Slide	Notes
1	Workshop and Group Introduction Welcome! We are a group of ocean scientists working at USC and excited about marine science. We prepared these 4 activities to tell you more about the ocean and marine life. This is a partnership between USC and NeSci. [slides can be added here to introduce the workshop format and the scientists]. Finish by introducing Session 1: How does the ocean move?
2	The Ocean Here we introduce the idea of how big the ocean is.
3	A dynamic Ocean Here we introduce the idea that the ocean is dynamic - it is constantly moving.
4	The Conveyor Belt In fact, there is a global ocean circulation that connects all parts of the ocean transporting water and heat.
5	The Conveyor Belt: How? Let's ask what drives this powerful global circulation. To answer this question, we will perform some cool experiments. Students can now be split into smaller groups for discussion and to perform the experiments with their science mentors.
6	Experiment 1: freshwater versus saltwater Ask the students: have you ever tried to float in a river and in the ocean? Where do you think it would be easier to float? Answer: it is easier to float in the ocean. But why? Let's discover this with the experiment. Start the discussion and observe their perspectives. You can also choose other questions that might apply to this subject.
7-10	Experiment 1: step-by-step Here you will share your slides to guide the students while also performing the experiment with them (keep your camera on if on zoom). Make sure all students are together to move to the next step.
11	Experiment 1: discuss main findings By the end of the experiment ask them what they learned from this activity. Ask them to keep this discovery in mind! Before we discuss how this will affect ocean movement, we need to perform another experiment.
12	Experiment 2: cold versus warm waters

	Ask the students: what is the main difference between summer and winter? How do you think this will affect seawater? Answer: hot during summer, cold during winter therefore the temperature of the seawater will change across seasons. Start the discussion and observe their perspectives. You can also choose other questions that might apply to this subject.
13-16	Experiment 2: step-by-step Here you will share your slides to guide the students while also performing the experiment with them (keep your camera on if on zoom). Make sure all students are together to move to the next step.
17	Experiment 2: discuss main findings By the end of the experiment ask them what they learned from this activity. Ask them to remember what we found in Experiment 1. How can these discoveries help us to understand ocean movement? Let's check it out on the next slide!
18	Explaining the Conveyor Belt In the poles, seawater is cold and ice formation leads to more salty waters. Cold and salty waters are heavy.
19-20	Explaining the Conveyor Belt Cold and salty waters are dense and therefore will sink to the deep ocean. As the dense water sinks, it is replaced by less dense surface waters that are warmer and less salty.
21	Explaining the Conveyor Belt As a result of this movement, cold waters travel from the poles towards the tropics and warm waters from the tropics transport heat to the poles. That's why this circulation is so important to regulate the climate of the planet.
22	Other things that can affect ocean movement We learned that temperature and salt drive the deep global ocean movement. But other things can affect ocean movement more locally. For instance, we can think about how water can move along our coasts with Experiment 3.
23	Experiment 3: winds Ask the students: The ocean can be flat or very turbulent. What do you think is the major force that causes that? Answer: Winds! Start the discussion and observe their perspectives. You can also choose other questions that might apply to this subject.
24-27	Experiment 3: step-by-step

	Here you will share your slides to guide the students while also performing the experiment with them (keep your camera on if on zoom). Make sure all students are together to move to the next step.
28-29	**Experiment 3: discuss main findings** Winds will influence surface currents and can have an important role on causing coastal upwelling. Strong winds along the coasts of different regions in the planet can cause upwelling. Together with the Earth's rotation, these strong winds can push surface waters offshore, bringing cold and nutrient-rich waters from the depth to support a vibrant marine life in our coasts. And this phenomenon is observed on the California Coast!
30	**Summary** Group all students in the main room. You can now consider yourself a junior ocean scientist! We learned that salt and temperature drive the deep global ocean movement. Other things can also affect ocean movement, such as the winds, especially along coastlines. It is very important to understand ocean movement to understand marine life.
31	**Share your feelings with us!** Share a mentimeter link to get feedback from your students. Open for questions/comments.