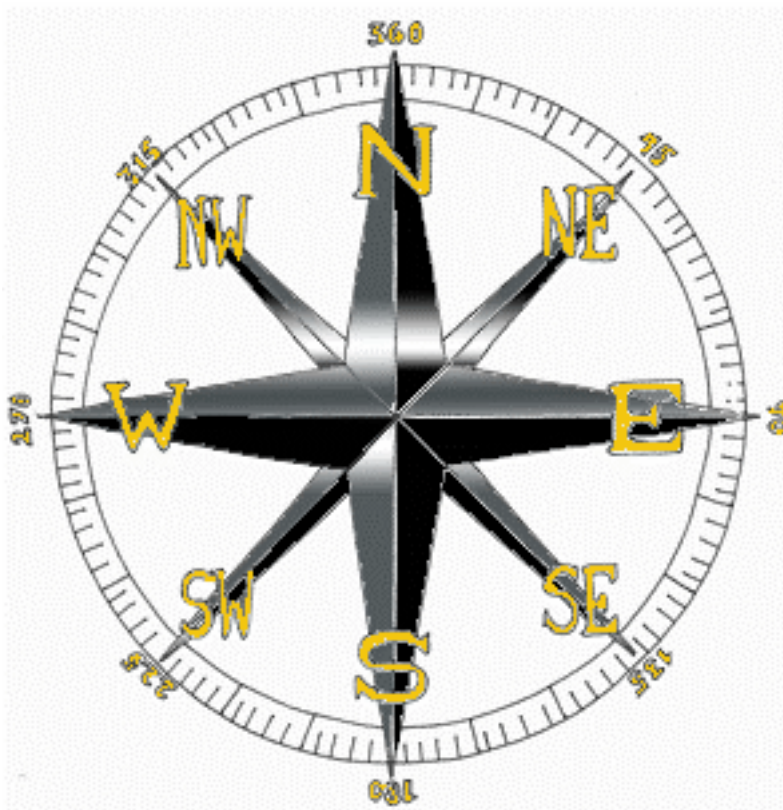


Step 3: Outside Influences

C.1) Understanding Wind Direction: From an Oceanographer's Point of View

Scientists use both numbers and letters on a compass to measure wind direction. On the compass below the letter N stands for North, S stands for South, E stands for East, and W stands for West. In order to be more specific, the letters NE are used for Northeast, SE for southeast, SW for Southwest and NW for Northwest. You can also see that the compass is divided into 360 degrees around the circle. The North position equals zero, and the degrees increase as you move around the compass clockwise until you reach 360 degrees back at the North position.



Scientists at the COOLroom use this basic information to name winds. Winds can be named either from the direction that they are blowing **from**, or the direction that they are blowing **towards**. COOLroom scientists name winds based on the direction the wind is coming **from**. So, if someone in the COOLroom says that there is a Southwest wind blowing, they mean that the

wind is coming **from** that direction. So, a Southwest wind comes **from** the Southwest, and is moving **towards** the Northeast. If you want to use degrees instead, a Southwest wind direction equals 225 degrees. So, in the COOLroom, a wind direction of 225 degrees means that the wind is coming **from** the 225 degree position of the compass, and is moving **towards** the opposite direction, or 180 degrees away. If you subtract 180 from 225, you are left with 45 degrees ($225 - 180 = 45$). So, a wind coming **from** 225 degrees is moving **towards** the 45 degree position.

Let's look at some examples:

1. The COOLroom reports that the direction the wind is coming **from** is 50 degrees. This measurement is less than 180 degrees, so we need to **add** 180 degrees to determine the direction that the wind is moving **towards**. If we do the math, $50 + 180 = 230$ degrees. This means that the wind is moving **towards** 230 degrees, which is approximately Southwest on the compass.



2. The COOLroom reports that the direction the wind is coming **from** is 300 degrees. This measurement is more than 180 degrees, so we need to **subtract** 180 degrees to determine the direction that the wind is moving **towards**. If we do the math, $300 - 180 = 120$ degrees. This means that the wind is moving **towards** 120 degrees, which is between East and Southeast on the compass.



Are you confused? Just remember that the graphed wind direction is calculated in the COOLroom by adding or subtracting 180 degrees to the measured wind direction. **If the measured wind direction is 180 degrees or less, add 180 degrees to the measurement. If the measured wind direction is 180 degrees or more, subtract 180 degrees from the measurement.**