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.

ANCHORING PHENOMENON

The Sealed Bag That Disappears but Weighs the Same

Drop an ice cube into a zip bag, seal it tight, and weigh the whole thing. Set it on the counter and watch the cube vanish into a puddle of water. The ice is gone, but put the bag back on the balance and the weight has not changed one gram. 5th graders will want to know how.

> **DRIVING QUESTION**
> *"If the ice cube vanished, why does the bag weigh exactly the same as before?"*

INVESTIGATIVE 1

Where Did the Sugar Go?

Weigh a cup of water with a spoonful of sugar sitting next to it. Stir the sugar in until it completely disappears. The water looks clear again, like the sugar was never there. Weigh the cup again. Same number. Dissolving makes stuff seem to vanish, but the weight proves it is still in there.

> **DRIVING QUESTION**
> *"The sugar disappeared into the water, so why didn't the cup get any lighter?"*

INVESTIGATIVE 2

Two Liquids, One New Color

Weigh two small cups of liquid that change color or get cloudy when poured together. Pour them into one zip-seal bag (not a rigid container), press out the extra air, and seal it. Weigh the new mixture. It looks like brand-new stuff, but the weight is just the two starting weights added up, because nothing escaped the sealed bag.

> **DRIVING QUESTION**
> *"We made what looks like a new substance, so why does it weigh the same as the two we started with, as long as we keep it sealed so no gas escapes?"*