

Fronts & Systems

This activity is designed to show how we find high pressure and low pressure systems, and fronts. I'm attaching the file "IsobarsAndFronts" which has the transparencies provided as the first four pages. The last two pages include some additional questions you could ask if kids are particularly interested, and a comparison front picture.

Supplies:

- Transparency markers
- Transparency overlays (x 2) 4 pages, bound together with clips
- Laminated sheet of actual fronts (x 2)
- Couple sheets of paper
- Kleenex / paper towels
- water source to help wipe off (bottle of water or something is probably fine)

Procedure: Flip over transparencies consecutively

Transparency 1, draw the isobars. It can be helpful to point out the 1024 that is highlighted as a good place to start. This surrounds the "high" in the image. The 1008 toward the right side surrounds the "low". These pressures are in millibars, could talk about other measurements (inches of Hg, bar, etc). Have them label H and L in blue and red.

Transparency 2, on top of Transparency 1, shade in some rain over the low

Transparency 3, place a blank paper in between transparency 2 and 3 so it's not confusing. This one similar to the isobars, draw contours for the isallobars (constant *change* in pressure). I find that people in general have a hard time understanding the difference between a quantity (e.g. pressure) and a *change* in that quantity. This might be something to ask them about or talk about a little. Label the cold front and the warm front. You can teach the appropriate symbols if you like.



weather codes from aviationweather.gov

I will also have a printout of a few surface level prog charts so one can talk about how you'd forecast what the weather might be for a day you want to fly based on the pressure systems.

Transparency 4: I'm not 100% sure this one will work but can draw on some isotherms (constant temperature) and then flip transparency 1 onto it to see if there's a relationship to the pressures & fronts. Generally should see that pressure is higher for lower temperatures, and that the temperatures are different on opposite sides of the fronts. *This one requires some interpolation between lines: have them do the obvious ones first and then squeeze the interpolations between those lines.*