THE SUN: LIGHTS, WAVES, AND RAYS

SUN SAFETY FOR ALL

PART 1

Read the passage below and then identify at least one new fact that you learn. Write the fact on the back of this sheet.

*In the sun's core, nuclear fusion creates heat and light energy that moves from the sun's core to the surface where it spreads through space as **radiation**. This energy is important to life on Earth. It is the energy that enables us to grow food, which provides energy for our bodies. It is also the energy, converted to electricity, that we use to power everything from cars to digital devices. Plus, the sun's energy provides light.*

*The sun's energy consists of different kinds of radiation that form what we call the **electromagnetic spectrum**. Each kind of radiation on this spectrum has a different wavelength, from low frequency waves like radio waves to high frequency waves like X-rays. Low frequency waves are mostly harmless to humans, but high frequency waves can be harmful. Luckily for us, Earth's atmosphere blocks most high frequency waves, but the atmosphere does not block certain **ultraviolet (UV) rays**, which can cause harm.*

*Two types of harmful UV rays reach Earth — **UVA rays** (called aging rays) and **UVB rays** (called burning rays). Both types cause skin damage. In fact, just one blistering sunburn in childhood or adolescence can more than double the chance of developing melanoma, a serious skin cancer, later in life. And it's not just people with lighter skin that face this risk. Whatever your skin tone, UV rays can cause skin damage.*

*To help protect ourselves from harmful UV rays, it's important to practice **sun safety** like wearing sunscreen that is broad spectrum (UVA + UVB protection) and at least SPF 30, sunglasses, hats, and protective clothing, and limiting our time in the sun all year and in all weather, not just on sunny days.*

SPF stands for Sun Protection Factor, which measures how well the sunscreen can protect us from sunburn. The SPF number tells how much UVB light the sunscreen can block from our skin. It is based on how much longer it takes skin to start to burn without sunscreen. It is not related to how much time you can spend in the sun. The SPF number should be 30 or higher. Sunscreen can't protect us 100% from the sun's UV rays. That's why we need to take additional steps to help protect our skin.

PART 2

The UV Index tracks the ultraviolet ray level of the sun. It uses a scale of 1 to 11+ to predict how strong the UV rays will be each day and is a great tool for being sun smart. Visit **enviro.epa.gov/envirofacts/uv/search** to find the UV Index for your zip code and record it in the chart below every day for a week, along with the Sun Protection Message for each day. Then use the National Weather Service at **weather.gov** to record data on atmospheric conditions and temperature for each day.

At the end of the week, analyze your data to look for trends and patterns. Then write a summary. For example, do atmospheric conditions always align with index figures? Why or why not? If there is cloud coverage, how much UV exposure is still present?

Sun Safety Factor/Date					
• UV Index					
• Index Sun Protection Message					
• Atmospheric conditions					
• High Temperature (C/F)					
• Low Temperature (C/F)					