What are sand dunes and how are they formed?

**Definition:** A sand dune is a mound of sand that has been formed by the impact of the prevailing wind. These ‘windy’ actions are known as Aeolian Processes.

- **Bedrock from an upland area** is broken down by the action of the wind and rain, as well as by subaerial processes (also known as weathering). This creates fine material such as sand.
- **This eroded material** is transported down the hillsides via streams and wadis during wetter months.
- **However once the wadis dry out and there is no rainfall,** the eroded material is exposed to the wind.
- **The wind moves the particles of material in different ways (see below) depending on how large and heavy they are.**
- **When the blown material reaches a sheltered area it is deposited and over time further deposited material accumulates to form a sand dune.**

**Aeolian Transportation in the Desert**

The wind moves sand material in three main ways in the desert.

1. **The lightest material is held in the air and flows in the body of the wind itself.** This is known as suspension.
2. **Heavier material is partly suspended by the wind but regularly falls to the ground again,** making it appear to ‘bounce’ along the desert surface. This is known as saltation.
3. **The heaviest material does not rise off the desert surface.** Instead it gets knocked by smaller material on the move and so rolls by impact. This is known as impact creep.

**Sand dunes generally have a windward side** (that faces the prevailing wind) and a slipface (that faces away from the prevailing wind).