

## Laboratory Report

Alcohols to be tested: \_\_\_\_\_

Carboxylic acids to be tested: \_\_\_\_\_

Test Tube	Alcohol	Carboxylic Acid	Observations of Ester and Odor
1			
2			
3			
4			

- Write a chemical equation for the formation of each ester in test tubes 1–4 and write the name of each ester product next to its structure.

2. Describe in general terms the odor or fragrance of the esters that were prepared by you and others in the class. Compare the odors of the esters to the odors of the starting materials.
3. Were any of the esters easily identified as a specific fragrance, e.g., apple or banana? In cases where a specific fragrance was detected, how does the odor compare to the natural fragrance? Give one reason for any difference between the synthetic fragrance and the natural fragrance.
4. Sodium bicarbonate solution was added to the product mixtures in step 12 to remove any unreacted acid. Write a balanced chemical equation for the reaction of acetic acid with sodium bicarbonate.
5. Ethyl propanoate and propyl acetate are isomers. Compare the molecular formulas and the structures of these compounds and write a definition of isomers based on this comparison.