

# Ocean Acidification - Tic Tac Toe Choice Board

**Instructions:** Using the board below please choose two additional activities to complete. **ALL STUDENTS must complete box 5.**

**1 Watch** <https://youtu.be/qAkhuETyn5U>

After watching this YouTube video write a one paragraph summary of what ocean acidification means for the world's oceans. Do you believe that a drop of 30% in pH in the past 200 years is alarming? Why or why not? Give specific evidence as to why this drop in pH might be a real issue for species living in the oceans.

**2 Write** a screenplay or conversation between three scientists who are studying ocean acidification. Be sure to include facts and information from online sources that you research. You may choose the setting and situation, but it must include 3 scientists and details. Your screenplay or conversation should take at least 5 minutes to perform.

**3 Create** a model of a species that will be impacted by ocean acidification. This model can be 3D or 2D and should be in color. Some ideas for your model would be a fish species impacted, a coral species impacted or a representation of a taxa group that will be impacted by increased ocean acidification. Detail should be paid to make the model lifelike and realistic in whichever media you choose.

**4 Watch** <https://www.youtube.com/watch?v=8m1X26Auw6Q> and write 3 paragraphs about the video. In the video many scientific graphs are Used. In your own words explain what at least one of the graphs is showing; what the X and Y axis points on the graph are; and how this information relates to evidence of ocean acidification. Your response should be in complete sentences and follow proper grammar rules.

**5 Watch** <https://youtu.be/GL7qJYKzcsk> and while watching this video be sure to take notes. After watching the video please create a quiz along with an answer key to your quiz on a separate sheet of paper. This might require you to watch the video twice or in smaller segments. Your quiz should have a combination of true/false, multiple choice and short answer questions. You will be having a classmate take your quiz (and you will take theirs) so do not make it "impossible" and also not too "easy".

**6 Research** ocean acidification using the material found at <https://ocean.si.edu/ocean-life/invertebrates/ocean-acidification> Pick one section on this site to read. After reading the section write a two paragraph summary of the section. Be sure to include (a) what the section was about, (b) the issues or solutions regarding OA that were presented and (c) any other information that you feel is valuable.

**7 Develop** a plan on how the general public could be made aware of ocean acidification and its impacts on the marine environment. In this plan, you should discuss the target audience, how you will craft your message, how you will distribute your message and some basic topics/facts that should be included in your message. You can combine this box with number 9 and create a product from this outreach campaign such as a t-shirt, website landing page, Facebook or Instagram post or other creative means that you can think of.

**8 Draw** a diagram depicting ocean acidification using research from the Internet. Your diagram can be on impacts to species, the role of the ocean in carbon sequestering or the dramatic rise in CO<sub>2</sub> levels or drop in oceanic pH over a period of time.

**9 Choice:** Create a lesson building activity of your own! The only requirements are that you clear the project with your teacher, the project must be directly tied to ocean acidification and this project should take 30-45 minutes to complete.