\*\*Scope # 4 Ocean’s Influence on Weather and Climate \*\*

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| MS-ESS2.D.3 | Standard | Weather and Climate: The ocean exerts a major influence on weather and climate by absorbing energy from the sun, releasing it over time, and globally redistributing it through ocean currents. |

Focus Question: How do our oceans influence weather and climate?

What you will learn: Students are expected to collect data to provide evidence how motions and complex interactions of air masses result in changes in weather conditions.

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| ACTIVITY | PRE/POST DISCUSSION QUESTIONS | IMPORTANT FACTS |
| Illuminate | 1. What does this diagram show? 2. What characteristics of our oceans relate to weather patterns? 3. How does the geography of the Earth’s land masses and underwater features affect movements in the ocean? |  |
| Hook | Glass of Lemonade Picture and Questions |  |
| Activity 1  Scientific Investigation  Pre- discussion questions | Pre-Activity Discussion  1. How do you think the ocean can influence the weather or climate of an area? 2. What do you think happens to warm air if it is suddenly cooled? |  |
| ACTIVITY |  | IMPORTANT FACTS |
| #1 Post-Activity Discussion | Post-Investigation Discussion  1. In terms of water temperature, explain why the Atlantic hurricane season lasts from June 1 until November 31. 2. Why do landmasses have greater temperature ranges from day to night than water? |  |
| Activity 2 :**Convection Currents**Pre-Activity Discussion | Pre-Activity Discussion  1. How does air move from Earth’s surface into the atmosphere and back? 2. What causes deep ocean currents? 3. What is convection? |  |
| #2 Post Activity Questions | Post-Activity Discussion  1. Where did the changes in deep ocean current temperatures take place? 2. What do the two types of currents have in common? 3. How is the thermal energy absorbed in the ocean along the equator distributed around the globe? |  |