Scrambled Box Tops

Imagine that you have three boxes, one containing two black marbles, one containing two white marbles, and the third, one black and one white marble. The boxes were labelled for their contents – BB, WW and BW – but someone has switched the labels so that every box is now incorrectly labelled. You are allowed to take one marble at a time out of any box, without looking inside, and by this process of sampling you determine the contents of all three boxes.

What is the smallest number of drawings needed to do this?