



# What would you work on as an OCEAN SCIENTIST?

Build the "fortune teller" & find out!

1. Cut the square
2. Fold up the lower half, open up again
3. Fold the left half over to the right, open up again
4. Picture down, fold all four corners towards the middle
5. With the open side down, fold all four corners towards the middle
6. With the open side upwards, push the four corners together such that four pockets open up
7. Pick one outer drink, pick one of two inner ingredients, read under inner and explore your research topic!

## #KitchenOceanography

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<p>Twitter: @meermini</p> <p>I love cocktails!</p>	<p>The more tastes, the better!</p> <p>Cocktails have layers of different components, just like the ocean consists of layers of different temperatures and salinities, the <b>OCEAN STRATIFICATION</b>. As density contrasts increase with climate change, the exchange of heat, oxygen, CO<sub>2</sub> and nutrients between the layers is reduced.</p>	<p>Do you have Raisins? Grapes?</p> <p><b>RAISINS</b></p> <p>The raisins move when CO<sub>2</sub> bubbles attach to them, or burst. The <b>DENSITY OF SEA WATER</b> depends on temperature, salinity and pressure. As sea water gets warmer due to global warming, it starts expanding. This "thermosteric" sea level rise combines with that caused by the melting of polar ice caps.</p>	<p>For me, a soda!</p> <p><b>SPARKLING WATER</b></p> <p>Instagram: @fascinocean_kiel</p>
<p><b>ICE CUBES</b></p> <p>Something with ice cubes!</p> <p>Holding the ice cubes on a spoon over a hot drink, you can observe the <b>WATER CYCLE</b>! 97% of all water on Earth is salt water in the oceans. Most of the remaining water is located in glaciers, lakes, rivers; only a tiny fraction is in the atmosphere. But water vapor is the most important greenhouse gas.</p>	<p><b>BLUE-BERRIES!</b></p> <p>Blueberry juice changes color in contact with something acidic (sparkling water) or basic (e.g. dish soap). <b>OCEAN ACIDIFICATION</b> happens as the ocean takes up CO<sub>2</sub> from the atmosphere. Many small animals, the basis of the food chain, start having difficulties building shells.</p>	<p><b>COFFEE</b></p> <p>Give me some coffee!</p> <p>Substances diffuse faster in warm water than in cold water, because the molecules are moving a lot faster. <b>DIFFUSION!</b> You are observing coffee/milk ratio change with color. The layers away from a tea bag shows a different coffee/milk ratio form in your coffee, you are observing <b>DOUBLE-DIFFUSIVE MIXING!</b> Since heat diffuses much faster than dissolved substances, an initially stable stratification can become unstable, leading to convection and the formation of layers, influencing nutrient availability &amp; oceanic CO<sub>2</sub> drawdown.</p>	<p><b>MILK</b></p> <p>Yes, please, some milk on the side!</p> <p>Dripping the milk in the tea shows <b>TURBULENT MIXING!</b> When two water masses meet, they mix mostly due to shear instabilities at the interface, or due to turbulence, e.g. from waves. Mixing modifies the oceanic circulation.</p>
<p><b>WHIPPED CREAM</b></p> <p>With cream paddling!</p> <p>Whipped cream floats and moves around, just like <b>SEA ICE!</b> Sea ice keeps heat in the ocean by insulating it from the atmosphere, but it also keeps it cold by reflecting much more sunlight back into space. The sea ice cover is decreasing, and this has important consequences for climate.</p>	<p><b>COFFEE</b></p> <p>Give me some coffee!</p> <p>Substances diffuse faster in warm water than in cold water, because the molecules are moving a lot faster. <b>DIFFUSION!</b> You are observing coffee/milk ratio change with color. The layers away from a tea bag shows a different coffee/milk ratio form in your coffee, you are observing <b>DOUBLE-DIFFUSIVE MIXING!</b> Since heat diffuses much faster than dissolved substances, an initially stable stratification can become unstable, leading to convection and the formation of layers, influencing nutrient availability &amp; oceanic CO<sub>2</sub> drawdown.</p>	<p><b>COFFEE</b></p> <p>Give me some coffee!</p> <p>Substances diffuse faster in warm water than in cold water, because the molecules are moving a lot faster. <b>DIFFUSION!</b> You are observing coffee/milk ratio change with color. The layers away from a tea bag shows a different coffee/milk ratio form in your coffee, you are observing <b>DOUBLE-DIFFUSIVE MIXING!</b> Since heat diffuses much faster than dissolved substances, an initially stable stratification can become unstable, leading to convection and the formation of layers, influencing nutrient availability &amp; oceanic CO<sub>2</sub> drawdown.</p>	<p><b>COFFEE</b></p> <p>Give me some coffee!</p> <p>Substances diffuse faster in warm water than in cold water, because the molecules are moving a lot faster. <b>DIFFUSION!</b> You are observing coffee/milk ratio change with color. The layers away from a tea bag shows a different coffee/milk ratio form in your coffee, you are observing <b>DOUBLE-DIFFUSIVE MIXING!</b> Since heat diffuses much faster than dissolved substances, an initially stable stratification can become unstable, leading to convection and the formation of layers, influencing nutrient availability &amp; oceanic CO<sub>2</sub> drawdown.</p>
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