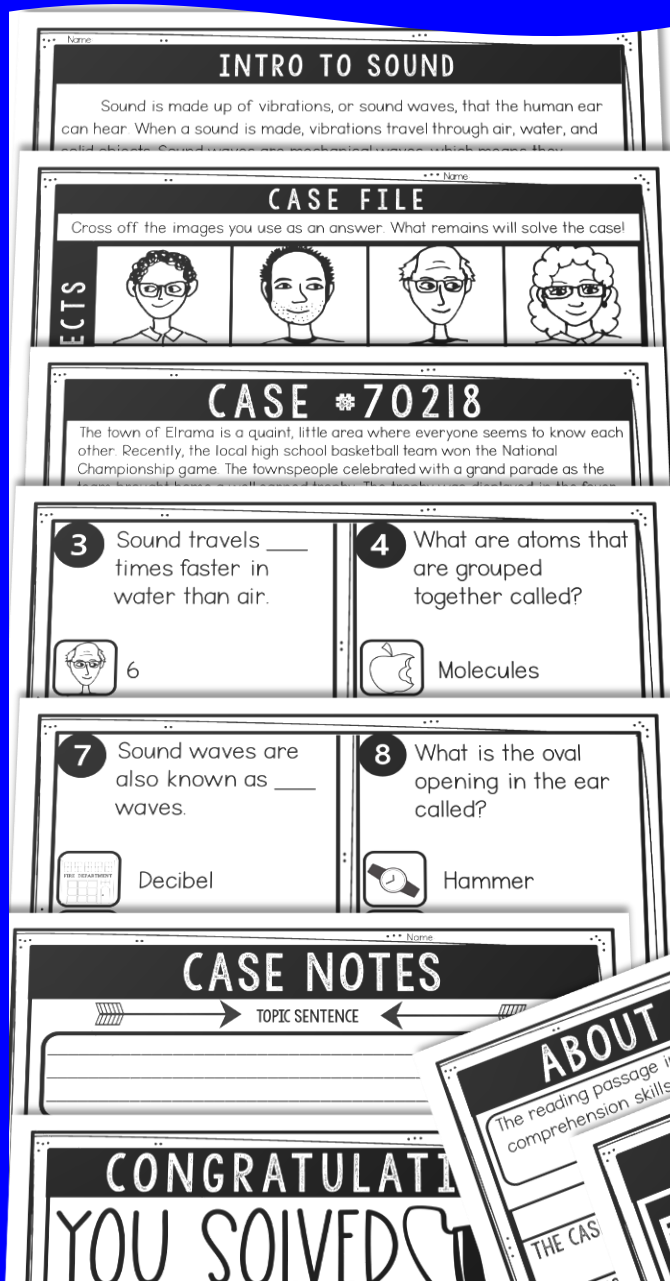
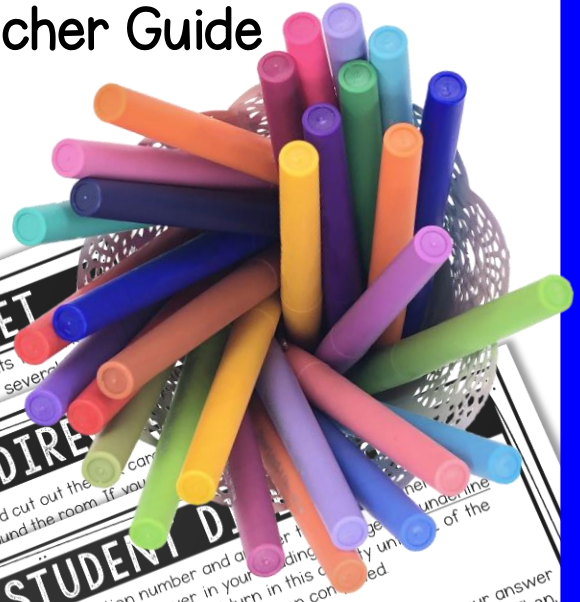


# WHAT'S INCLUDED?

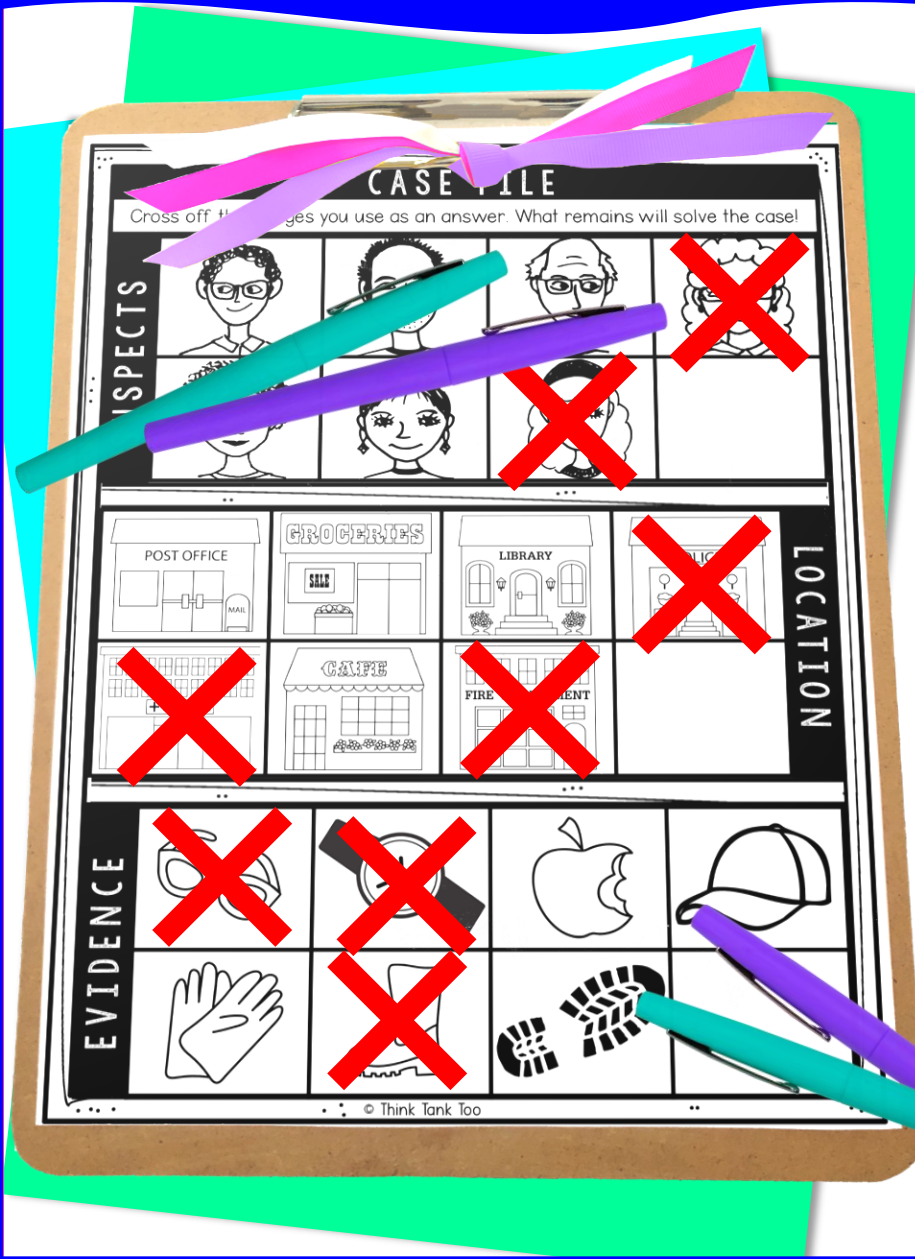


- ✓ Case File Dossier
- ✓ 16 Questions
- ✓ Graphic Organizer
- ✓ Reading Passage
- ✓ Completion Certificate
- ✓ Student Recording Sheet
- ✓ Student Directions
- ✓ Teacher Answer Key
- ✓ Teacher Guide

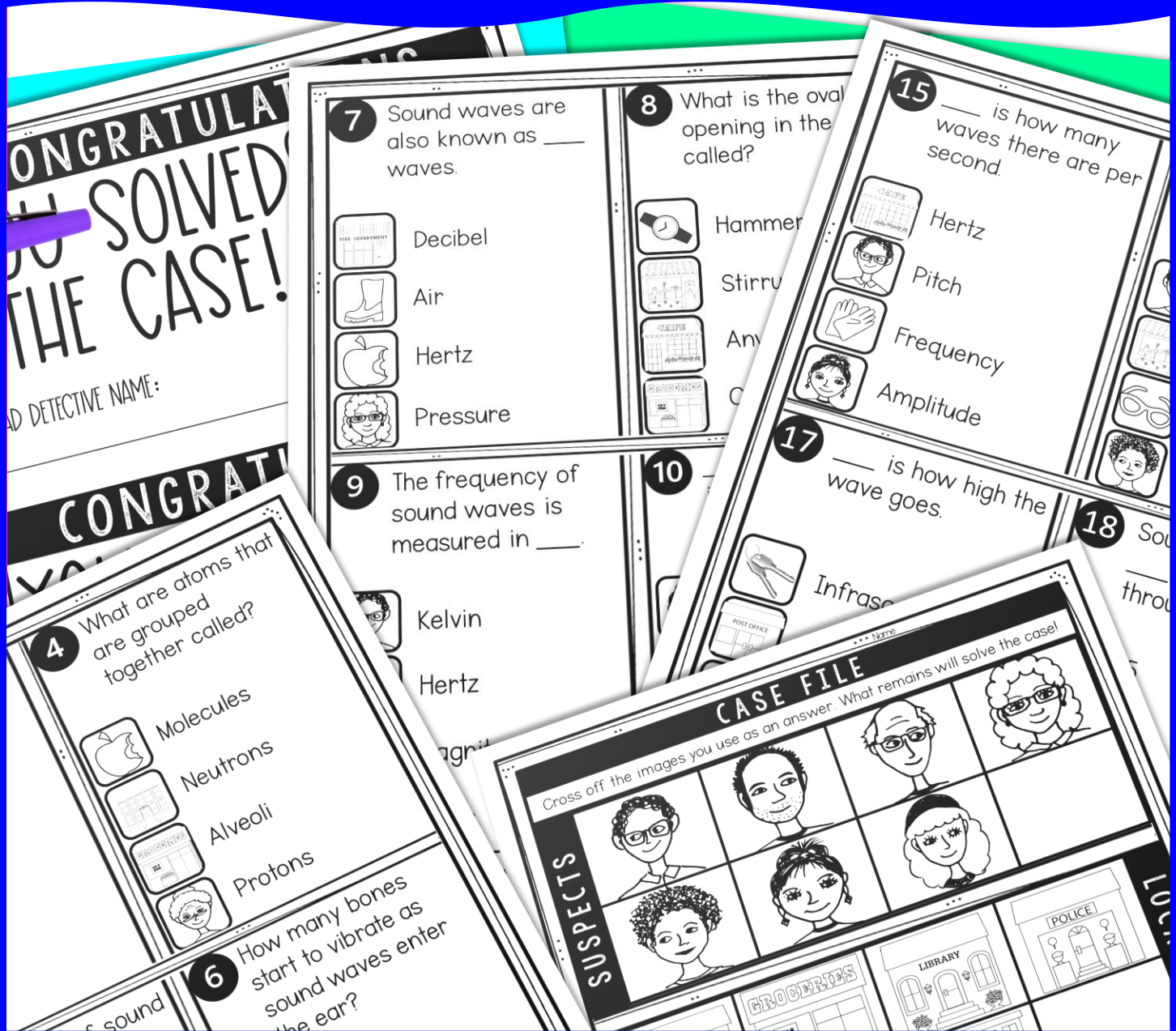


# CASE DOSSIER

As students answer each question, they will eliminate suspects, locations, and evidence.



# 18 QUESTIONS



# TEXT MARKING

After answering each question, students will find evidence in the text to support their answer.

## INTRO TO SOUND

Sound is made up of vibrations, or sound waves, that the human ear can hear. When a sound is made, vibrations travel through air, water, and solid objects. Sound waves are mechanical waves, which means they cannot travel through empty space. Therefore, we are able to hear sounds in outer space. The science of sound is known as acoustics.

Sound is a movement of matter (solid, liquid, or gas). For example, when a pencil is tapped, the tapping of a pencil. When the pencil hits the desk, air molecules (atoms that are grouped together) begin to vibrate and bounce off one another. The air molecules cause other molecules around them to vibrate as well. As they continue to vibrate and travel, the sound will also travel.

Properties of sound include pitch, speed, and loudness. The sound waves (also known as pressure waves) come in different shapes and sizes which determine the kind of sound that is heard. The wave can be tall and narrow or low and wide. The shape and size of each wave determines what kind of sound it will make. Decibels (dB) is the unit of intensity used to measure of the loudness of sounds. Lower decibels mean low and soft sounds and a high decibel is a very loud sound. Frequency is how many waves there are per second. Higher frequency means the vibrations are faster and the pitch of the note of the sound is higher. Pitch is the quality of a sound based on the frequency of the vibrations. Amplitude is how high the wave is. When the amplitude is higher, the sound is louder. Finally, wavelength describes the distance of the wave or the length of the sound. Sound travels at different speeds through different matter. The speed of sound depends on how fast sound moves through the matter. For example, sound travels quickly in water, slowly in air and it travels the fastest through solids. This is because in solids, the molecules are closer together, and in liquids, the molecules are farther apart.

