



	<h2>Air Pressure, Station Models, &amp; Wind</h2> <p>Lab Exercises 11 and 12</p>

	<h2>Air Pressure</h2>
	<ul style="list-style-type: none"> <li>■ Force exerted by the atmosphere on a surface <ul style="list-style-type: none"> <li>- Force is exerted in all directions</li> </ul> </li> <li>■ Measured in millibars &amp; inches of mercury</li> <li>■ Isobars are lines on a map that connect points of equal pressure</li> </ul>

	<h2>Factors that influence air pressure?</h2>
	<ul style="list-style-type: none"> <li>■ Generalizations that can be made - <ul style="list-style-type: none"> <li>- Warm surface conditions produce low pressure near the surface <ul style="list-style-type: none"> <li>■ This is because warm air is buoyant &amp; light, it has a tendency to rise, causing surface pressure to fall</li> </ul> </li> <li>- Cold surface conditions produce high pressure near the surface <ul style="list-style-type: none"> <li>■ This is because cold air is heavy &amp; dense, it has a tendency to sink, causing surface pressure to rise</li> </ul> </li> </ul> </li> </ul> <p>Air moves from high pressure to low pressure</p>

	<h2>Station Model</h2>
	<ul style="list-style-type: none"> <li>■ Used on weather maps to give current conditions at a particular location <ul style="list-style-type: none"> <li>- Abbreviated way of showing a lot of weather information for a city</li> </ul> </li> <li>■ When plotted on a map give us a good idea of changing weather variables over an area</li> </ul>

	<p>Temperature is in the upper left of the circle</p> <ul style="list-style-type: none"> <li>•Units are not included</li> </ul>
	
	<p>Pressure is in the upper right of the circle</p> <ul style="list-style-type: none"> <li>•Number is abbreviated in order to save space</li> <li>•The first 9 or 10 is left off and decimal point is removed</li> </ul>

	<h2>How to decode the pressure reading on a station model</h2>
	<ul style="list-style-type: none"> <li>•Add the decimal point <ul style="list-style-type: none"> <li>•98.7</li> </ul> </li> <li>•Decide if you need to add a "10" or a "9" <ul style="list-style-type: none"> <li>•If the station model pressure value starts with a 0, 1, 2, 3, 4, 5 then add "10"</li> <li>•If the station model pressure value starts with a 7, 8, 9 then add a "9"</li> </ul> </li> </ul>
	

What is the temperature? <b>56° F</b>	What is the temperature? <b>96° F</b>
What is the pressure? <b>989.5 mb</b>	What is the pressure? <b>1003.2 mb</b>

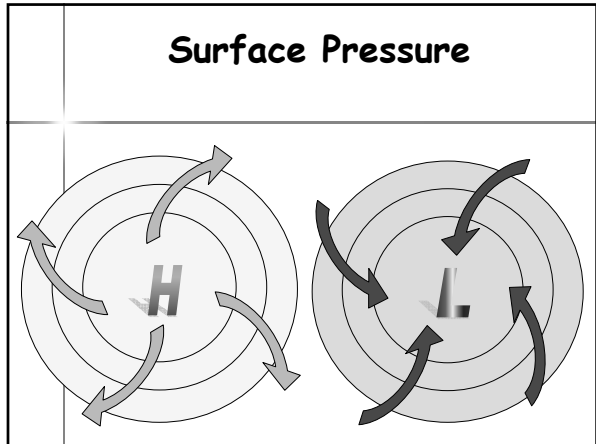
	<h2>Wind</h2>
<ul style="list-style-type: none"> <li>■ Air moves when there is a difference in pressure from one location to another <ul style="list-style-type: none"> <li>- This is called pressure gradient</li> </ul> </li> <li>■ Pressure gradient force is what initially causes wind to blow <ul style="list-style-type: none"> <li>- Air flows from high pressure to low pressure</li> </ul> </li> </ul>	

	<h2>Wind Circulation in Northern Hemisphere</h2>
<ul style="list-style-type: none"> <li>■ High Pressure <ul style="list-style-type: none"> <li>- Wind circulates clockwise around a high in NH <ul style="list-style-type: none"> <li>■ Anticyclone</li> </ul> </li> </ul> </li> <li>■ Low Pressure <ul style="list-style-type: none"> <li>- Wind circulates counter-clockwise around a low in NH <ul style="list-style-type: none"> <li>■ Cyclone</li> </ul> </li> </ul> </li> </ul>	

	<h2>Wind Direction</h2>
<ul style="list-style-type: none"> <li>■ Upper Atmosphere <ul style="list-style-type: none"> <li>- Coriolis effect &amp; PGF (pressure gradient force)</li> <li>- Wind blows parallel to the isobars</li> </ul> </li> </ul>	

	<h2>Upper Elevation Pressure</h2>

	<h2>Wind Direction (cont.)</h2>
<ul style="list-style-type: none"> <li>■ Lower atmosphere &amp; surface <ul style="list-style-type: none"> <li>■ Coriolis Effect, PGF &amp; Friction</li> <li>■ Causes a turning of the wind at &amp; near the surface</li> <li>■ Wind crosses the isobars</li> </ul> </li> </ul>	



### How to understand wind direction and speed on a station model

The wind barb on a station model points into the wind

What is the direction of the wind? ████████

Each "feather" on the wind plot equals 10 knots

What is the speed of the wind? ████████

### What is the wind speed & direction?