Creep into the DEEPEND

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# SEAMAIL™

FROM: DEEPEND Science Team
TO: DEEPEND Virtual Team Leaders
SUBJECT: Pressure!

Hello Virtual Science Team,
Each of our Virtual Science Teams received a special DEEPEND cup. You might wonder why or how the cup got squished. It started as a regular size cup, the size cup you might drink hot chocolate from at an ice rink or softball game.

That cup took a trip to the deep with MOCNESS down to about 5,000 feet (1,500 m) and survived! Could you survive outside a submersible at that depth? Why or why not?

On its way down and back up, the cup passed amazing animals. It also passed through a variety blues as the colors of the rainbow disappeared and the light from the sun got weaker and weaker. The photo shows how the ocean color changed as the cup sank to the deep with a MOCNESS trawl. (*If you haven't seen it, this excellent video discusses how color and light change in the sea.)

As color and light changed then disappeared, the cup also felt the increased pressure – the weight – of the ocean. The weight of the water presses in from all sides. Just how deadly is water pressure in the deep sea?

Every 33 feet (10.06 meters) the cups sank the pressure on them increased by 14.5 pounds per square inch (psi). Since the cup went down almost 5,000 ft (1,500 m), how many pounds of pressure did it feel at that depth? (Since it's an algebraic problem and you might not be doing those yet, here's an easy link to a special calculator to do the math: http://www.calctool.org/CALC/other/games/depth_press)

How many pounds per square inch did your cup feel – or should I say survive?

If you took a submersible to the deepest part of the ocean, the pressure is immense. In just one square inch, the submersible would feel the weight of an adult elephant. Can you come up with a similar comparison for your cup and the depth it went?

Though you and I could not survive that pressure, the animals that live in the deep are adapted for it. I have a question for you. Why do you think understanding ocean pressure is important for our researchers or any scientist studying the deep?

*Jake, the SeaDog*

Jake, the SeaDog
WhaleTimes, DEEPEND Team, and Deep-Sea Explorer
seamail@whaletimes.org
Creep into the DEEPEND Mission

DEEPEND
DEEP PELAGIC NEKTON DYNAMICS OF THE GULF OF MEXICO


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