

THE STANDARD

Conservation of Mass

Measure and graph quantities to provide evidence that regardless of the type of change that occurs when heating, cooling, or mixing substances, the total weight of matter is conserved.

DCI

DISCIPLINARY
CORE IDEA

PS1.A · Structure and Properties of Matter

"The amount (weight) of matter is conserved when it changes form, even in transitions in which it seems to vanish."

Here is the whole idea: when you heat, cool, or mix stuff, the weight never changes. Melt an ice cube in a sealed bag and the bag weighs the same. The matter is still all there, just in a new form. **5th graders prove this by weighing before and after.**

SEP

SCIENCE &
ENGINEERING
PRACTICE

Using Mathematics and Computational Thinking

"Measure and graph quantities such as weight to address scientific and engineering questions and problems."

5th graders aren't told the answer. They put a container on a balance, read the weight, write it down, make a change, then weigh again. They graph the before and after as two bars. **When the bars are the same height, their own data answers the question for them.**

CCC

CROSSCUTTING
CONCEPT

Scale, Proportion, and Quantity

"Standard units are used to measure and describe physical quantities such as weight, time, temperature, and volume."

Here is the idea 5th graders carry out the door: to prove weight stayed the same, you need a fair, standard unit like grams. "It feels about the same" is not evidence. "It weighed 52 grams before and 52 grams after" is. **Standard units let everyone compare the same way.**