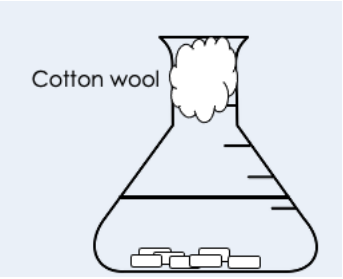
Conservation of Mass

Read the paragraph below.
Use the information provided to answer the question.

Johar decided to observe the reaction between lithium and water in a conical flask with some wool in the neck.



Before the reaction starts, he uses a balance to check the mass of the lithium and the water.

When the lithium is added to the water there is fizzing. After some time there is no more fizzing. Johar then weighed and found the mass of the lithium hydroxide solution. Looking at it he said, "Oh my! Mass just disappeared! The teacher and his law of conservation of mass are nonsense!!"

Using the data, picture of the equipment and the equation below, explain why Johar is wrong to doubt the teacher.

Lithium + Water → Lithium Hydroxide + Hydrogen

$$2Li_{(s)} + 2H_2O_{(l)} \rightarrow 2LiOH_{(aq)} + H_{2(g)}$$

Masses of substance (g)		
Lithium	**Water**	**Lithium hydroxide solution**
2g	**80g**	**81g**

<u>Steps for success</u>
For a great response, you should include answers to the following questions:

1. What is the law of conservation of mass?
2. What is the total mass of the reactants?
3. What is the mass of the lithium hydroxide solution?
4. What is missing here?
5. Why is the mass 81 on the scales? Use evidence from the symbol equation.

6. Why hasn't the wool stopped this?
7. What will the mass of the hydrogen be?
8. Stretch: What should you use instead if you want to accurately measure the mass of the products?
9. Super stretch: What is the problem with the term weigh?