions  
    o Mass measurers: raise your hands  
    o You will use the balance to measure the mass  
    o Add up your grams and write the total on your chart in the mass column  
    o Tell me mass measurers, what are you going to do? (repeat back steps)  
    o Sinkers or floaters: raise your hands  
    o After the mass is recorded, you will take the fruit  
    o Carefully place the fruit in the water  
    o Watch it for 10 seconds, did it sink or float  
    o Write it down in the 1st try column  
    o Then test it AGAIN  
    o Write down what happens in the 2nd try column  
    o Sinkers or floaters, what are you going to do?  
    o All finished, raise your hand (repeat back)  
• Table points can be given to groups who follow directions quickly  
• Use a countdown to transition students between menial tasks (name on paper, writing down prediction, etc.) |
| Introduction: Creating excitement and focus for the lesson target | • Have a watermelon (or other large fruit) on table with a container of water  
• I was at the store the other day deciding what kind of fruit I wanted, I would pick one up, then another… and I began to wonder what would happen if I placed this fruit in a bowl of water. My mind wonders some interesting things. So then I began to wonder... How could I find out? How could I test this like a scientist?**"** |
| Input: Setting up the Lesson for Student Success | 1. Task Analysis  
  • Learners need to know how to use the balances. A quick review will take place if necessary (Put your fruit in one side, then put the colored tiles in the other until the balance is level."  
  • I was at the store the other day deciding what kind of fruit I wanted, I would pick one up, then another… and I began to wonder what would happen if I placed this fruit in a bowl of water. My mind wonders some interesting things. So then I began to wonder… how could I find out? How could I test this like a scientist? (Have fruit on table and a pitcher of water) **2 min**
• Take some thoughts 3 min
• We are going to test it out. First, we need to make a prediction. Each table will get different fruit and you will all make predictions, but first I would like to make a class prediction on what you think a watermelon will do: sink or float? 3 min
  o If you say: I predict the watermelon will sink, stand up (take poll)
  o If you say: I predict the watermelon will float, stand up (take poll)
• On your own chart, write down the name of the two objects you have. Then write a prediction: I predict the ______ will _______. Write a prediction for both objects. Your prediction might be different than your table partners. *Give them one fruit first, then the other after they switch jobs?* 1 min
• (Allow time for predictions to be written)
• There will be two jobs: There are two shoulder buddies at each table. One table has a group of 3 (Name off shoulder buddies). In this first round, one pair of shoulder buddies will measure the mass, then the other pair will test for sinking and floating ***make simpler instructions*** (raise your hand if you are measuring for mass this time… raise your hand if you are measuring for sinking or floating…) 4 min
  o Each table will get one balance, two fruit, and one pitcher of water
  o First fruit: one table pair will measure the mass, then second table pair will test for sink or float two times
  o Second fruit: switch jobs- other pair will measure mass, then the remaining pair will test for sink or float two times.
• Mrs. Douglas told me what excellent scientists you are and that you already know how to use the balance.
  o Quick review set up and how to take the measurements 2 min
• After the mass has been measured and recorded, then the fruit will be passed to the sink or float testers. You will place the object in the water and let it go. Watch it for 10 seconds and record what you see. Does it sink or float? After you write that down, test it again. 2 min
• Raise your hand when you have your measurements, I will come around and check. Once you have your first test complete, I will give you a new fruit. Switch jobs and test again.
• Share results and record.
• Time for testing 15 min
• Test the watermelon 2 min
• Discuss together the written response. As a class, come up with an answer. Write it together. Allow time to draw picture 10 min

2. Thinking Levels: Revised Bloom’s Taxonomy – questions to engage students’ thinking:

   Remembering – how to use balance
   Understanding – explaining how to plan investigation
   Applying– use results to plan future investigations

3. Accommodations; differentiating to meet student needs
• Remediation/Intervention; teacher will meet with students who are struggling and provide more instruction, more time will be given to groups who need it
• Extension/Enrichment ; challenge students to manipulate an object like play dough to make it float
• Learning styles: visual- chart, demonstration; auditory- share and discuss results, and tactile-hands on investigation

4. Methods, Materials, and Integrated Technology
• Materials:
  o Assortment of fruit (strawberries, apple, orange, grape, etc.)
  o Containers to hold water
- Water
- Balances
- Mass units (gram blocks)
- Chart to record data
- Written response sheet

- Instructional techniques: ways of presenting; discussion, demonstration, and collaboration
- Engagement strategies: echo back instructions, taking a poll of predictions by standing, verbally sharing results

### Modeling: “I DO”
- Have a model of how to write a prediction on the board (on class chart) “I predict _____ will float/sink.”
- Model instructions:
  - How to use balance
  - How to test for sinking or floating
- Will you get the same results if you test it the same way for a second try?

### Checking for Understanding:
- Students predictions: stand if you think it will sink… stand if you think it will float
- Students parrot back the instructions

### Guided Practice: “WE DO”
- Test out watermelon together

### Collaborative (“YOU DO TOGETHER”) and/or Independent Practice (“YOU DO”)
- Students work with table groups to measure the mass of fruit and test for floating or sinking
- Students record data on chart
- As a class, discuss results
- Talk through written response, write together as a class

### Closure
- Elicit student input and feedback
- Connections to future learning
- Explain where you are as a class and where the class will be going next

### Assessment
- Written response: Amy wants to know if her cherries will float in water. How can she find out?
  - Students draw a picture of how to test
  - Students write in complete sentences of a plan of how to test

### Reflection: for every lesson - questions to ask yourself after every lesson
- Refer to your objective(s)/target(s): how do you know that the objective(s)/target(s) was met? What is your evidence?
- Using your assessment data how will you change the lesson or instruction for the next time?
- How well did the students perform/respond? Were all my students engaged?
- How was my timing?
- How many students struggled? What will I do to help the student(s) who struggled?
- What will I do to extend the learning for those students who met target?
- What did everyone know? What did no one know? Were there any surprises?
- What will you do next?
Amy wants to know if her cherries will float in water. How can she find out?