

Doppler Football Worksheet

Discussion Questions

1. Describe the difference in the pitch of the buzzer when it is stationary compared to when the football is coming toward an observer.
2. How does the pitch of the buzzer sound when the ball is moving away from an observer compared to the pitch when stationary?
3. Does the pitch of the buzzer actually change when the ball is in motion? Explain the difference in pitch that was heard as the ball moved toward or away from the observer. *Option:* Draw a diagram to explain the observations.
4. If someone were able to run alongside the football at the same velocity as the ball, how would the pitch of the buzzer sound to that person?
5. A person is standing at a roadway intersection. A police car is approaching with its siren continually sounding at a single frequency. As the car nears the intersection, it slows down, briefly stops right in front of the observer, and continues on. What changes in pitch will the observer hear as the police car approaches, stops, and then passes?
6. What variables other than the direction toward or away from the observer might be tested? List three questions that could be investigated with the Doppler football.

