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6:3 Global and Local Winds

Coriolis Effect - apparent curving of winds and ocean currents

due to the Earth's rotation...

In N hemisphere

-winds going N curve to East and

-winds going S curve to West

Global Winds

* Winds that go around the world; long distance winds
* are caused by patterns of air circulation produced by convection

cells found at every 30° latitude AND the Coriolis Effect.

Types of Global Winds:

1 Polar Easterlies

* wind belts that blow from East to West
* found between poles 90° AND 60° Latitude in both

hemispheres

* formed by cold, sinking air from the poles
* In N hemisphere, they carry cold Artic air over US
* produce snow and freezing weather

2 Prevailing Westerlies

* wind belts that blow from West to East toward the poles
* found between 30° and 60° in both hemispheres
* carry moist air over US
* produces rain and snow
* cover MOST of the U.S.

3 Trade Winds

* wind belts blow from 30°latitude almost to the equator
* Coriolis Effect causes trade winds to curve to the West in the N Hemisphere and East in the S Hemisphere
* Early traders used trade winds to sail from Europe to the Americas for trade

4 Doldrums (dull or sluggish)

* area around the equator where trade winds of the N and S meet
* very little wind because warm air rising causes an area of low pressure

1. Horse Latitudes (carried horses from Europe to Americas)

* 30° N AND 30°S of the Equator...
* sinking air creates area of high pressure… weak winds
* most of world's deserts are located here ...sinking dry air

6 Jet Streams (atmospheric conveyor belts)

* narrow belts of high speed winds
* found in upper troposphere and lower stratosphere
* max speed 400 km/h
* no regular path
* jet pilots and meteorologist use

**Local Winds**

* blow from any direction over short distances
* temperature differences cause local winds
* day time: land heats faster water...winds blow toward the land

sea breeze

* night (NITE): land cools faster than water...winds blows toward the ocean…land breeze

Mountain and Valley Breezes

* Day: warm air rises up mountain creating a valley breeze
* Night: cool air moves down mountain slopes into valley producing a mountain breeze
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