

# Continentality

- In this lesson you will:
  - 2.5.1 Define the term temperature range. (k)
  - 2.5.2 Analyze the relationship between range in temperature and distance from the ocean. (a)
  - 2.5.5 Describe the relationship between seasonal level of precipitation and distance from the ocean. (k)

# Continentality

- **Temperature range:** the difference between the highest and the lowest average monthly temperatures of a region.
  - **Large or high** temperature range: extremes of temperature...hot summer, cold winter.
  - **Small or low** temperature range: moderated temperature...warm summer, cool winter

# Continental vs. Maritime Climates

- As distance from the ocean increases, annual temperature range increases.
- **Continental climates** experience greater extremes of temperature than coastal climates at the same latitude.
- **Examples: (i) Central/Western Labrador, (ii) Saskatchewan**
  - The winter temperatures are very cold.
  - The summer temperatures are fairly hot.

# Areas Circled = Continental Climates



# Maritime Climates

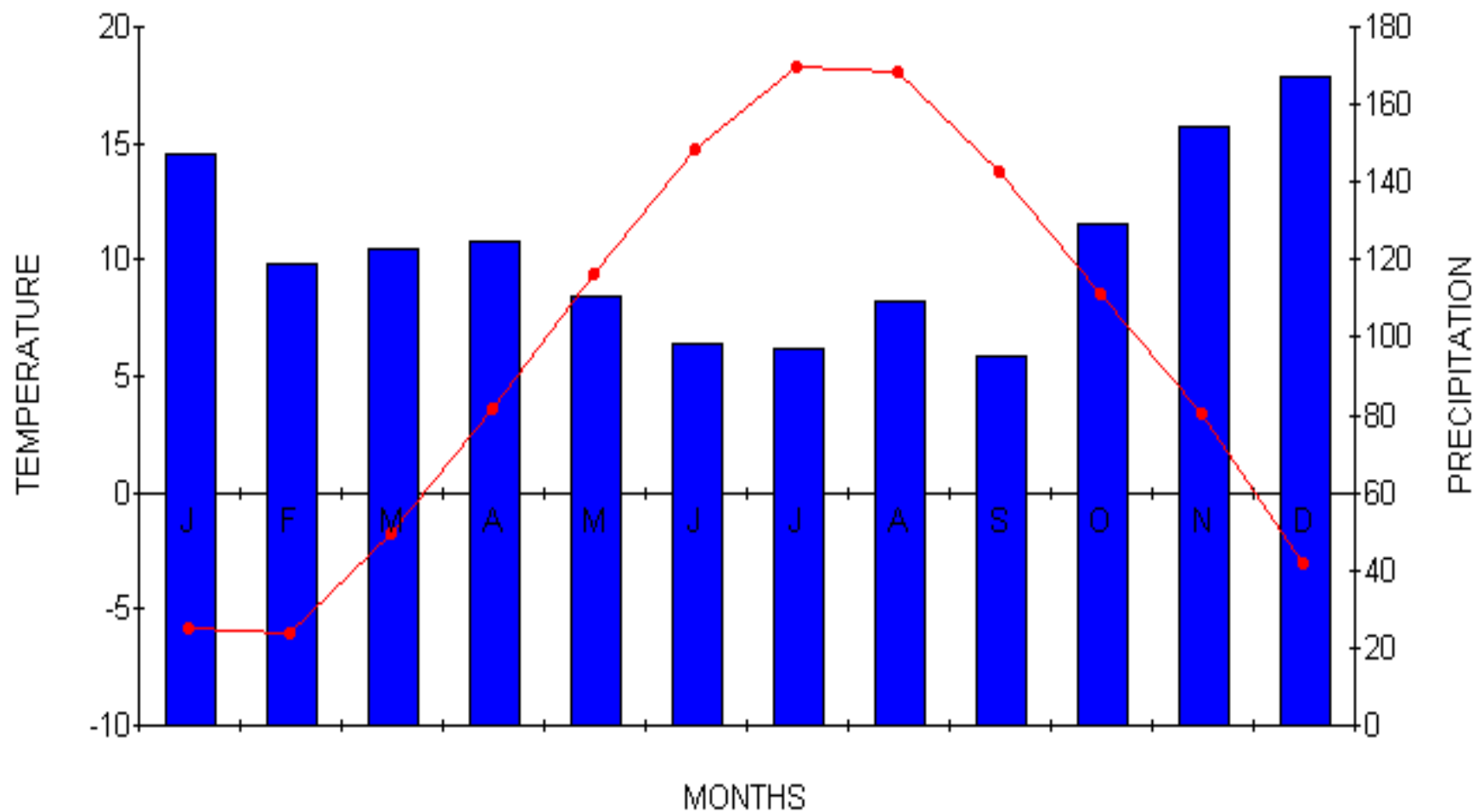
- **Example: Coastal Newfoundland would experience a Maritime climate:**
  - The **winter temperatures** would be **very mild**.
  - The **summer temperatures** would be **warm but not hot**.

# Climate Graphs

- The left scale indicates the **temperature** and it is **graphed as a line**, blue/red is common.
- The right scale is for **precipitation** and is **graphed as a bar graph**, blue/red is common.

# CLIMATE GRAPH HALIFAX INTL AIRPORT

1961-1990



■ Precipitation (mm)    ● Daily Mean (°C)

**M.D.Bennett**

# Monsoons

- In this lesson you will learn to...
  - 2.5.3 Define the term monsoon. (k)
  - 2.5.4 Explain why winter and summer monsoons occur. (k)



# Monsoons

- From Arabic for 'seasonal wind'
- **DEFINITION:** a sudden wet season in the tropics.



# India's Winter Monsoon

- 1) In the winter, **Continental Asia cools & high atmospheric pressure results**
  - 2) **Wind blows southward** towards the low pressure over Indian Ocean
  - 3) **Very little rain or dry season results** because the wind is blowing over dry land and does not pick up water
- VIEW DIAGRAM ON NEXT SLIDE



Cold

Dec 21

Dry Season

Warmer  
☀️



0 1000 Miles  
0 1000 Km

# India's Summer monsoon

- 1) **Continental Asia heats up** & lower atmospheric pressure develops over the land. Higher pressure develops over the Indian Ocean.
- 2) **Wind then blows northward** towards the low over India
- 3) **Tremendous rains result** because the wind is blowing over the warm Indian Ocean.

■ VIEW DIAGRAM ON NEXT SLIDE





Reykjavik

ICELAND

IRELAND

Dublin

U.K.

London

NORWAY

Oslo

SWEDEN

Stockholm

FINLAND

Helsinki

GERMANY

Copenhagen

DENMARK

Poland

Warsaw

CZECH REPUBLIC

Prague

AUSTRIA

Vienna

SLOVENIA

Ljubljana

CROATIA

Zagreb

SLOVAKIA

Bratislava

HUNGARY

Budapest

BYELARUS

Minsk

RUSSIA

Moscow

RUSSIA

Krasnodar

RUSSIA

Saratov

RUSSIA

Volgograd

RUSSIA

Tol Yatti

RUSSIA

Kuznetsk

RUSSIA

Chelyabinsk

RUSSIA

Sverdlovsk

RUSSIA

Ufa

RUSSIA

Kazan

RUSSIA

Perm

RUSSIA

Gorkiy

RUSSIA

Novosibirsk

RUSSIA

Irkutsk

RUSSIA

Omsk

RUSSIA

Krasnojarsk

RUSSIA

Novosibirsk

RUSSIA

Chelyabinsk

RUSSIA

Sverdlovsk

RUSSIA

Ufa

RUSSIA

Kazan

RUSSIA

Perm

RUSSIA

Gorkiy

RUSSIA

Novosibirsk

RUSSIA

Irkutsk

RUSSIA

Omsk

RUSSIA

Krasnojarsk

RUSSIA

Novosibirsk

RUSSIA

Chelyabinsk

RUSSIA

Sverdlovsk

RUSSIA

Ufa

RUSSIA

Kazan

RUSSIA

Perm

RUSSIA

Gorkiy

RUSSIA

Novosibirsk

RUSSIA

Irkutsk

RUSSIA

Omsk

RUSSIA

Krasnojarsk

RUSSIA

Novosibirsk

RUSSIA

Chelyabinsk

RUSSIA

Sverdlovsk

RUSSIA

Ufa

RUSSIA

Kazan

RUSSIA

Perm

RUSSIA

Gorkiy

RUSSIA

Novosibirsk

RUSSIA

Irkutsk

RUSSIA

Omsk

RUSSIA

Krasnojarsk

RUSSIA

Novosibirsk

RUSSIA

Chelyabinsk

RUSSIA

Sverdlovsk

RUSSIA

Ufa

RUSSIA

Kazan

RUSSIA

Perm

RUSSIA

Gorkiy

RUSSIA

Novosibirsk

RUSSIA

Irkutsk

RUSSIA

Omsk

RUSSIA

Krasnojarsk

RUSSIA

Novosibirsk

RUSSIA

Chelyabinsk

RUSSIA

Sverdlovsk

RUSSIA

Ufa

RUSSIA

Kazan

RUSSIA

Perm

RUSSIA

Gorkiy

RUSSIA

Novosibirsk

RUSSIA

Irkutsk

RUSSIA

Omsk

RUSSIA

Krasnojarsk

RUSSIA

Novosibirsk

RUSSIA

Chelyabinsk

RUSSIA

Sverdlovsk

RUSSIA

Ufa

RUSSIA

Kazan

RUSSIA

Perm

RUSSIA

Gorkiy

RUSSIA

Novosibirsk

RUSSIA

Irkutsk

RUSSIA

Omsk

RUSSIA

Krasnojarsk

RUSSIA

Novosibirsk

RUSSIA

Chelyabinsk

RUSSIA

Sverdlovsk

RUSSIA

Ufa

RUSSIA

Kazan

RUSSIA

Perm

RUSSIA

Gorkiy

RUSSIA

Novosibirsk

RUSSIA

Irkutsk

RUSSIA

Omsk

RUSSIA

Krasnojarsk

RUSSIA

Novosibirsk

RUSSIA

Chelyabinsk

RUSSIA

Sverdlovsk

RUSSIA

Ufa

RUSSIA

Kazan

RUSSIA

Perm

RUSSIA

Gorkiy

RUSSIA

Novosibirsk

RUSSIA

Irkutsk

RUSSIA

Omsk

RUSSIA

Krasnojarsk

RUSSIA

Novosibirsk

RUSSIA

Chelyabinsk

RUSSIA

Sverdlovsk

RUSSIA

Ufa

RUSSIA

Kazan

RUSSIA

Perm

RUSSIA

Gorkiy

RUSSIA

Novosibirsk

RUSSIA

Irkutsk

RUSSIA

Omsk

RUSSIA

Krasnojarsk

RUSSIA

Novosibirsk

RUSSIA

Chelyabinsk

RUSSIA

Sverdlovsk

RUSSIA

Ufa

RUSSIA

Kazan

RUSSIA

Perm

RUSSIA

Gorkiy

RUSSIA

Novosibirsk

RUSSIA

Irkutsk

RUSSIA

Omsk

RUSSIA

Krasnojarsk

RUSSIA

Novosibirsk

RUSSIA

Chelyabinsk

RUSSIA

Sverdlovsk

RUSSIA

Ufa

RUSSIA

Kazan

RUSSIA

Perm

RUSSIA

Gorkiy

RUSSIA

Novosibirsk

RUSSIA

Irkutsk

RUSSIA

Omsk

RUSSIA

Krasnojarsk

RUSSIA

Novosibirsk

RUSSIA

Chelyabinsk

RUSSIA

Sverdlovsk

RUSSIA

Ufa

RUSSIA

Kazan

RUSSIA

Perm

RUSSIA

Gorkiy

RUSSIA

Novosibirsk

RUSSIA

Irkutsk

RUSSIA

Omsk

RUSSIA

Krasnojarsk

RUSSIA

Novosibirsk

RUSSIA

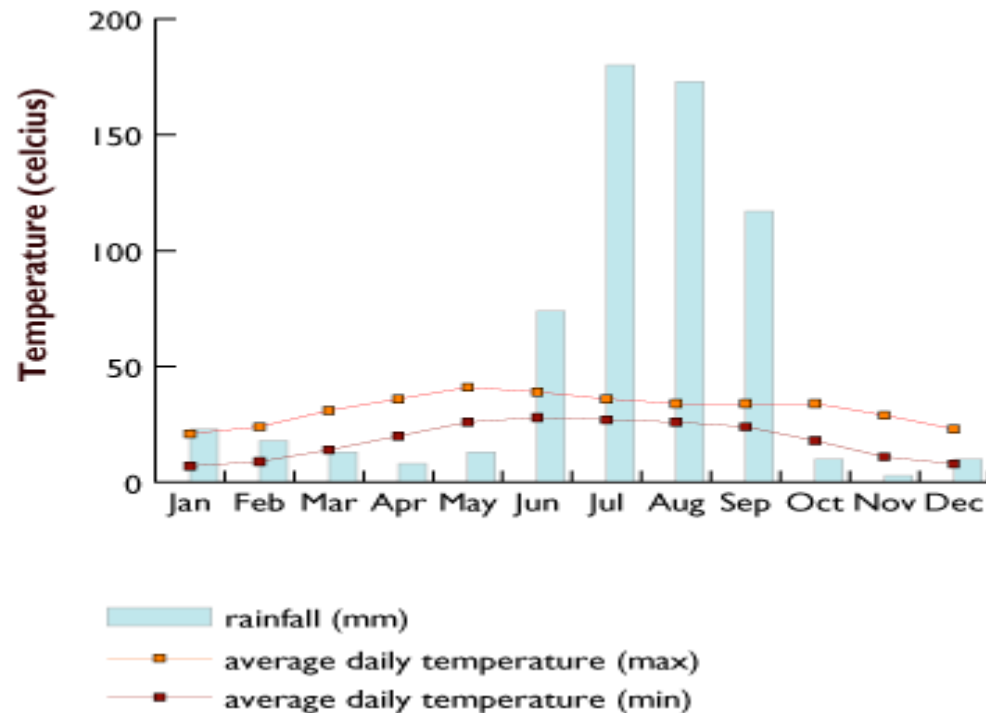
Chelyabinsk

RUSSIA

RUSSIA



- Statistics: Bombay/Colaba, India - The Weather Network



# 2.06 Elevation & Climate

- In this lesson you will:
  - 2.6.1 Define the term elevation. (k)
  - 2.6.2 Describe the relationship between the elevation of a point and its temperature and precipitation. (k)
  - 2.6.3 Analyze the relationship between temperature and precipitation of a point and its location relative to a mountain system. (a)



# ELEVATION & TEMPERATURE

- **Elevation:** the height of a region above sea level
- **Air temperature decreases 2°C for every 300 m increase in elevation.**
- The higher up we go the colder it gets...hence snow on mountain tops

# Elevation & Climate...Comparing Locations

- **La Paz, Bolivia:**
  - Elevation...3600m.
  - coldest month...average temperature of 9°C.
    - [Bolivia Climate and Weather](#)
- **Rio de Janeiro, Brazil:**
  - Elevation...61m.
  - coldest month has...average temperature of 25°C.
  - [Rio de Janeiro climate and weather Brazil](#)
- Both locations have a **similar distance from ocean and similar latitude.**
- However, La Paz is much colder because of higher elevation.



# Continentality Lab

- **By this time you should have a fairly good idea how continentality affects climate and weather. You also know how oceans, latitude and wind affect weather and climate.**
- **Do ACTIVITY**