The eruption at the summit of Eyjafjallajökull in April-May 2010 produced about 0.17 km$^3$ (DRE) of benmorite, mostly in the form of volcanic tephra. It was the largest tephra-producing eruption in Iceland since the 1918 Katla eruption. However, the discharge was always moderate, with a maximum of only $1\times10^6$ kg/s. The eruption began under ice; it worked its way through the ice cover leading to a phase of vigorous explosive magma-water interaction, followed by a prolonged phase of mixed activity dominated by lava effusion, and a powerful, apparently mostly dry explosive phase. Three distinct characteristics stand out: (1) The high proportion of fine ash produced during the main explosive phases. The north-westerly jet stream lead to ash dispersal towards Europe and unprecedented disruption to air traffic; (2) Variable water access to the vents. A strong phreatomagmatic component is apparent in the first four days of the eruption while water access was fluctuating during the remaining 35 days of continuous activity. (3) A large variety in interaction between lava and tephra and the surrounding 100-200 m thick ice. This included rapid formation of ice cauldrons and the progression of lava down the outlet glacier of Gígjökull to the north of the main summit caldera. Lahars and jökulhlaups accompanied the eruption in the first few days, as ice was rapidly melted. Ice cauldron growth demonstrated the strong inverse link between melting rate and vent to ice-wall separation. Due to limited ice thickness ice flow towards vents was relatively minor.