

Why Summer Storms Pick the Afternoon

Name: _____

Date: _____

Class: _____

Read the lesson at myweatherrock.com/journal/explainers/summer-storms-afternoon (or the printed copy), then answer below.

Remember

Summer thunderstorms cluster in the afternoon because the day is a loading cycle. All morning the sun heats the ground and the ground loads the air above it with heat, on the slow schedule that puts the day's peak warmth hours after noon. A sticky morning means the moisture fuel is aboard too. By midafternoon the warmest air of the day is rising in its strongest bubbles, and if the recipe's other ingredients are in place, the towers build and the sky spends what the morning saved. When the sun quits, the storms lose their allowance and fade. And all of it is watched from indoors: when thunder roars, go indoors.

Questions

1. Why do summer thunderstorms so often wait for late afternoon?

- ☐ A. Storms prefer to travel in the dark
- ☐ B. The air near the ground reaches its warmest hours after noon, and the warmest air makes the strongest rising bubbles
- ☐ C. The wind only picks up after lunch

2. What does a sticky morning contribute to the afternoon's storms?

- ☐ A. Nothing, humidity is just uncomfortable
- ☐ B. Moisture, which is the storm's fuel
- ☐ C. It cools the ground down

3. Why do the afternoon's storms usually fade in the evening?

- ☐ A. Rain puts out the lightning
- ☐ B. The sun quits, so the heating that built the rising bubbles goes away
- ☐ C. Storms are afraid of the dark

4. A thunderstorm rolls through at seven in the morning. Does that break this lesson's rule?

- ☐ A. Yes, morning storms are impossible
- ☐ B. No, other lifts like fronts and traveling storm clusters do not need afternoon heat
- ☐ C. Yes, unless it is winter

5. You are mid-experiment, watching your predicted towers, and you hear the first distant rumble. What happens next?

- ☐ A. Keep watching from the yard until rain starts
- ☐ B. Go indoors immediately and keep observing from a window
- ☐ C. Wait to see lightning before deciding

In your own words

Your town gets a thunderstorm at four in the afternoon three days in a row, and never at breakfast. Explain what the morning sun has to do with the afternoon boom.

Answer key (for the teacher)

1. Why do summer thunderstorms so often wait for late afternoon?

B. The air near the ground reaches its warmest hours after noon, and the warmest air makes the strongest rising bubbles — Morning sun loads the ground, the ground loads the air on a delay, and the day's peak warmth lands in midafternoon. Peak warmth means peak lift, and lift is what cashes in the loaded sky.

2. What does a sticky morning contribute to the afternoon's storms?

B. Moisture, which is the storm's fuel — Sticky air is moist air, and moisture is the first ingredient of the thunderstorm recipe. A hot morning that is also sticky is a sky loading both heat and fuel.

3. Why do the afternoon's storms usually fade in the evening?

B. The sun quits, so the heating that built the rising bubbles goes away — Storms that run on daytime heating lose their power source at sunset. No more strong bubbles, no more fuel deliveries, and the storm rains itself out.

4. A thunderstorm rolls through at seven in the morning. Does that break this lesson's rule?

B. No, other lifts like fronts and traveling storm clusters do not need afternoon heat — Afternoon heating is one ticket into the sky, not the only one. A front brings its own lift at any hour. The schedule belongs to storms the sun pays for.

5. You are mid-experiment, watching your predicted towers, and you hear the first distant rumble. What happens next?

B. Go indoors immediately and keep observing from a window — When thunder roars, go indoors. If you can hear it, you are in range. Every observation in this experiment works through a window, and you stay in until thirty minutes past the last rumble.