

Review of chap 14: Thunderstorms

- What is the definition of a thunderstorm?
- To what does “convective” refer?
- In what environment does an ordinary thunderstorm form?
- What is an updraft? A downdraft?
- What does it mean to say that dry air is “entrained” into a cumulus cloud? How does the appearance of a cumulus cloud show you that entrainment is occurring?
- What 2 factors cause air to sink in a thunderstorm?

Thunderstorms

- What is a “cell” in a thunderstorm?
- How long does a cell last in an ordinary thunderstorm?
- What is the life cycle of an ordinary thunderstorm?
- At what stage in its life cycle does an ordinary thunderstorm have the most intense updraft?
- What kills an ordinary thunderstorm?
- What is a gust front?
- What is it like if a gust front passes you?

Thunderstorms

- Why is it common for a new thunderstorm cell to form at gust front, particularly where gust fronts from two thunderstorms meet?
- What is a multicell thunderstorm?
- What is the definition of a severe thunderstorm?
- What is different about the environment in which a long-lasting severe thunderstorm develops compared to an ordinary thunderstorm?
- What is a supercell?

Thunderstorms

- What is a shelf cloud? A roll cloud?
- What is a downburst? A microburst?
- Why is airplane during takeoff or landing particularly threatened by a microburst?
- What is a derecho?
- What is a squall line? What travels out from a cold front that helps to initiate a squall line?
- How can cells in a squall move from SW to NE, but the squall line moves to the east, i.e., to the right of the individual cells’ motion?
- What regions of the US are most likely to have thunderstorms? Which US regions have hail?

Lightning and Thunder

- How fast does sound travel in ft per second?
- How can you determine how far away a thunderstorm is by listening for thunder?
- Describe the life cycle of a lightning flash.
- Does lightning ever strike the same place twice?
- What kind of rock is a fulgurite?
- What should you do if you hear thunder that comes less than 30 seconds after you see lightning?
- Is it safe to take shelter under a tree in a storm? Explain.

Tornadoes

- What is a tornado? A funnel cloud?
- How wide is a typical tornado?
- During what part of day and time of year do most US tornadoes occur?
- Which country has the most tornadoes?
- What part of the US receives the most tornadoes?
- What scale is used to rate tornado intensity?
- A “strong” tornado has a ranking of what or higher according to the scale just mentioned? (Table 14.2, p. 394)

Tornadoes

- If you are in an area that has a tornado warning, what should you do? (Do this quickly because a typical tornado warning comes less than 10-15 minutes before a tornado hits.)
- What is a multi-vortex tornado? A suction vortex?
- What is a mesocyclone?
- What 2-step process causes mesocyclones to rotate around a vertical axis? (Step 1 involves rotation around a horizontal axis. Step 2 takes this rotation and shifts it to a vertical axis.)
- What is a wall cloud? (p. 397)

Doppler Radar and Water Spouts

- What extra information can a Doppler radar provide that a radar without Doppler cannot?
- What is the Doppler effect (or Doppler shift)?
- What is a waterspout?
- Where are waterspouts most common?