

Educational Toolkit: The polluted Arctic

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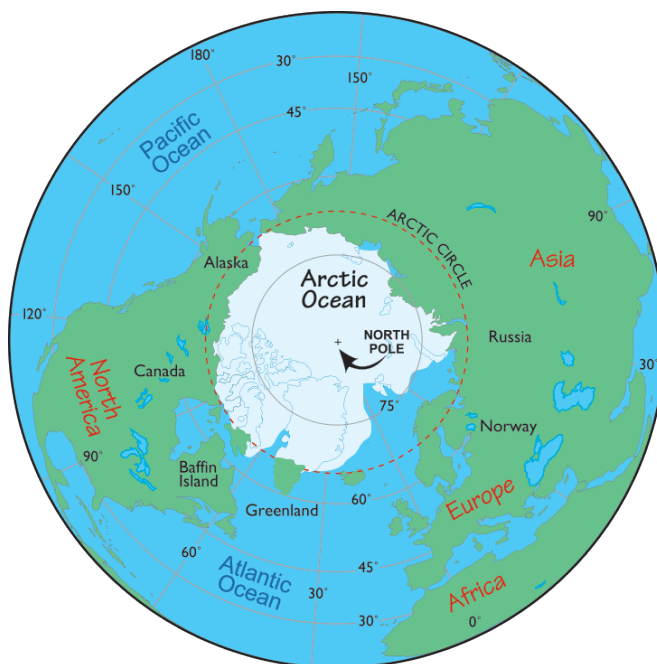
Worksheet–student version

1. Name 3 indigenous people groups that live in the Arctic. Then mark on the map, where they live.

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2. Look at the ‘Trends in Polar Bear Subpopulations’ map below. In 5-10 sentences describe current situation of polar bears in the Arctic. You can also use the data from the WWF website:

<https://www.arcticwwf.org/wildlife/polar-bear/polar-bear-population/>.

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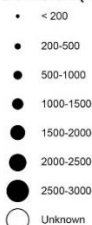
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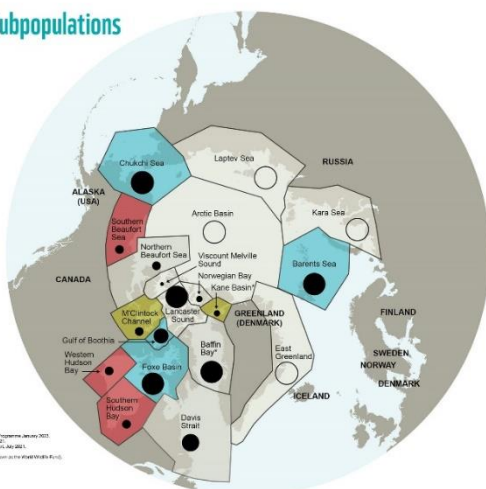
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Trends in Polar Bear Subpopulations

SUBPOPULATION SIZE (Number of bears)



POPULATION TREND (2021)



3. What is an 'Arctic amplification'? Choose the correct answer:

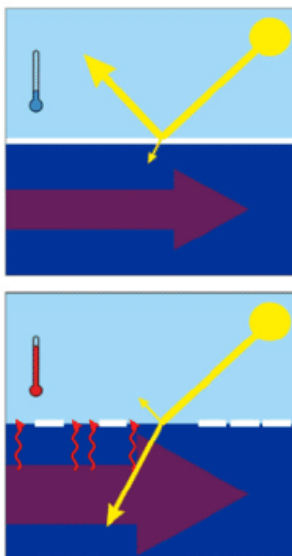
- ☐ The Arctic is warming twice to three times as fast as the rest of the planet due to sea ice loss.
- ☐ Polar regions warming twice to three times as fast as the rest of the planet due to sea ice loss.
- ☐ The Arctic is cooling twice to three times as fast as the rest of the planet due to sea ice loss.

ADVANCED

Want to learn more about Arctic amplification? Do the online exercise:

<https://view.genial.ly/63a57c9e12e4fc0018b6f836/interactive-content-arctic-amplification>

4. What phenomenon is showed on the graphic below? Write the name and the definition:



Definition:

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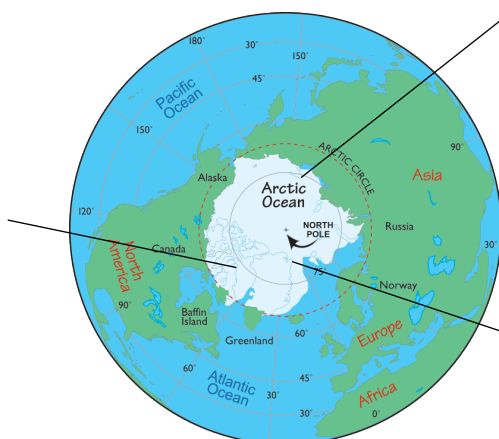
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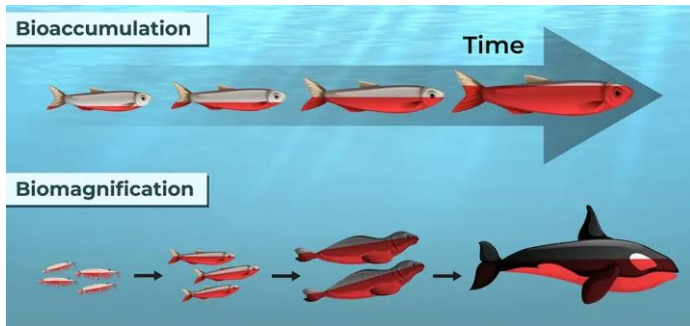
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5. Name 3 sources of pollution in the Arctic.



6. Look at the graphic below and revise what 'bioaccumulation' and 'biomagnification' mean. Explain what it means that pollutants in the Arctic are 'bioaccumulative'.



Answer:

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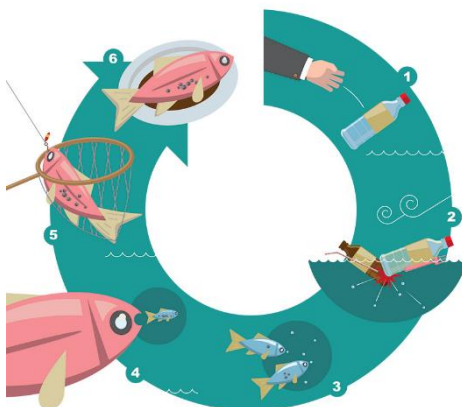
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7. Write some examples of threats to the Arctic environment (not all of them were mentioned in the presentation). Some ideas have been already added.

POPs			overfishing
		methane	
	mercury contamination		

8. What kind of pollution is presented on the given graphic?

..... pollution

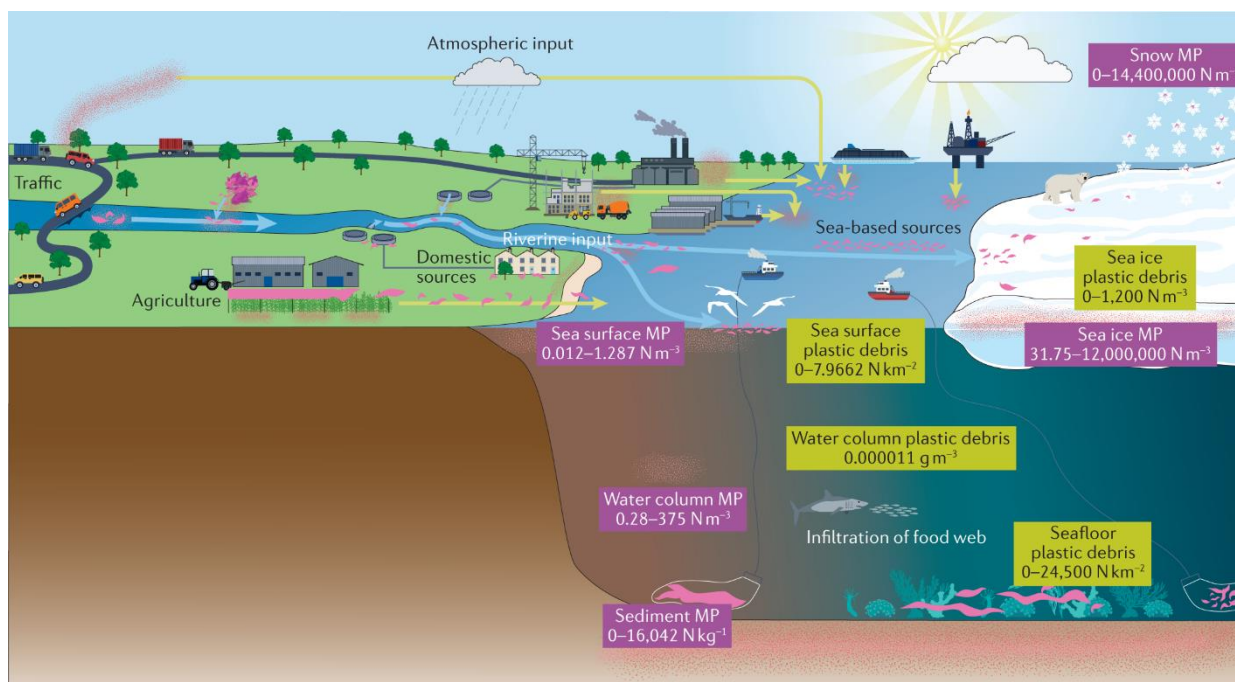


ADVANCED

Want to learn more? Watch the video:

https://youtu.be/_6xINyWPpB8?feature=shared

9. Do the math. Where we can observe the biggest amount of microplastic?



Source: <https://www.nature.com/articles/s43017-022-00279-8/figures/1>

Calculate average values:

- Average sea surface microplastic value:
- Average water column microplastic value:
- Average snow microplastic value:
- Average sea ice plastic debris value:
- Average sea ice microplastic value:

Unit: N/m^3 = pieces per cubic meter (according to <https://litterbase.awi.de/litter> data the graphic is referring to)

Sort average values (A, B, C, E):

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Discuss the results with your teacher. Did anything surprise you? If so, why?