**Don’t Bump into Me! Post-Quiz Answer Key**

1. **List three real-world examples of tools, technologies or equipment that use the echolocation concept.**

***Radar systems*: airplane navigation, weather and storm monitoring, polar ice formation/melting measurement**

***Sonar systems*: ship navigation, fishing, underwater sea floor mapping for depth, navigation dangers and marine ecosystems**

***Ultrasound medical diagnostic equipment*: pregnancy, internal organs, tumors**

***Measuring distance and speed*: radar guns, radar, sonar**

1. **Provide an example “stimulus-sensor-coordinator-effector-response” framework for one of your real-world examples.**

***Example*: Radar on an airplane transmits sound waves into a region in the flight path > sound sensor in the radar system receives reflected sound waves > computer calculates the presence and location of rain, snow, clouds, storms and other planes > computer sends instructions by wires to display screen showing colored map of location of weather and obstacles > pilot adjusts flight path and/or elevation for safest route**

***Example*: Ultrasound medical device transmits sound waves into belly > ultrasound device receives bounced-back sound waves (sound sensor) > computer makes sense of the sound waves > sends instructions to monitor to form a picture of fetus inside belly > mom learns of baby’s health and if it is a boy or girl**

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*Images sources*: NASA <http://virtualskies.arc.nasa.gov/communication/8.html> and MedlinePlus, U.S. National Library of Medicine, National Institutes of Health <http://www.nlm.nih.gov/medlineplus/ency/imagepages/1110.htm>