Science Unit Lesson 2

A. Information Components

Lesson Title: The Conservation of matter

Grade Level: 5th

State Core Standards:

Standard 1

Students will understand that chemical and physical changes occur in matter.

Objective 1

a. Compare the total weight of an object to the weight of its individual parts after being disassembled.
b. Compare the weight of a specified quantity of matter before and after it undergoes melting or freezing.

Objective 2

c. Evaluate evidence that indicates a physical change has occurred.

Specific Lesson Objective:

What happens to the weight of matter when it is broken?
Matter cannot be created nor destroyed by ordinary means.

Vocabulary Focus:
Matter
The Law of conservation of matter
Weight
Mass

Materials:
Bill Nye Handout
The sum of its parts handout
Science Reading handout
Scale (1 for each group)
Connector cubes (25 per group)
Oranges (one for each student)

Lesson Time:

B. Instructional Procedures.

Engage and Launch: 25 minutes

To get the kids engaged and to give them the proper info for the experiment, I'm going to start them off by watching a Bill Nye video on the phases of Matter. They will have a worksheet that they need to fill out during the movie. After the movie I will go over the questions as a class and help them fill out any answers they missed. I will also give extra information if they don't understand what is going on in the video.

Teacher Role	Asks questions; Assesses prior knowledge; Provides information needed for Explore phase
Student Role	Gains interest; Calls up prior knowledge; Develops a need to know

Explore: 20 minutes

1 Next I will pass out scales and cubes to each table and have them work on the sum of its parts experiment. I will give them time to work on it and wall around to give formative assessments on their responses and help answer questions. Once every group is finish I will ask questions to see what happened in their experiments.

1. What does one cube weigh?
2. Does it matter if you don't cancel out the weight of the container
3. Is there a way to figure out the weight of any given number of cubes without weighing all of them?

Teacher Role	Makes open suggestions; Questions and probes; Provides feedback; Assesses understanding and processes
Student Role	Explores resources and materials; Hypothesizes and predicts; Records observations and ideas;

Elaborate and extend: 5 mins

1. I will then pass out oranges and ask them if this will be the same as the cubes?
2. The students will then peel the orange and see if the orange weighs the same before and after.
3. Some students will get the same weight others will be different and I'll as why they think that is? Where did the mass go? (Because of juice and oil in the peel)

Teacher Role	Asks questions; Poses new problems and issues;
Student Role	Applies new knowledge by performing related tasks; Asks questions;

Explain and summarize: 15 minutes

1. Next I will bring up the science packet up on the board and go through it with them. I will go through the information with them highlighting the key concepts. As we go through the information there are a few questions I will have the kids stop and think and then answer on their own packets and then ask these questions as a class and get their input. I will continue until page 2 after they finish and have gone over the "Think Like a Scientist" questions.

Teacher Role	Asks for clarification and evidence from students; Enhances or clarifies student explanations; uses students' experiences as a basis for explaining new concepts; provides new vocabulary; evaluates student explanations.
Student Role	Clarifies understandings discovered; Shares understandings for feedback; Forms generalizations; Seeks new explanations

Evaluate:

Formative: I will have formative assessments from my open-ended questions during the lab and assignments. I will also have their answers in their science packet and experiment handouts.

Summative: There is an end of unit test the kids will take as well as several review tests to see where the students are at and what needs to be retaught.

Teacher Role	Observe and assess students; Asks open-ended questions;
Student Role	Demonstrate an understanding of a skill or concepts; Evaluates his/her own progress and knowledge; Answers open-ended questions by using observations, evidence, and previously accepted explanations

Adaptations for Special Needs:

Abram and Charlie constantly need refocusing so that they can get the information they need. They are also paired in groups with friends who will help keep them on task in activities.

Rayanna and Leila sometimes need a quiet space to focus on her work. She is allowed to go to the conference room when we are working on homework.

Hunter constantly talks with friends and gets distracted from doing his work. If this happens have him go to the back table.