# Why does an astronaut need a spacesuit?

### "A Discussion Before the Activity"

To introduce this topic you might begin by discussing the day's weather and asking students what particular items of clothing were worn today or carried as a result of the weather. Next you might show several photos of children living in other climates and ask what articles of clothing they are wearing or carrying and why. For example, if a child is in Canada during winter they might be wearing a heavy coat, hat, and mittens to protect them from the cold temperatures. Another child living in Seattle during the rainy season might be wearing a raincoat, rain hat, goulashes, and carrying an umbrella to protect them from the rain. You can expand this discussion by asking your students what a person would need to wear to explore the top of the highest mountains, or the depths of the ocean.

During this encourage students to list the things we need to maintain our life…adequate oxygen, temperatures, and pressure. You could also include some physical hazards a diver might encounter or a mountain climber. Then ask what they wear or carry with them to protect from these hazards. A side discussion could include what protective gear students wear when playing baseball or football.

Expand on this to examine the hazards an astronaut would encounter in exploring space. Tell students to pretend they are an astronaut busy doing a spacewalk. Ask them to think about what they would need to stay safe while doing their job. Remind your students of the list they made earlier showing what humans require to maintain life.

**Why does an astronaut need a space suit?** The answer of course is to maintain an adequate body temperature, provide a source of

oxygen, create a workable pressure inside the suit, and protect the astronaut from micrometeoroids and space debris.

In addition to the above, the space suit also provides a source of drinking water and a radio communication system between the astronaut and the orbiter. Also, it carries instrumentation equipment to measure and send biomedical information to the orbiter and to flight surgeons at Mission Control.

Hint: UL_Outreach@mail.arc.nasa.gov has a great poster! Another recommended site would be: http://weboflife.arc.nasa.gov/