

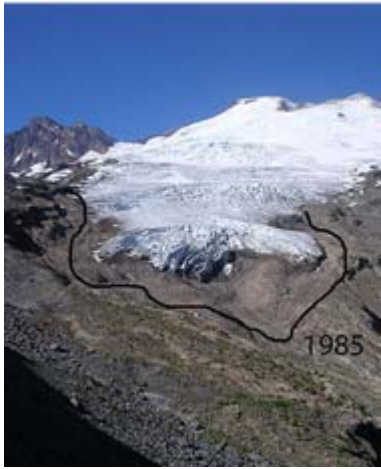


## Timeline: Glacier Formation

**Directions:** Read the information about each stage in the development of a glacier.

Stage	Audio Script	Text	Image
<p><b>Early Stages</b> <b>Glacial Formation</b></p>	<p>Glaciers form in areas that accumulate more snowfall than is lost each year by melting and ablation. As the snow accumulates over time, it recrystallizes and changes to a granular form. Recrystallized snow left over from several seasons is called firn. Firn is the intermediate stage between snow and glacial ice. Over a period of years, layers of firn are compacted to form glacial ice that then begins to flow under its own weight. This growing stage of development is called glaciation.</p>	<p>Glaciers form in areas that accumulate more snowfall than is lost each year by melting (ablation). As the snow accumulates over time, it recrystallizes and changes to a granular form. Recrystallized snow left over from several seasons is called firn. Firn is the intermediate stage between snow and glacial ice. Over a period of years, layers of firn are compacted to form glacial ice that then begins to flow under its own weight.</p>	 <p>The diagram, titled "Glacier ice formation", illustrates the process on a black background. It shows four stages connected by red arrows in a clockwise cycle:      <ul style="list-style-type: none"> <li><b>Snowflake:</b> A large, intricate white snowflake.</li> <li><b>Granular snow:</b> A smaller, less complex snowflake.</li> <li><b>Firn:</b> A cluster of small, rounded white particles.</li> <li><b>Glacier ice:</b> A large, irregular white mass representing ice.</li> </ul>     Red arrows indicate the progression from Snowflake to Granular snow, then to Firn, then to Glacier ice, and finally a return arrow from Glacier ice back to Snowflake.</p>

<p><b>Moving Forward Growth</b></p>	<p>At this point a glacier has begun to move. It will move downhill by gravity or outward in all directions if it is over a flatter piece of land. Most glaciers slide over a thin layer of water underneath them. This water may come from melting caused by overlying pressure or by dripping through cracks in the ice. This movement of a glacier is called glacial advancing.</p>	<p>At this point a glacier has begun to move. It will move downhill by gravity or outward in all directions if it is over a flatter piece of land. Most glaciers slide over a thin layer of water underneath them. This water may come from melting caused by overlying pressure or by dripping through cracks in the ice. This movement of a glacier is called glacial advancing.</p>	
-------------------------------------	--	--	---

<p><b>Glacial Retreat Ablation</b></p>	<p>After some time in its journey, a glacier may reach a point where ablation exceeds ice accumulation. At this point the glacier is said to be in retreat. This photo shows how the bottom boundary of a glacier changed from 1985 to 2005 as it underwent glacial retreat. At that time, the glacier shrunk because snow accumulation was slower than loss by melting. This process is called ablation.</p>	<p>After some time in its journey, a glacier may reach a point where ablation exceeds ice accumulation. At this point the glacier is said to be in retreat. This photo shows how the bottom boundary of a glacier changed from 1985 to 2005 as it underwent glacial retreat. At that time, the glacier shrunk because snow accumulation was slower than loss by melting and ablation.</p>	
--	---	---	---