

Name _____ Date _____

LAKES



A lake is a large body of water, usually freshwater, that is formed by glaciers, river drainage, surface water runoff, precipitation (rain and snow), or ground water seepage. Lakes form in depressions in the Earth's surface, and are among the most temporary of geological features, with few lakes being older than 10,000 years. The water level in lakes is held stable through ground water seepage, evaporation, and outflow streams.

Lakes change with the seasons. In the summer, there are three distinct water layers. The upper layer is called the *epilimnion*, and is the warmest. This is the layer in which most life is found in the summer. The middle layer is called the *metalimnion*, and the bottom, coolest layer, is called the *hypolimnion*. There is very little oxygen in the hypolimnion, so few animals are able to live there in the summer. During the spring and fall, there is an increased mixing of the layers, and oxygen and nutrients are distributed evenly. At this time, fish and other lake organisms are able to exist in all of the layers.

Lakes are important, as they provide many recreational activities, such as boating, fishing, and swimming, in the summer, and ice skating in the winter. They also provide a habitat for many fish, birds, and other animals. Lakes are especially important for migrating birds. However, lakes can become unhealthy for a number of reasons. Pollutants, such as nutrients, metals, and suspended solids, can enter the lake through farm or industrial runoff or sewage discharge. When this happens, many animals lose their homes, and lakes are no longer good for boating or swimming. Another threat to lakes is *introduced species*. These are animals that people put into lakes, on purpose or by accident, that disrupt the balance in lakes. Many introduced species eat native animals or change the habitat until native animals cannot live there. Lakes are special *ecosystems* that need certain things to remain healthy and productive. When lakes are healthy, they provide many benefits to humans and animals, but when lakes become unhealthy they are not useful for animals or people. It is important that lakes remain healthy, and people can do a lot to keep them that way. Using responsible ways to get rid of garbage helps to keep pollutants out of lakes, and responsible boating habits help to keep unwanted animals from entering the lake ecosystem. You can help as well! Don't throw garbage into a lake, and when you move a boat into a new lake, make sure that it is nice and clean before it is put into the water.

Lakes are beautiful natural features, and provide many homes for animals, and a lot of fun for people ~ let's keep them healthy!



Name _____ Date _____

Answer the following questions about lakes:

1. How are lakes formed? _____

2. How is the water in lakes held stable? _____

3. Describe a lake in summer. _____

4. Why are fish and other animals able to live in the whole lake during the spring and fall? _____

5. How can lakes become unhealthy? _____

6. What are introduced species? _____

7. How do introduced species affect the animals that live in a lake? _____

8. Have you ever been to a lake? What was it like? _____

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Answers to Lakes

1. Lakes are formed by glaciers, river drainage, surface water runoff, precipitation (rain or snow) and groundwater seepage.
2. The water level is held stable through groundwater seepage, evaporation and outflow streams.
3. The lake in summer is separated into three distinct layers: the epilimnion is the top layer. This is the layer that is warmest, and contains the most life in summer. The metalimnion is the middle layer, and the hypolimnion is the bottom layer. There is little oxygen in the hypolimnion, so few animals can live there.
4. During spring and fall there is increased mixing of the layers. Oxygen and nutrients are distributed evenly, and animals can live in the entire lake.
5. Lakes become unhealthy when pollutants such as excess nutrients, metals and suspended solids enter the lake. Pollutants come from farm or industrial runoff and sewage discharge.
6. Introduced species are animals that don't normally live in the lake, but have been released into the lake on purpose or by accident.
7. Introduced species disrupt life in the lake, by eating the original animals, or by changing the habitat so that the original animals cannot live there.