

What Makes an  
Eruption Explosive?

# Volcanoes

*What are they?*



Would you want to live near one?



# The truth is...

Many types of eruptions are not the “explosive type” we imagine...



Effusive eruption →

↓ Explosive eruption



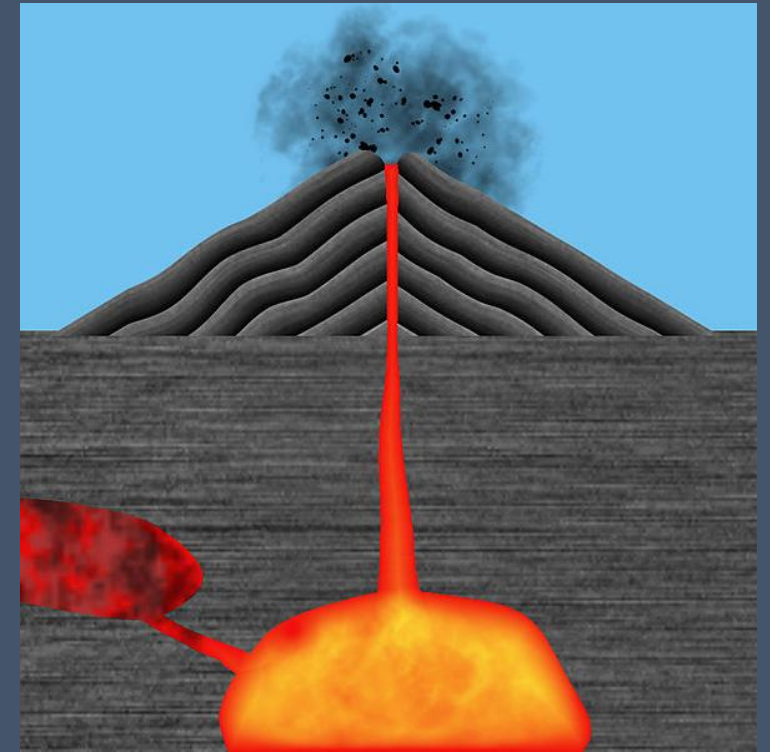
# But when they are explosive...

- **Plinian eruption:** The largest and most violent of all types of volcanic eruptions
- Gas and ash can rise up to 50 km and can spread for hundreds of miles from the volcano
- **Mount St. Helens (1980)**
  - 57 people killed



What contributes to  
violent eruptions?

- Extreme temperatures and pressures
- Volcanic ash, gas, rock fragment expulsion





But also these:



# Time to Explore Two Main Concepts:

- **Viscosity:** A fluid's resistance to flow or movement.  
Describes internal friction of a fluid.  
*A bubble encounters more resistance as it rises through honey than through water.*
- **Degassing:** The process of freeing gas from a solution.  
In this case, freeing gas from magma.