

Name _____
Literacy Lab #36 - 102 At Midnight!

Date _____
Earth Science - Breed - 2012/2013

Directions: Take a few minutes to read the article below either online (or on the back of this page.) Write responses to the statements or questions below. Cut/copy/paste is not allowed – use your own words and thoughts, based in research if needed.

Read more: <http://www.meteorologynews.com/2011/06/09/rare-heat-burst-strikes-wichita-102-degrees-at-midnight/>

Fact-finding: List three facts that you learned in this article.

1.

2.

3.

Vocabulary: List and define three unfamiliar words in the space below.

Implications: What are your feelings about this “discovery”? Express your feelings (tactfully) about whether this is an advancement of science or a bad idea.

Rare Heat Burst Strikes Wichita: 102 Degrees at Midnight

(METEOROLOGYNEWS.COM) A rare heat burst struck Wichita, Kansas overnight, resulting in temperatures spiking to over 100 degrees long after the sun had set for the evening.

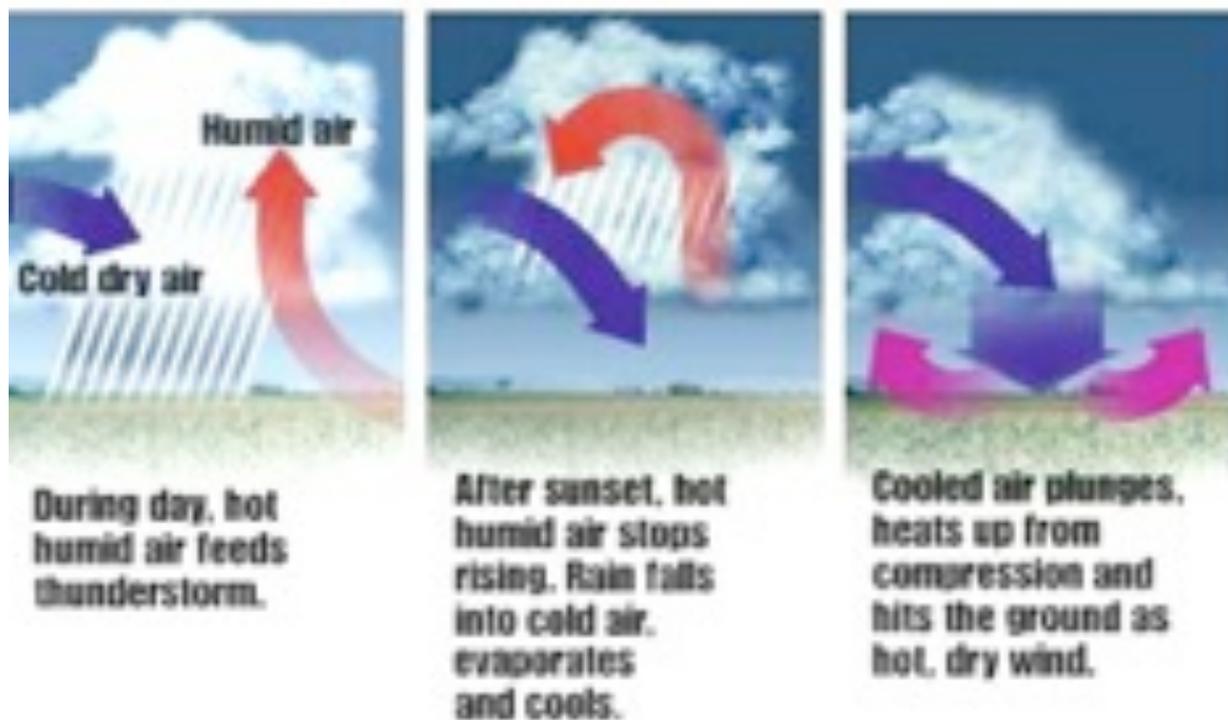
The automated weather station at the Wichita airport registered a jump from 85 degrees to 102 degrees in a span of just 20 minutes, according to Stephanie Dunten, a meteorologist with the National Weather Service in Wichita.

The surge in temperatures began at 11:22 p.m. CST (12:22am CDT) when a pocket of air in the upper atmosphere collapsed to the surface, Dunten said. That sent winds of more than 50 miles an hour through portions of the city as the air hit the ground and spread out. According to KAKE-TV, Sedgwick County 911 dispatchers received calls of trees and power lines down. The wind gust set off several alarm systems in the city. Additionally, a middle school in the city lost most of the roof over its auditorium.

At one point, Westar reported more than 4,000 customers in the Wichita area without power.

The dynamics of a heat burst are surprisingly basic, though they aren't observed very frequently – perhaps in part because their impacts are not widely felt: they traditionally strike a relatively small area. Heat bursts generally originate from a collapsing thunderstorm. As rain falls through the atmosphere at high elevations, it cools the air beneath it as it evaporates into the air. When this air cools dramatically, it becomes much more dense than the surrounding air, losing its buoyancy. This air then begins plummeting to the surface. As the air descends through the atmosphere, it encounters greater atmospheric pressure. This increase in pressure compresses the air molecules quickly, resulting in a spike in the temperature.

The crashing of the air to the surface also results in a dramatic increase in observed wind speeds as the air spreads out in all directions from the point at which it hit the ground.



As a result, the automated station at the airport registered a high temperature of 102 degrees at 11:42 p.m. CST.

Two years ago, a similarly dramatic [heat burst struck Oklahoma City](#), resulting in temperatures spiking to 90 degrees after midnight on May 13, 2009. Wind speeds topped 55 mph, resulting in widespread damage was widespread with small trees and limbs reported down throughout the city.

Heat bursts have been observed in other Plains states in recent years. [Kearney, Nebraska](#) was impacted by a heat burst in on June 20, 2006 when the temperature went from 70 to 93 in minutes overnight and wind speeds topped 60 miles per hour.

More recently, on August 3rd, 2008, a heat burst in [Sioux Falls, SD](#) forced air downward in such a dramatic fashion that the wind speeds over 50 miles per hour and the temperature jumped from 70 to 101 in less than 20 minutes.