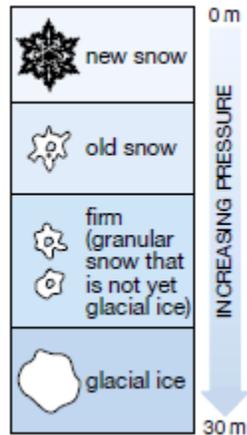


Topic 2 - Earth's Frozen Water

Page 388 #'s 1-7

1. Make a diagram to show how a glacier forms.

Your diagram should begin with snow that accumulates and gradually becomes grains, then ice crystals and finally ice.



2. Explain the difference between a valley glacier and a continental glacier.

Valley glaciers are glaciers that form in high mountains. They grow and creep down mountain sides. Continental glaciers are huge masses of ice and snow that can bury all the land they are on.

3. (a) What is meant by glacial erosion?

As glaciers move, they erode the land they travel over. They push aside and forward loose material. They pick up boulders, sand, and gravel. As these move with the glacier, they make marks in the bedrock.

- (b) What is meant by glacial deposition?

When glaciers begin to melt, they drop or deposit the boulders, sand, clay, and anything else they were carrying. These are called deposits.

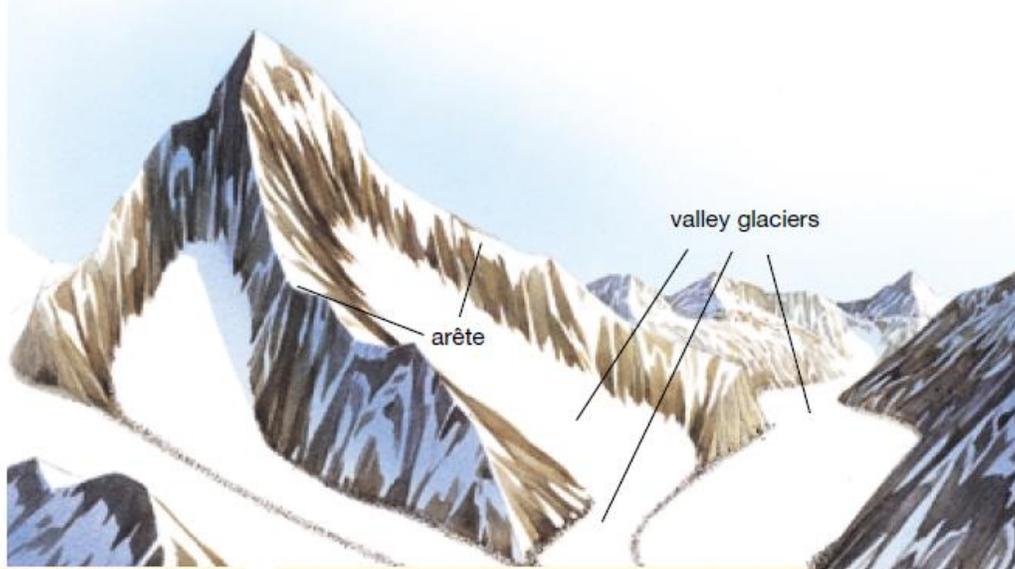
4. Draw and label some landforms created by glacial action.

Landforms include cirques, arêtes, mountain horns, U-shaped valleys, moraine, eskers, outwash plains, and glacial streams.



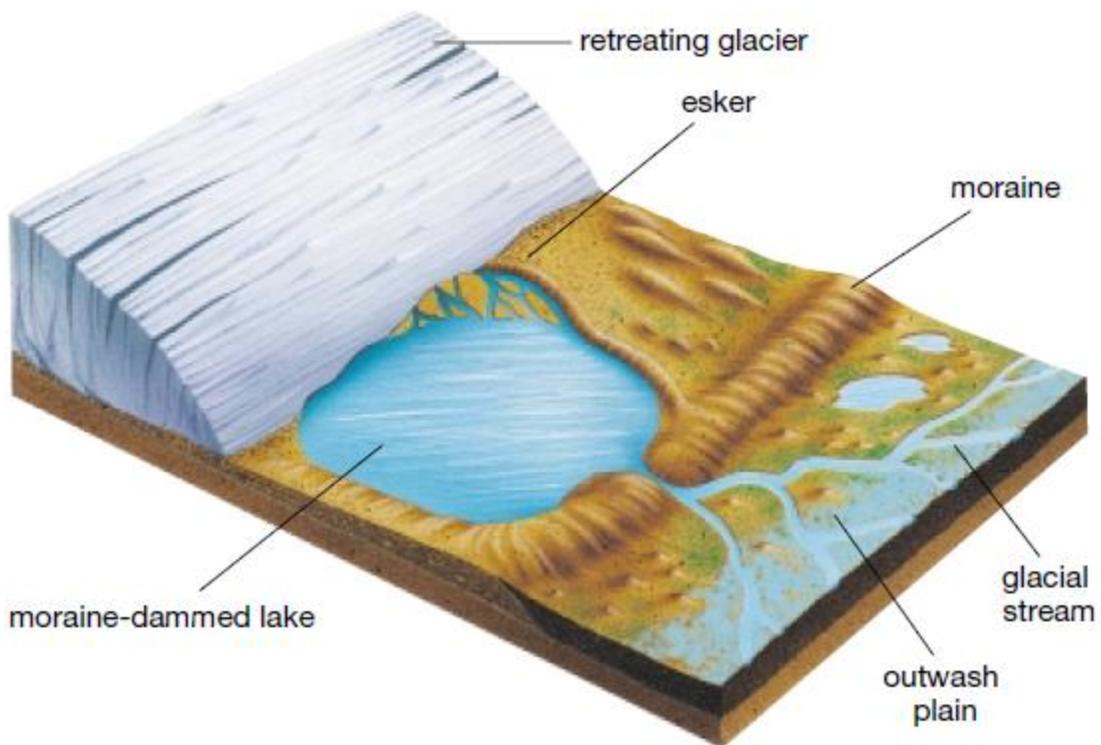
C This cirque, a bowl-shaped basin, was formed by erosion at the start of a valley glacier.

D A horn is a sharpened peak formed by glacial action in three or more cirques.





B A large ridge of material left behind by a glacier is called a moraine.



5. Give two reasons why glaciers are important.

Glaciers store fresh water and gradually release it in summer as meltwater. Glaciers provide important clues to the past because they are a source of information about Earth's past climates.

6. Give two scientific hypotheses that could explain the origin of an ice age.

Answers should include:

- reduction in thermal energy given off by the Sun
- an increase in volcanic activity - this adds dust to the atmosphere and cuts down the amount of thermal energy reaching Earth
- an increase in high mountain ranges - this means more snow to reflect the Sun's rays and reduce temperature
- movement of Earth's tectonic plates - this changes the shape of oceans and affect ocean currents so hot and cold water mix less
- changes in the tilt of Earth or in its orbit around the Sun

7. **Thinking Critically** Why do you think fossils of ocean fish are found on land far away from present-day oceans?

Fossils in ocean fish are found in places that are geographically removed from present-day oceans because coastlines have changed with the onset and the ending of the ice ages. Also, the locations of oceans have changed over time; where oceans once were located, now there is dry land.