Buoy is that water green! Exploration Two

Name _____

Class Period _____

1. Open the story map using this URL: https://storymaps.arcgis.com/stories/5fccdbf3a18145c69c2b2eaf41d2f0c1

   - Spend a few minutes exploring the story map and become familiar with the content and beautiful photo and video assets.
   - Keep the driving question of our lesson in mind as you explore the story map. How do our local land use practices impact life in the Great Lakes?

2. What is another name for blue-green algae? _____
3. If blue-green algae are a natural component of our lakes, rivers and ponds why are they so harmful? _____

   _____

4. What are HABs? _____

   _____

   _____

5. Watch the video featuring Aaron Parker, Michigan Department of Environment, Great Lakes and Energy (EGLE)'s senior aquatic biologist. The video helps us with the identification of HABs.

   - View the images associated with the video.
   - Describe the "stick test" and how it is used. _____

     _____

     _____

6. Create a list of conditions that would enable a HAB to occur in a body of water. _____

   _____

   _____

   _____

7. How might nutrient levels in water increase? _____

   _____

   _____

8. How do invasive species make conditions more favorable for cyanobacteria? _____

   _____

   _____

9. Using the mapping tool developed by the Michigan Department of Health and Human Services (MDHHS), select three different sites on the map, each of a different color.

   - Record the location of each site with latitude and longitude.
   - Record the color displayed for each site.
   - Provide a description of what the site color indicates for each location.
   - Organize your response in a data table. Be sure to include headers for each column of your data table.
   - Provide your data table a title that includes the year 2023.

Site Number	Location	Color	Description

10. Using the same mapping tool you used for the prompt above, toggle the button to show map data for 2022. Create a second data table with three sites. Try to select sites that are the same or close to the same as the sites you selected for 2023.

    - Record the location of each site with latitude and longitude.
    - Record the color displayed for each site.
    - Provide a description of what the site color indicates for each location.
    - Organize your response in a data table. Be sure to include headers for each column of your data table.
    - Provide your data table a title that includes the year 2022

Site Number	Location	Color	Description

11. Analyze your data tables.

- Were any of your sites coded as RED in both years? _____

  _____
- If you answered yes to the above question, where is this location? _____

  _____
- Does this make you wonder how the land is being used in this location? _____

  _____
- Poke around on the 2023 and 2022 map to see if you can find RED locations for both years.

12. What symptoms might a human exhibit if they have been exposed to HAB toxins?_____

_____

_____

13. What effects do exposure to HAB toxins have on our pets and livestock?_____

_____

_____

14. How do HABs impact aquatic ecosystems? _____

_____

_____

_____

15. According to the story map, how can humans reduce nutrient levels in a water system?

_____

_____

_____

16. In the navigation pane at the top of the story map, locate the tab named " Prevention". In this section of the story map, scroll down to "Miscellaneous Prevention Steps". Four strategies for preventing the occurrence of harmful algal blooms are provided.

- Rewrite these strategies here, but write them in the order that you are most likely or most able to do.
- Provide one specific detail on how you might accomplish your first and second ranked strategy.
  - _____. Detail _____
  - _____. Detail _____
  - _____.
  - _____.

17. Take a look at the section of the story map that tells us what the state of Michigan is doing about HABs. Also look at the recommendations provided to YOU if you suspect a HAB has occurred in a local body of water. After thinking about these strategies and recommendations, design a public sign (much like the signs we see on our roads as we drive in traffic.) that provides a warning about a potential HAB in a local swimming or fishing lake.
18. Once again, bring to mind our driving question: “How do our local land use practices impact life in the Great Lakes?” If you were, again, tasked with explaining this phenomenon to a group of citizens in your community would there be anything else you might include in your talk?