

Role of Pressure in Wind

WEATHER
Senior High School
Earth Science

Using your knowledge of pressure in *balloons* and differences in pressure at various *depths in a swimming pool*, answer the following questions by relating those concepts to weather. Use your Earth Science book to help you understand the "Roles of Pressure in Wind".

Answer the following questions with complete sentences:

1. Define *Air Pressure*. (see pg 532)
2. Is air pressure the same everywhere on Earth? Explain. (Read pg 537-539)
3. Define *density*. (Read pg 53)
4. The density of air determines the amount of force (pressure) it will put on the surface of the Earth. The density of air changes (which means the *Air Pressure* also changes) due to a couple of factors. Explain 2 factors that affect the density (or air pressure) of air. (Read pg 534)
5. Define *barometer*. (Read pg 533)
6. Explain how a "simple" barometer works and draw a picture to reinforce your explanation. (See pg 533)
7. What kind of weather typically accompanies HIGH pressure cells? LOW pressure cells? (See pg 538-539)
8. Barometers tell us how much pressure the air is exerting on the surface of the Earth, this translates into Air Pressure. How are barometers used to help forecast the weather? Explain. (Use the knowledge you learned in the previous questions to answer this)
9. Explain what is the main energy source for all energy on Earth? It also creates areas that are hotter than others which creates differences in pressure around the earth's surface. These differences in pressure cause wind which moves weather across the earth. (*Hint: the Sun is the main source of energy on Earth. It heats the Earth but some parts heat up at different rates. These differences in temperature create areas of high and low pressure. Wind moves between areas of high and low pressure. This wind moves weather across the earth! So, the sun is the main driving force of our weather.*)

10. Today we have very cloudy skies and rain and the Barometric Pressure is Low. The forecast shows that we have High Pressure moving our way. The High Pressure air should be here tomorrow.

According to the evidence, explain what the weather will be like tomorrow (compared to today)? How do you know?