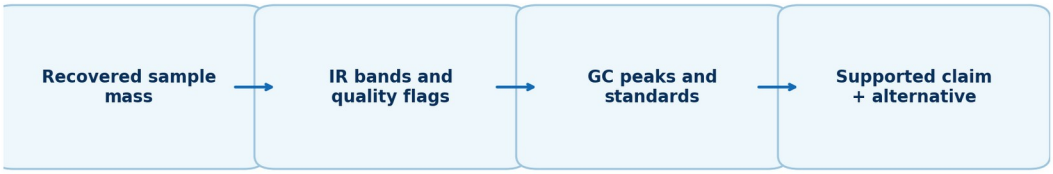
Using IR, GC and Mass as Evidence

Practice claim–evidence–reasoning with realistic contradictions.

STUDENT PRACTICE • SIMULATED DATA

Name: _____ Date: _____

Evidence integration • Do not discard conflicting observations



All signals and numbers in this worksheet are simulated for teaching. GC uncorrected area percentages are not validated mole or mass compositions.

1. Recovered liquid mass appears above the expected theoretical mass. IR retains broad O–H and GC contains several peaks. What should be investigated first?

2. After an alcohol oxidation, IR develops a strong C=O near 1715 cm^{-1} and broad O–H decreases. What is supported and what remains uncertain?

3. One GC peak matches a proposed product standard tR. What independent evidence would strengthen identification?

4. IR supports formation of an alkene but GC shows two major peaks. Give a cautious conclusion.

5. A GC trace gives a major peak area% of 83%. What can you say about the amount or purity of the major compound?

6. Write a two-sentence claim–evidence–limitation conclusion for a reaction with expected IR changes but unexplained GC peaks.