Atmosphere and the Ocean Transcription

We've already talked about the atmosphere. This is the unit prior to oceanography. It is this envelope of gas that has a lot of nitrogen and oxygen in it. It's also a place where man is putting in carbon dioxide; the kids tend to understand that. The students are going to explore weather, pressure patterns, and changes in the atmosphere over time. Again it's a dynamic system.

Two of the biggest concepts that we explain to the kids right off in weather is the fact that the earth gets heated differentially because we have direct rays at the equator, and less direct rays as we head toward the poles, so we're going to have a very hot equator and cooler poles, and this is going to set-up what we call gradients. That's a new term for them. They don't really know what a gradient is. So the earth is going to try to equilibrate these different temperature gradients by various means.

One of those means is setting up global wind patterns. The different temperatures setup different pressures. We're going to have these global winds which are often going to be connected to the ocean. One of the things we try to show is how the atmosphere and the ocean are interconnected. So we spend a fair amount of time talking about these global wind patterns.

During the atmosphere segment we're going to talk about pressure. Pressure is something that's hard to see. The more we can use these labs to help them see this, the better they're going to be. Pressure can be measured in all different ways. There's pounds per square inch, inches of mercury, atmospheric bars and so on and so forth. One of the things we also have them learn is being part of the scientific process is recognizing patterns. What scientists love to do is get all kinds of numbers, and put them on a map, and then find patterns to them.

Probably the first three weeks of school we actually have them go out and collect elevation data, and they make a contour map. They can actually understand this map. Here's high pressure, here's low pressure, and that the winds are going to flow from high pressure to low pressure, and start making interpretations of what certain weather systems are going to look like. This is the way we have them being able to recognize patterns in the numbers they are going to collect.