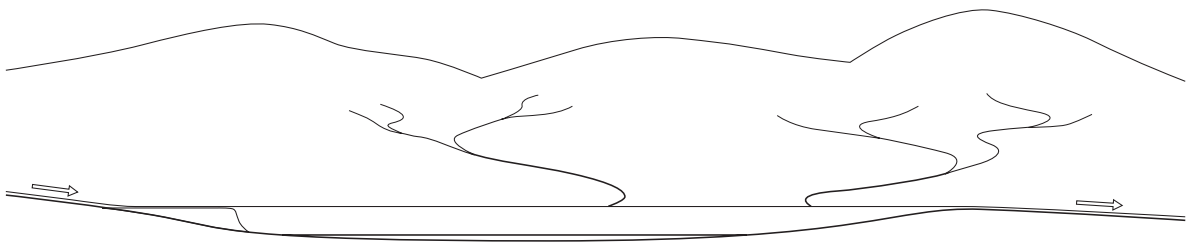


Lakes

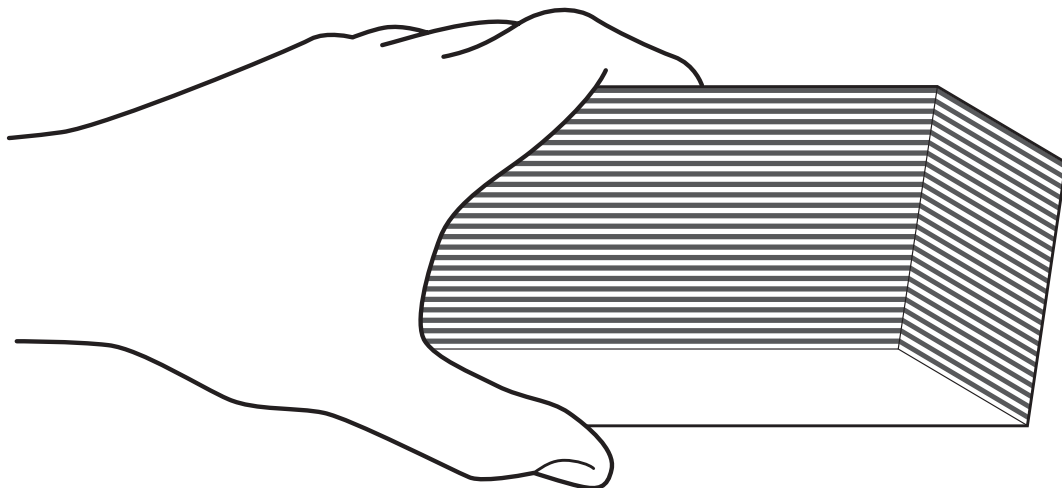
Lakes are eventually filled in by the materials brought down by rivers. The process takes a long time, but you can spot some of it happening, for example, in marshy land along the lakeshore. This is where plants are trapping mud at the lake edge.

Q1. Mark the position of a delta on the diagram.

Q2. Mark where you think mud will settle out in the lake on the diagram.



Q3. The diagram below shows a piece of lake bed. The dark layers show what was laid down in winter, the light bands show what was laid down in summer. So, every two bands mark the amount of material deposited over the year. How many years did it take for this piece of lake floor to be laid down?



Q4. The section of lake bed above is about 10cm thick. How long would it take to fill up a lake that was 10m deep?



Answers

Q1. The delta is on the left.

Q2. The mud settles out in the bottom of the lake.

Q3. This worksheet concentrates on trying to imagine how long a lake might take to fill in, and showing how we can make useful conclusions from simple measurements. Here maths and geography readily yield an interesting result. There are 50 bands in the diagram, thus it took 25 years to lay down 10cm of thickness. (This is fast by many lake standards and really only applies to small lakes.)

Q4. If 10cm takes 25 years, then 10m will take $25 \times 100 = 2,500$ years. Not long in geological terms, but over two millennia to u

Background support

Lakes (other than the small features called oxbow lakes) are features of some valleys, but they are not formed by a river. Rivers fill up lakes with sediment just as they 'silt up' reservoirs. So, lakes are a window on an historical event that is now being

altered. Many lakes are the result of glacial erosion. The lakes of the English Lake District are the result of glacial overdeepening by valley glaciers, combined with damming by glacial moraines. Rift valley lakes, such as the East African Rift Valley, and crater lakes, such as Crater Lake, are even more obviously not formed by a river.

So, although lakes are interesting and spectacular, and they are most easily taught alongside river studies, they are a temporary feature of a river valley and will eventually be filled in with sediment, as the example in the English Lake District clearly shows.

Across the curriculum

Using this material you can link:

- ▶ Physical processes, such as evaporation;
- ▶ The nature of sedimentation and the formation of strata in geology;
- ▶ The different kinds of flora and fauna that live by the lake shore and within it. (Much more information on this topic is found in the companion Curriculum Visions book *Living Things in Their Environment*);
- ▶ The way that lakes have provided important sources of water which can be used instead of making reservoirs;
- ▶ The way that lakes provide good means of transport. The huge volume of cargo moved over the Great Lakes is a good example, as is the way that lakes were used as part of the Klondike routeway during Gold Rush days (for information on this see the Curriculum Visions title: *The Mountain Book*).