



TEACHER  
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SCHOOL  
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LOCATION  
**Menomonie, WI**



## ANALYZING ATMOSPHERIC CONDITIONS USING WEATHER BALLOON DATA

### LESSON MATERIALS

- Weather balloon data
- Colored pencils
- Paper

### INTENDED STUDENTS

Middle school students

### DESCRIPTION

This is a lesson plan built around teaching students about weather balloons and having them graph the data they gather.

### LESSON INSTRUCTIONS

- Give students data from a recently flown weather balloon
- Have students graph the information using different colors to represent different forms of data (i.e. temperature, humidity, air pressure)
- Have students answer the following conclusion questions:
  - What happens to temperatures in the atmosphere as you increase in altitude?
  - What happens to Relative Humidity with increases in altitude?
  - What happens to air pressure as altitude increases?
  - The highest peaks in the USA are approximately 9,000 meters. What was the air temperature this morning at that height?
  - Clouds form at altitudes where the R.H. is approx. 100%. At which altitudes might clouds have been present today?
  - Large passenger Airliners fly at altitudes of 12,000 meters or more. What is the air temp and air pressure at this height over (select a city)?
  - The Jet Stream is a high-altitude wind where speeds of 75 knots are common. Is there any evidence which suggests the Jet Stream was over (select a city)?



*An interesting approach to teaching students about meteorological data through observing metrics produced by weather balloons and tying the question to relatable topics.*



**Mark Hoekzema | Contest Judge**