

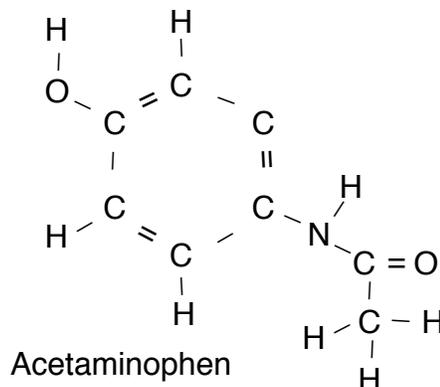
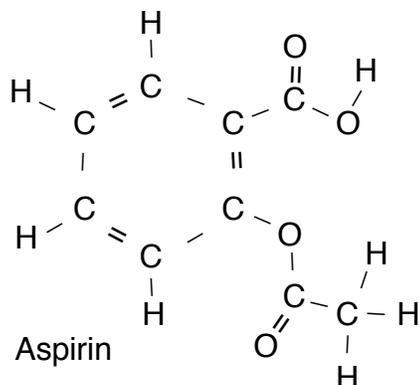
Got A Headache ?

Name _____

Hour _____ Date _____

Scientists sometimes use molecules found in nature as models for new molecules they design in the laboratory. For example, people have known for thousands of years that the bark of the white willow tree could take away headache pain. Chemists studied the molecules in white willow bark to find the one that eased headaches. They then learned to make the molecule, which we now call aspirin, in the laboratory.

Many people find that aspirin upsets their stomachs. Chemists worked to make a similar substance that would not upset the stomach, but would still cure a headache. Acetaminophen is what they came up with.



Study the diagrams of the aspirin and acetaminophen molecules.

1. What do the two molecules have in common?

Fill in the table to show how many of each type of atom make up one molecule of each pain reliever.

Molecule	Carbon Atoms	Hydrogen Atoms	Oxygen Atoms	Nitrogen Atoms
Aspirin				
Acetaminophen				

2. Based on the numbers in the table, how do the aspirin and acetaminophen molecules differ?

Aspirin and acetaminophen are very similar molecules. Yet they are different substances with significantly different effects on the human body.

3. What can you conclude about the structure of molecules and the properties of the substances they make up?
