The Changing Surface of Earth

We may not notice it during our lifetime, but Earth’s surface is always changing. The movements of ice, water, and wind cause these changes. These movements break down landforms, carry away the pieces, and deposit them in new places – creating new landforms in the process.

In many places on Earth, you can find masses of ice, called glaciers. These glaciers are so huge that they look as if they are standing still, but they actually float slowly through valleys between mountains. As it moves, a glacier can erode away the edges of a valley, making it wider and deeper. Glacial valleys have a rounded U-shape.

In addition to eroding the edges of a valley, the great weight of a glacier can crush surface rocks underneath it. The pieces of broken rock are called glacial sediments. They can range in size from boulders to fine clay. As a glacier moves, it carries these sediments with it. When the glacier stops moving, the sediments are dumped, creating land formations. One of these land forms is known as a moraine, a hilly structure that can form at the edge of a glacier.

Water can also change Earth’s surface. Rushing rivers cut through the land around them to form canyons. Canyons are narrow valleys cut by erosion.

Besides carving the land, moving water can create new land features. As a river nears the sea, the land becomes more level. The river’s energy is reduced, and its flow becomes sluggish. Like glaciers, rivers also carry pieces of rock and sand, called sediments. As the river slows near the sea, it deposits its load of sediments to create a delta. Deltas are broad, fan-shaped areas formed where rivers empty into standing water.
Moving air has less mass than ice or water, but it can still shape Earth’s surface. Winds can pick up small pieces of dirt or sand, often bouncing them along through the air. When these particles meet an obstacle, they pile up to form a dune. A dune is a hill of sand built by the wind. Coastal dunes form parallel to a shoreline, inland from a beach. They can help protect low-lying inland areas from violent storm waves. The wind that builds a dune can also move it. Some desert dunes can travel more than 100 meters in a year.

From valleys and canyons to deltas and dunes, the forces of ice, water, and wind are constantly changing the surface of Earth.
1 The main idea of this passage is...
   A Ice can break down and build up Earth’s landscape.
   B Water can change Earth’s surface.
   C Wind can shape Earth’s landforms.
   D The Earth’s surface is always changing.

2 Which natural forces can create sediments?
   A Wind and ice
   B Moving air, moving water, and moving ice
   C Water and ice
   D Sunlight

3 According to the paragraph 6, *particles* can pile up to form a dune. The word particles means:
   A A hill of sand
   B Large masses of ice
   C Small pieces of matter
   D Low-lying areas
4 What can you infer from the passage?

A Changes in Earth’s surface occur slowly.
B Glaciers are dangerous.
C You can see glaciers move.
D Dunes last forever once they are formed.

5 What does the author mean by the word carving in the passage? (paragraph 5)

A Creating sediment
B Making new mountains
C Cutting through land
D Dropping sediment