Deep Dive Reading Collective:
The Blue Machine by Helen Czerski

Dates	Chapters
2/24	**Part 1: The Blue Machine** Introduction Chapter 1: The Nature of the Sea
3/8	Chapter 2: The Shape of Seawater Chapter 3: The Anatomy of the Ocean
3/24	**Part Two: Travelling the Blue Machine** Chapter 3: Messengers Chapter 4: Passengers
4/7	Chapter 6: Voyagers **Part Three: The Blue Machine and Us** Chapter 7: Future
	Wakelet of Shared Resources

WHOLE GROUP

In the chat: Throughout the introduction and first chapter, the author shares her connection to the ocean through various anecdotes. Think about one way that you feel connected to the ocean and share it in the chat.

Introductions:
- Name, city & state
- NOAA Ship you sailed on and general mission/location

BREAKOUT GROUPS

Group 1: Temperature and Salinity
The author states that ocean characteristics like temperature and salinity help oceanographers understand where water has been and what has happened to it recently.
- What are the most interesting and significant facts about ocean temperature and salinity?
- What is a thermocline and how does it affect ocean ecosystems?
- How does the ocean absorb and distribute the energy of the sun?
- What might students create to illustrate their understanding of these concepts?

Group 2: Storytelling
Discuss the author's use of storytelling and historical connections to explain scientific concepts (e.g., the polar ship Fram, Nansen's observations of ice floes, the Peruvian anchoveta, the Paris Gun, etc.).
- Which of the stories did you find the most engaging and/or helpful?
- How might these stories be used in the classroom to engage students?

- What are some narratives you have used to support teaching difficult scientific or other concepts?
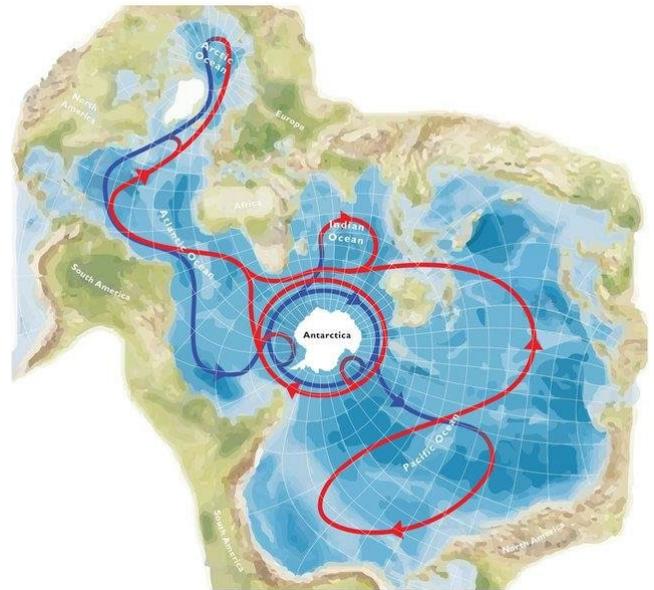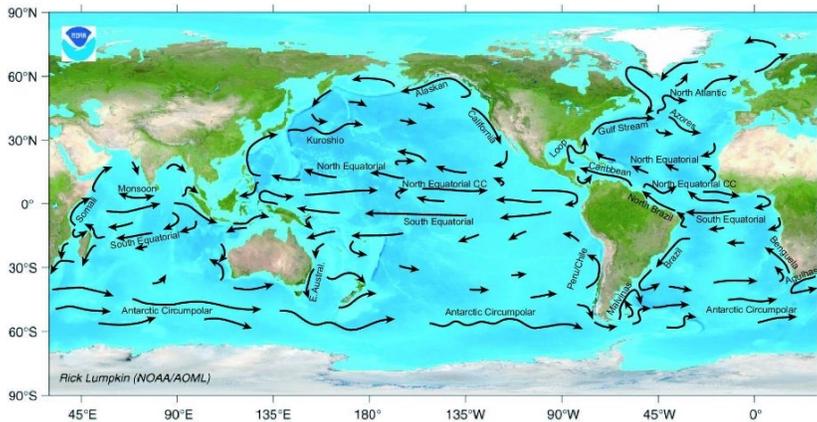
Group 3: Analogy

The main premise of the book is that the ocean is like an engine.
- How does the author build this analogy throughout the first part of the book?
- What are the "engine parts" discussed throughout chapter one?
- Is this an effective analogy?

Group 4: Circulation

The Coriolis Effect makes things (like airplanes or currents of air or water) traveling long distances around Earth appear to move at a curve as opposed to a straight line.
- Why is knowledge of the Coriolis Effect essential to understanding ocean circulation?
- Compare the two maps below. What are the advantages and/or disadvantages of either method of visualizing ocean circulation?

Left map source https://adp.noaa.gov/oceancurrentsmap/

Right map source https://www.researchgate.net/figure/The-globe-viewed-on-a-Spilhaus-projection-in-contrast-to-conventional-projections-this_fig4_339500454