

Name \_\_\_\_\_

## Speed of Sound: A Sonic Adventure through Different Materials

### Open-Ended Response Questions

1. Imagine you are designing a new type of musical instrument. Explain how the choice of materials for the instrument could affect the speed and quality of the sound it produces.
2. Investigate how temperature changes affect the speed of sound in a solid material like iron. Describe an experiment you could conduct to measure this effect and its potential applications.
3. Discuss the significance of understanding the speed of sound in water for marine scientists and the challenges they might face when conducting underwater research.
4. Explain how the speed of sound in different materials can impact the quality of audio transmission in technologies like sonar and ultrasound. Provide an example of each.

