

## Make a Wind Sock/Build an Anemometer – Map Extension Activity

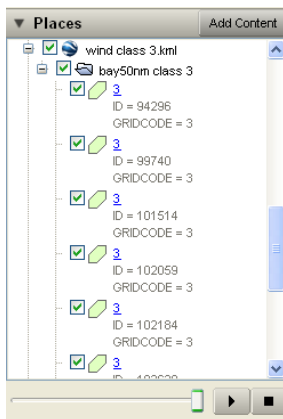
### Objectives:

- Investigate the US wind resource map
- Use wind data to identify good locations for wind farms

1) Open Google Earth








### Adding Wind Class Data

- From the Alternative Energy Educational Resources website (aeer.cisat.jmu.edu), go to the Mapping Data page and download the Wind Class Google Earth files (wind class 3.kml, wind class 4.kml, wind class 5.kml and wind class 6.kml).
- Save these files to your computer.
- Go to File/Open and select one (or all) of the wind class files that you saved. Google Earth will add the data and zoom to its location. The data layer name will appear on the list to the left, under Places/Temporary Places.
- Note that this data is only for the waters off of Virginia.
- Remember that you can un-click the box next to the data layer name on the menu to the left to turn off a layer.
- You will want to turn off and on the wind class layers to understand which color/area corresponds to which wind class.
- You can also expand all the files below each data layer name to see what color the area is being represented by



### Interpreting the Wind Map

9) See the table below to understand better what each Wind Class means in terms of sustained wind speeds:

Wind Power Classification				
Wind Power Class	Resource Potential	Wind Power Density at 50 m W/m <sup>2</sup>	Wind Speed <sup>a</sup> at 50 m m/s	Wind Speed <sup>a</sup> at 50 m mph
	1 Poor	0 - 200	0.0 - 5.6	0.0 - 12.5
	2 Marginal	200 - 300	5.6 - 6.4	12.5 - 14.3
	3 Fair	300 - 400	6.4 - 7.0	14.3 - 15.7
	4 Good	400 - 500	7.0 - 7.5	15.7 - 16.8
	5 Excellent	500 - 600	7.5 - 8.0	16.8 - 17.9
	6 Outstanding	600 - 800	8.0 - 8.8	17.9 - 19.7
	7 Superb	> 800	> 8.8	> 19.7

<sup>a</sup> Wind speeds are based on a Weibull k value of 2.0

