Student Directions

Scientists are studying the rise of the oceans, but are they "level" to begin with?
Sea level: The phrase itself suggests our ocean and seas have a uniform height. But in fact, the surface of Earth’s ocean is not level at all. The average height of the ocean surface varies by several feet across the globe.

In this visualization, ocean surface height is indicated by color:

- Average surface height is shown in white
- Surface height that is 20 inches above average is shown in dark red
- Surface height that is 20 inches below average is shown in dark blue

Watch the animation and answer the following questions. Check with your instructor on how to submit your answers.

1. Create a mental model to estimate the height measurements used in this video. Twenty inches is roughly equal to what common object?
2. What locations have sea surface heights that are higher than average?
3. What locations have sea surface heights that are lower than average?
4. Identify oceans that have both ends of the extremes. What might cause this?
5. What processes cause changes in sea height?
6. As you review this video, what questions come to mind?

The Earth’s system exemplifies stability and change. Change and rates of change can be observed and quantified over very short or long periods of time and various spatial scales (e.g., from landscape level to global processes). Understanding stability and change in Earth processes contributes to a more complete understanding of the Earth system.
Teachers, these mini lessons/student activities are perfect "warm up" tasks that can be used as a hook, bellringer, exit slip, etc.

Teachers who are interested in receiving the answer key, please contact MND from your school email address at larc-mynasadata@mail.nasa.gov. We verify that requestors are teachers prior to sending access to the answer keys as we've had many students try to pass as teachers to gain access. To receive the keys please provide the following:

1. The link to the school/institution's teacher directory where you are employed so we can verify that you are a teacher
2. Ensure that the school email address is provided in your response as we are unable to send to personal email accounts