Convection

It's a sweltering day. You are sitting quietly at the shore by the ocean. A cool breeze wafts off the water towards you. How do these fortunate sea breezes form? During the day, air over the land heats up faster than air over the water. Cooler air from over the water rushes in displacing the warmer air, forming a breeze. When the cooler air arrives over the land, it heats up and rises allowing the more dense cooler air from the sea to rush in, and so the cycle continues. The transfer of thermal energy by the movement of the particles from one part of a material to another, as in a sea breeze, is called **convection**. Convection occurs in fluids (liquids or gases), because the particles can move from place to place. Since cooler fluids are more dense they sink and displace less dense warmer fluids. This causes the fluids to circulate.

Air molecules discuss convection

Answer the questions below based on your reading above and your knowledge of physics.

1. What is convection? _____

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2. What causes a sea breeze? _____

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3. Is there a sea breeze at night? Explain. _____

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4. How does a radiator at one end of a room heat the entire room? _____

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5. Why is it likely that you will feel a breeze near your window on a cold, wintery day? _____

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6. Why doesn't convection occur in solids? _____

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