

Construction of Handheld Pressure Systems

Be extremely cautious while handling scissors, especially while creating the cut into the water bottle

You have just finished the handout, “Weather Across the Country”, and completed an investigation on high and low pressure areas around the country. Complete the summary table below.

Characteristic	High Pressure	Low Pressure
Type of weather (sunny or unsettled)		
Direction of rotation (Clockwise or counter-clockwise)		
Description of vertical air movement (rising warm, moist air or descending dry, cool air)		

To better visualize what happens to the air at the surface as the system rotates you will construct handheld manipulatives. Be careful with scissors and ask for help if needed.

Step 1:



Obtain two plastic water bottles with caps and a pair of scissors.

Step 2:



Carefully cut the tops off of the water bottles. Discard the bottom portions and keep the top pieces with the caps. Make small cuts/slits as pictured.

Step 3:



With a marker, draw a low pressure “L” on one cap and insert the counter-clockwise arrows. Begin with the bottle pressed against the table so it spreads flat. Low pressure air rises, so slowly lift the bottle off the table and turn counter-clockwise until the bottle stands up relaxed.

What happens to the bottle as you lift it? Does it spread out (divergent) or does it come inwards (convergent)?

Step 4:



With a marker, draw a high pressure “H” on the second water bottle/cap and insert the clockwise arrows. Begin with the bottle standing relaxed on the table. High pressure air sinks, so push downwards while rotating clockwise until the bottle is flattened against the table.

What happens to the bottle as you press downwards? Does it spread out (divergent) or does it come inwards (convergent)?

With this new information, fill-in one more characteristic about each system in the table below.

Characteristic	High Pressure	Low Pressure
Description of air movement horizontally along the ground (divergent or convergent)		