Student name: _____ **Date:** _____

Grade: _____ **Section:** ____ **Value: 10%** **Score:** ____

Teacher: Miss. Faviola Jordan

Introduction: Please read the following article and then proceed to the exercises below.

The Arctic Ocean

The Arctic Ocean is Earth's northernmost body of water. It encircles the Arctic, and flows beneath it. Most of the Arctic Ocean is covered by ice throughout the year although that is starting to change as temperatures climb. Pale and stark on the surface, the Arctic Ocean is home to a stunning array of life. Though it's the world's smallest ocean spanning 6.1 million square miles the Arctic is now receiving unprecedented international attention. Scientists are racing to understand how warming temperatures will alter Arctic Ocean waters and by extension the rest of the climate and world leaders are racing to control newly opening waters. The Arctic Ocean is warming faster than anywhere else on Earth and feeling the onslaught of climate change.

Who lives there?

The U.S., Canada, Greenland, Iceland, Norway, and Russia all have territories that reach into the Arctic Ocean. About four million people live in the Arctic region, many of them indigenous groups that have thrived there for millennia. To survive in the harsh climate, many of the region's people rely on the ocean's bounty to sustain their livelihoods. This includes fishing, sealing, whaling, and other activities. The Arctic's otherworldly landscapes are also increasingly drawing tourists to the region. As once impenetrable sea

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ice becomes less stable, Northern Hemisphere countries have begun to take a greater interest in the Arctic as a path for shipping lanes, military presence, and commercial opportunities, particularly oil and gas exploration.

Ocean life

Much of the Arctic Ocean's complex life can only be seen by underwater explorers who dive through holes in thick sea ice. Much of the ocean here is dark, blocked from sunlight by ice cover, but photographers have dived with lights to expose underwater Arctic life. Scientists note that studying life in the Arctic Ocean can be difficult because the region is hard to access. Much is still unknown about the Arctic's marine food web. Plankton a group that consists of tiny organisms like algae and bacteria make up the base of the Arctic food chain. They convert carbon dioxide from the atmosphere into organic matter that in turn feeds everything from small fish to large bowhead whales. Growing inside the tunnels naturally carved into sea ice are plankton-eating zooplankton. Even farther below are bottom-dwelling organisms like sea anemones, corals, and sponges. Many animals that are often seen roaming the sea ice are also adapted for the water. Polar bears have large, paddle-like paws to propel them through the water, and they've been documented swimming for hours. Walruses have large tusks that they use to pull themselves out of the water, and they find much of their food by foraging along the sea floor. Whales and fish are often an important food source for indigenous people living in the Arctic, but commercial fishing has been banned in much of the Arctic Ocean. In 2018 the U.S. and nine other countries formally recognized that warming was creating new access to fishing stocks. In response, the 10 countries agreed to a moratorium that bars fishing until scientists are able to assess whether Arctic Ocean fisheries can be used sustainably.

A warming Arctic

The Arctic Ocean is experiencing some of the world's most drastic warming from climate change. In recent years, scientists have measured dwindling ice cover as record high temperatures inch up and up. One 2016 study predicted that ships would be able to sail through open water to the North Pole by 2040. The loss of sea ice will affect more than just the Arctic, scientists warn; it could change weather patterns around the world. Some have even predicted it could lead to colder, more extreme winters. A jet stream called the polar vortex encircles the Arctic, propelled forward by the difference between cold temperatures to the north and warm temperatures to the south. As the Arctic warms, scientists say the polar vortex will become more unstable and likely to send Arctic air south. In 2018, the Arctic Ocean experienced its second-worst sea ice decline on record. Parts of Greenland were exposed to open ocean for the first time in millennia. Scientists predict that warming waters could hurt wildlife. Terrestrial animals like polar bears rely on sea ice to traverse the landscape in search of food and to hunt, particularly seals. Warming will likely impact zooplankton life cycles, and thus the myriad animals that prey on them.

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Exercise 1. Find and circle the following words in this passage. Then look up the definitions of each word in a dictionary and put them in the box below.

inch landscape zooplankton vortex dwindling ships patterns propelled seals wildlife

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Words	Definitions
Inch	
Landscape	
Zooplankton	
Vortex	
Dwindling	

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Ships	
Patterns	
Propelled	
Seals	
Wildlife	

Exercise 2. Complete the following sentences by filling in the blank line with the answer that you consider correct.

1. Much of the Arctic Ocean's complex life_____ by underwater explorers.
2. Scientists note that studying life in the Arctic Ocean can be_____ because the region is hard to access.
3. About four million people live in_____.
4. Though it's the world's smallest ocean spanning_____ square.
5. The Arctic Ocean is_____ body of water.
6. Most of the Arctic Ocean is_____ by ice.

Exercise 3. Write a small paragraph of 4 to 6 lines describing what most caught your attention about the reading.

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