

THUNDERSTORMS



<http://australiasevereweather.com/>

Thunderstorm Facts:

- 44,000/day in the World
- Last only ~1 Hour
- 10-20 km across (6-12 mi)
- Rapid upward movement of air (up to 60 mph)
 - > Cumulonimbus Clouds
 - > Thunder, Lightning, Rain, Hail, Tornadoes

2 Types of Thunderstorms:

1. Air Mass Thunderstorms

- warm moist air in an mT air mass is heated on a sunny day
- Air will heat, rise, cool, condense and form small t-storms
- Scattered (sometimes called popcorn t-storms)
- Unpredictable
- Short (<1 hr)
- Usually not severe

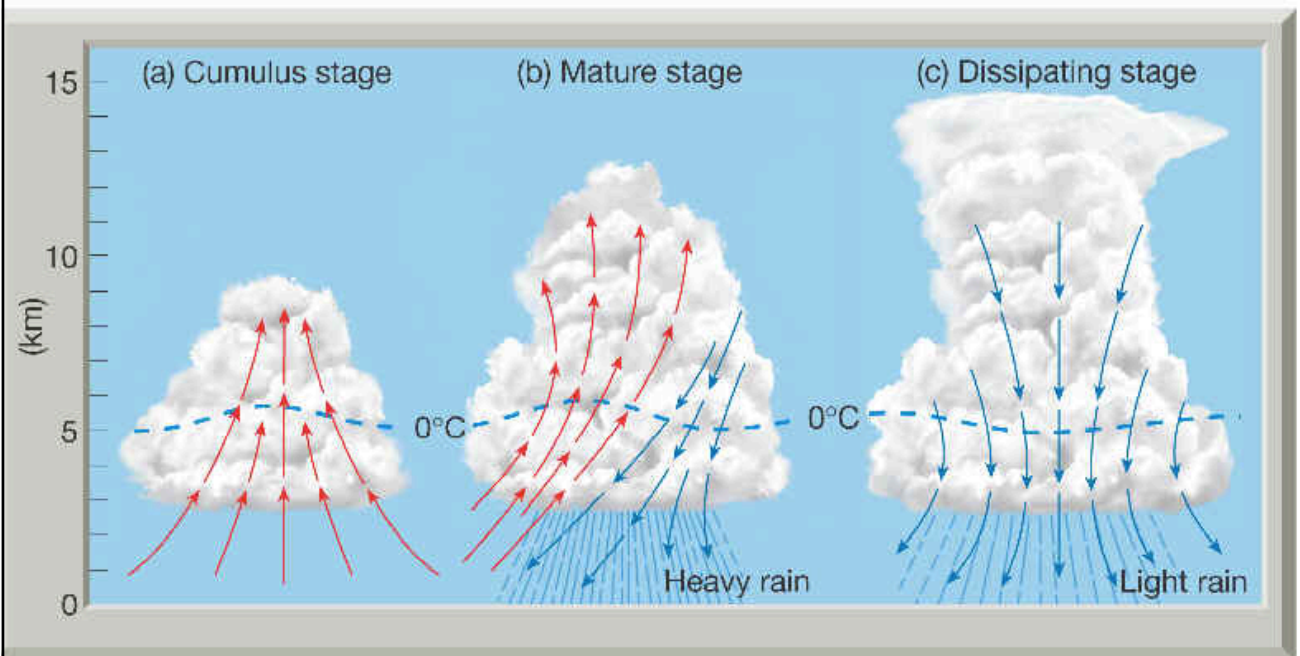
(sketch)

2. Frontal Thunderstorms

- Usually form along a cold front when warm moist air is forced rapidly upwards by fast moving cold air.
- Very severe producing high winds, lightning, heavy rain, hail, & tornadoes
- **squall line:** The line of t-storms along a cold front

(sketch)

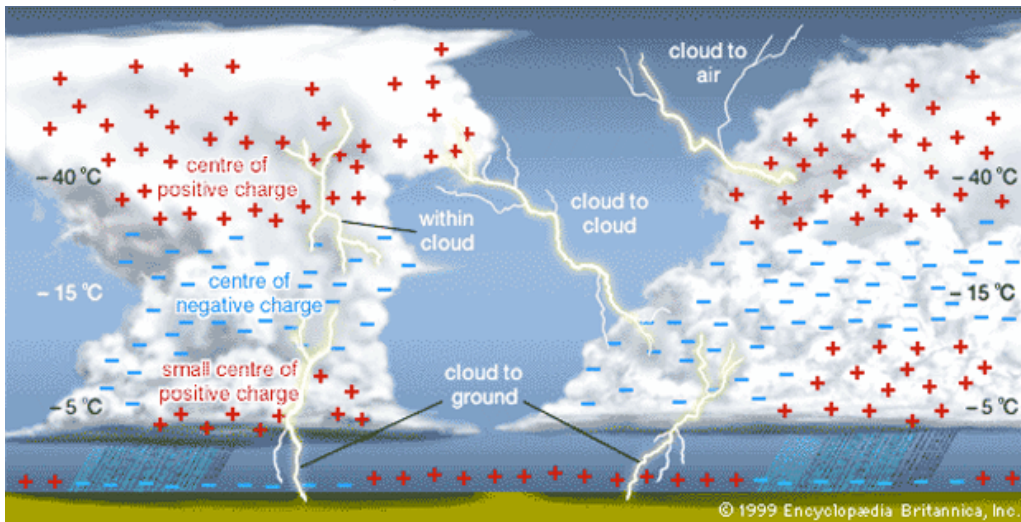
Thunderstorm Cycle



ELECTRICITY

in a Thunderstorm

- All t-storms produce lightning
- **Lightning**: discharge of electric charges between clouds, within clouds, and/or ground



Lightning Facts



- Temp.= 28,000°C (50,000°F)
- Takes ~3 sec for thunder to travel 1 km
> 5 sec. per mile
- **Heat Lightning:** ordinary lightning that's more than 16 km (10 mi) away so the thunder cannot be heard

3 Types of Lightning

BOLT

SHEET

BALL

- **Lightning is one of the **most dangerous** weather related phenomenon**
- **Kills up to **100 people/year** in the U.S.**
- **Generally, lightning **takes the easiest path****
 - **usually through the highest/
pointiest object**

- **Stay indoors**
- **stay in your car**
- **get off exposed machinery**
- **stay out of water**
- **don't be near tall pointed objects**
- **don't use telephone**
- **don't use water**



HOMework



- **Questions 8-20**