

## Reading guide for October 15

from Henson, *Rough Guide to Weather*

### Chapter 2: The wild stuff

p. 69–70. *Thunderstorms.*

- How common are thunderstorms worldwide?

pp. 70–71. “*What makes a thunderstorm?*” This briefly outlines the physics of a thunderstorm. Try to pick out the following tidbits as they go by.

- What type of clouds make thunderstorms?
- What sort of atmospheric temperature profile creates thunderstorms?
- What physical process causes cumulus clouds to grow vertically?
- How do electric charges form in a thunderstorm?

pp. 71–73. “*The many faces of lightning.*” Don’t worry about the different types of lightning; they’re beyond the scope of this course. The main thing to get from this section:

- How is **thunder** produced from lightning?

pp. 73–74. “*Thunderstorm types.*” This describes the variety of thunderstorms, which form under slightly different conditions.

- Why do **single-cell** storms die?
- How do **multicell** storms form?
- Under what conditions does a **squall line** form?
- What conditions allow **supercells** to form?
- What is a **mesoscale convective complex** (MSC)? How large do they become?

pp. 74–75. *Hail.* Many of you are quite familiar with this rare weather phenomenon, because it reaches the world’s greatest frequency in our backyard, from Denver to Cheyenne.

pp. 75–77. “*A hailstone’s trip to earth.*”

- How do **hailstones** form?

- What is the structure of giant hailstones?

pp. 77–79. “*On impact.*” Nothing here gives particular insight into the properties of hail, but it is interesting.

pp. 79–80. *Tornadoes.* This section mostly describes the geographic distribution of **tornadoes**.

pp. 80–81. “*Spin control.*” Tornadoes are not well understood, but there are some characteristics they tend to share.

- What storms produce tornadoes?
- What atmospheric conditions foster tornado formation?
- What clues indicate that a tornado is imminent?

p. 82–83. “*What a tornado does.*”

- What house construction is most tornado-safe?
- What sort of dwelling is very prone to tornado damage?
- What is the best tornado shelter?
- Does opening the windows of a house help avoid tornado damage?

pp. 398–399. Box “Weather safety tips.” You don’t need to answer any questions here, but keep these sensible guidelines in mind throughout your life.

pp. 404–406. “*Tornadoes.*” This presents two tornado intensity scales. Particularly read the **EF scale** used in the U.S. Note the descriptions of what these storms are capable of doing. Now when a storm’s intensity is reported, you will know what it means.