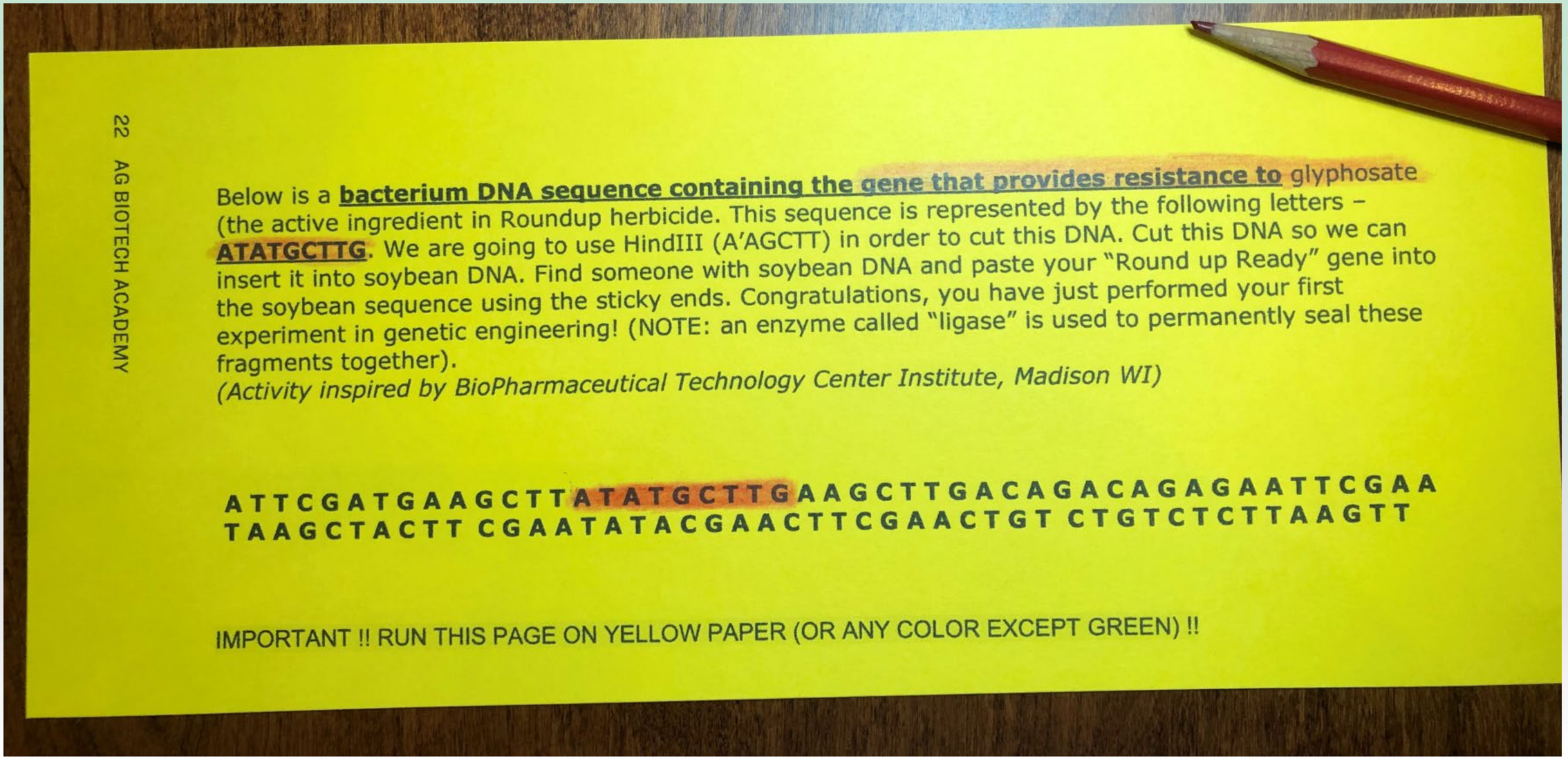
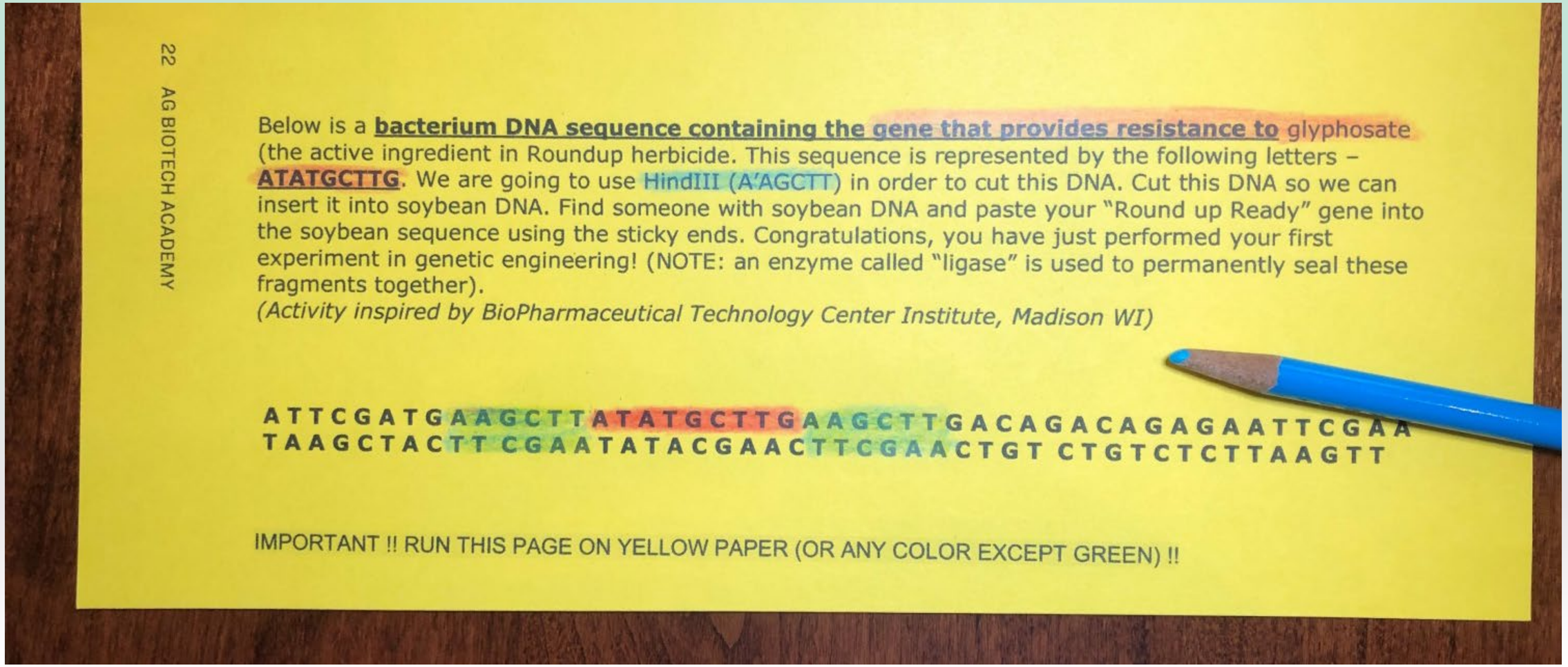
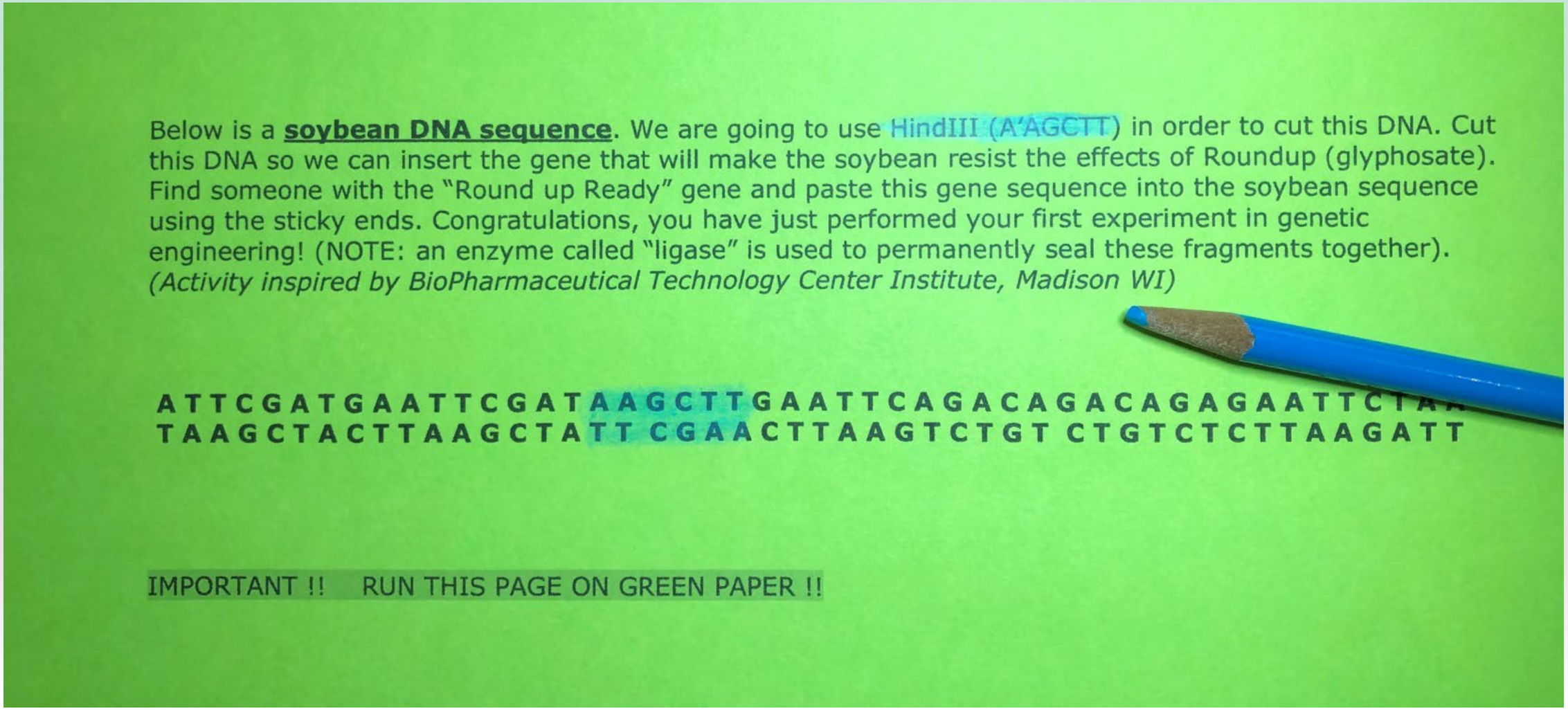
On the bacterium DNA, find the “gene of interest” and highlight in red.



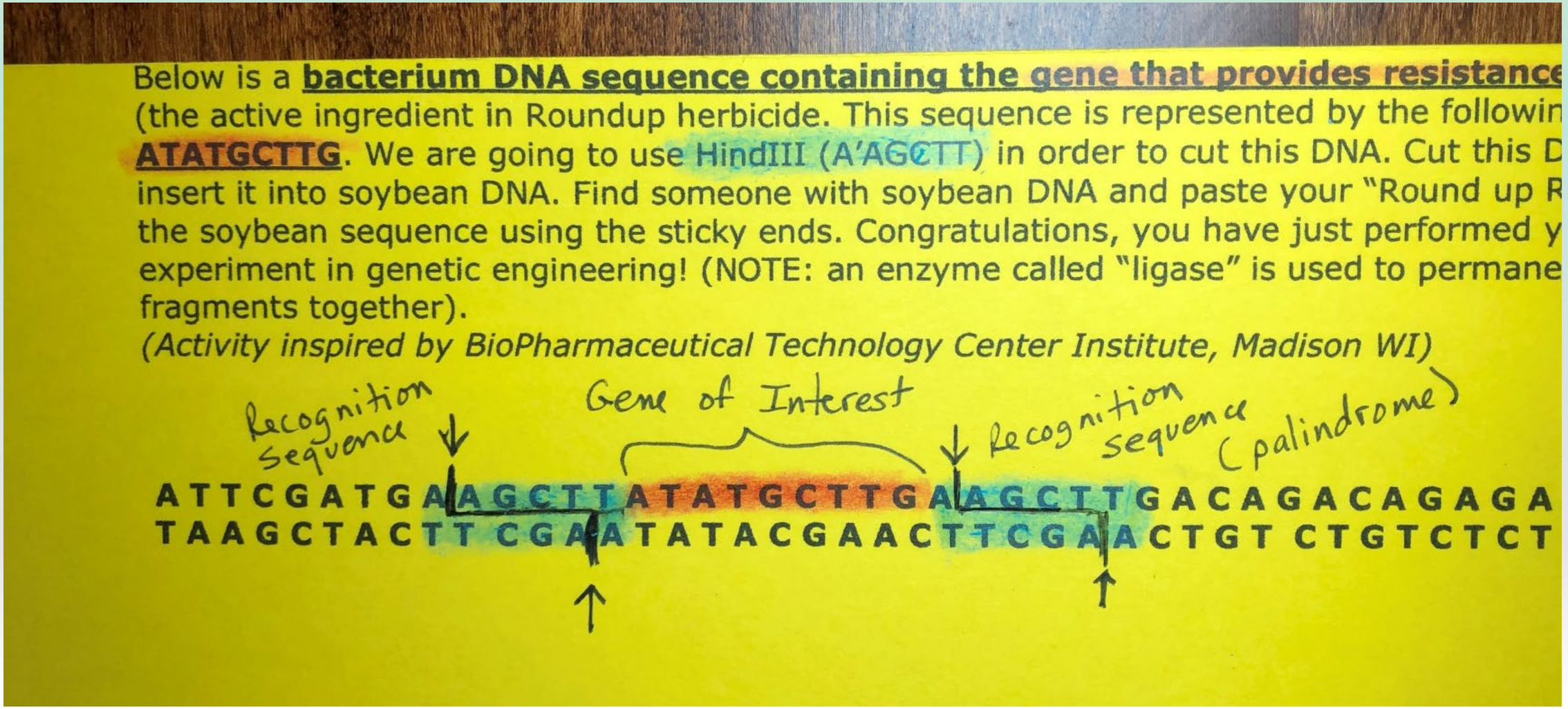
On the bacterium DNA, find the “recognition sequence” for the restriction enzyme. Highlight them. Why is it important that there are two sequences? What is important about the location of these two sequences?



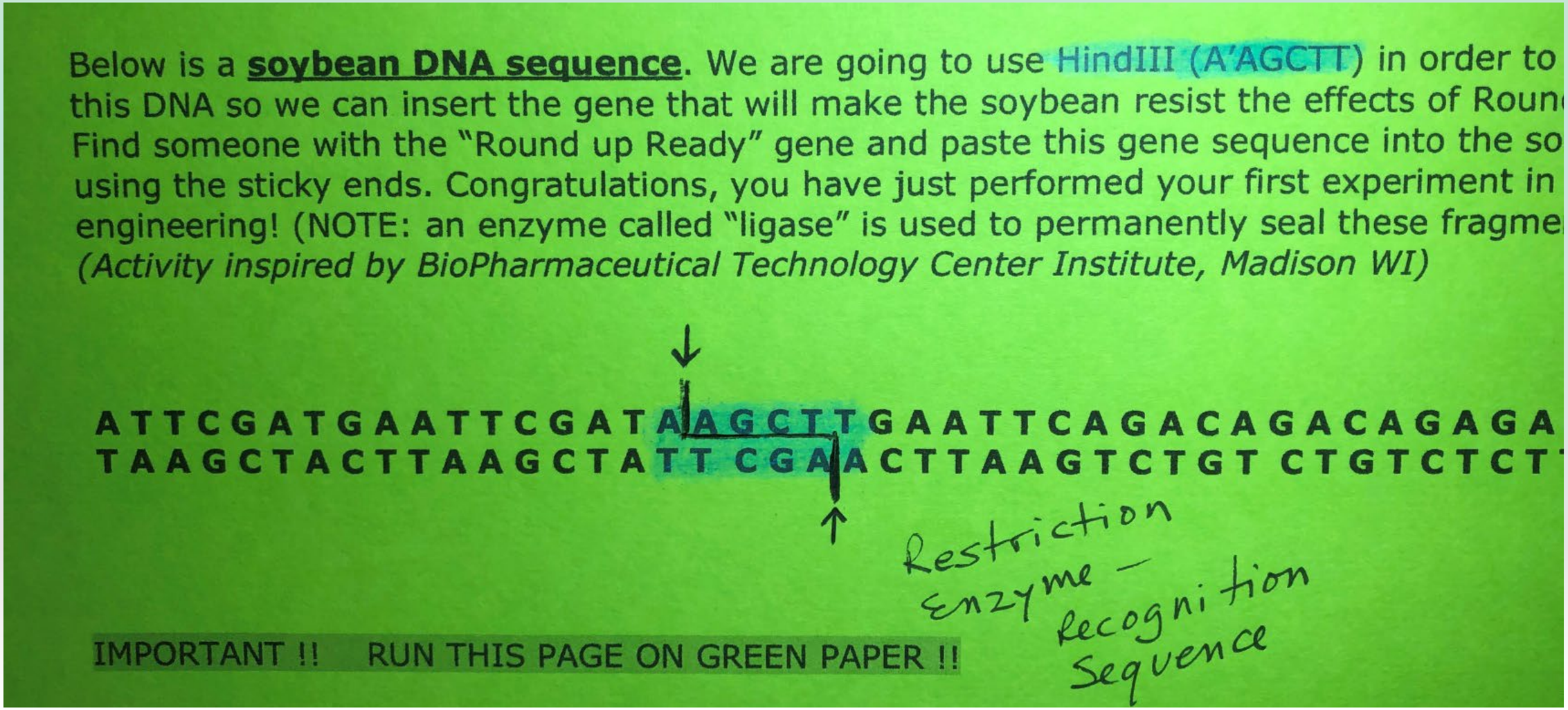
On the soybean DNA sequence, find the recognition sequence for the restriction enzyme. Why is it important to use the same restriction enzyme?



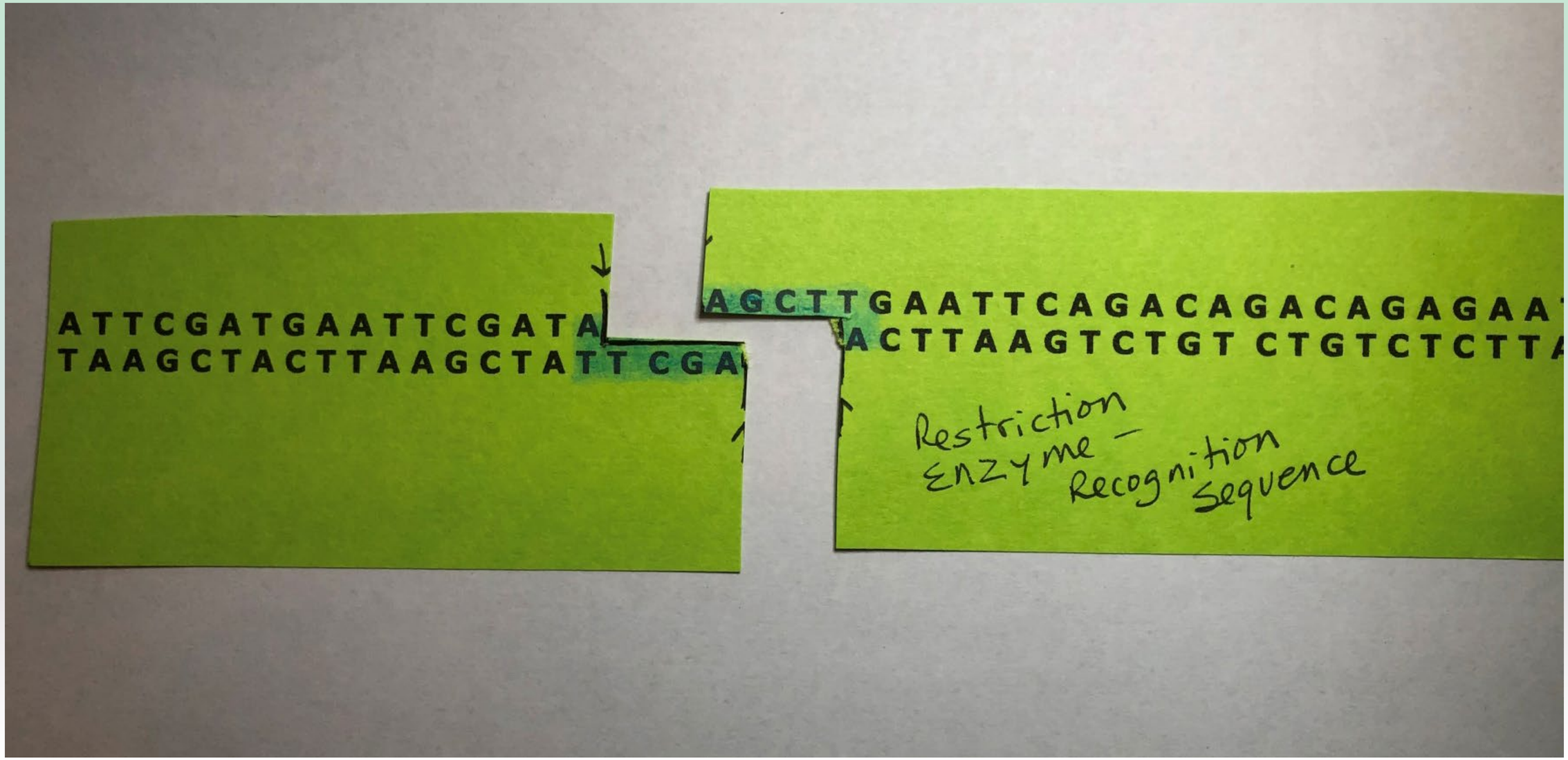
On the bacterium DNA, draw a line where the restriction enzyme will cut the bacterium DNA.



On the soybean DNA, draw a line where the restriction enzyme will cut the soybean DNA.



Cut the soybean DNA apart on the line you just drew.



Cut the bacterium DNA apart on the lines you just drew.

Lay the cut outs on a sheet of plain paper. Move the gene of interest from the bacterium and into the soybean DNA sequence.

Match “sticky ends” so that the gene of interest (in this case herbicide resistance) is now incorporated into the soybean’s genome. Tape or glue the cut outs down and complete labeling your project and writing about what this paper model represents. Use the terms on your instruction sheet.