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STEM Sims

Lesson 4: Practice Makes Perfect

Ship tracking is not only an auditory form of detection, sometimes visual aids are needed. On dark foggy nights, sailors will be able to identify ships just by comparing its acoustic signature to acoustic signatures that have already been recorded. You will be identifying unknown ships only through its auditory tracking without looking at the ship itself. The database you created from Lessons 1-3 will aid in the identification of the type of ship. It's time to set sail Captain.

Doing the Science

- 1. Start the Ship Tracking Simulation by clicking on the "Sim" tab.
- 2. Click on the orange "Practice" button.
- 3. Click on "Start" on the left side of the simulation.
- 4. Targets will float across the screen. When you see a target floating by, hover your cursor over the target to see its acoustic signatures.
- 5. Click on the target to stop its movements and freeze its acoustic signature.
- 6. Note the Frequency and Amplitude data for each ship.
- 7. Compare the target's acoustic signature, frequency and amplitude with the database you created in Lessons 1-3.
- 8. Once you have found a match, click on the up or down arrows underneath "Ship Types" to scroll through the list to find the name of the ship.
- 9. Once the name of the ship is next to the arrow, click on "Select" to check your answer. If the answer is correct, the ship will appear on the screen.
- 10. Click on "Next" to continue onto the next ship.
- 11. Repeat steps 3 9 for five more ships. You may practice more if you'd like.

Do You Understand?

1. Was it difficult to identify the unknown ship? Were there a lot of possible ship options?

2. How precise does the acoustic tracking have to be for a match?