

Experiment Helps Children See Infrared Spectrum

By Randy Siniard, AMRDEC Public Affairs

Redstone Arsenal, Ala. (Oct. 1, 2010) -- The students at Mountain Gap Elementary School weren't just thinking about what they were going to be doing on the weekend since this was Friday, Oct. 1. They were having a Science Day.

The Aviation and Missile Research Development and Engineering Center had a display headed by Dr. Amy Grover, chief, Manufacturing S&T Division, Engineering Directorate. The display was an infrared camera hooked up to a television and an overhead projector which projected an infrared image onto two screens and the television.

The first children who came through the display area were from the second-grade and they reacted much like you would expect children to do when presented with something exciting and new. There were screams and adulation.

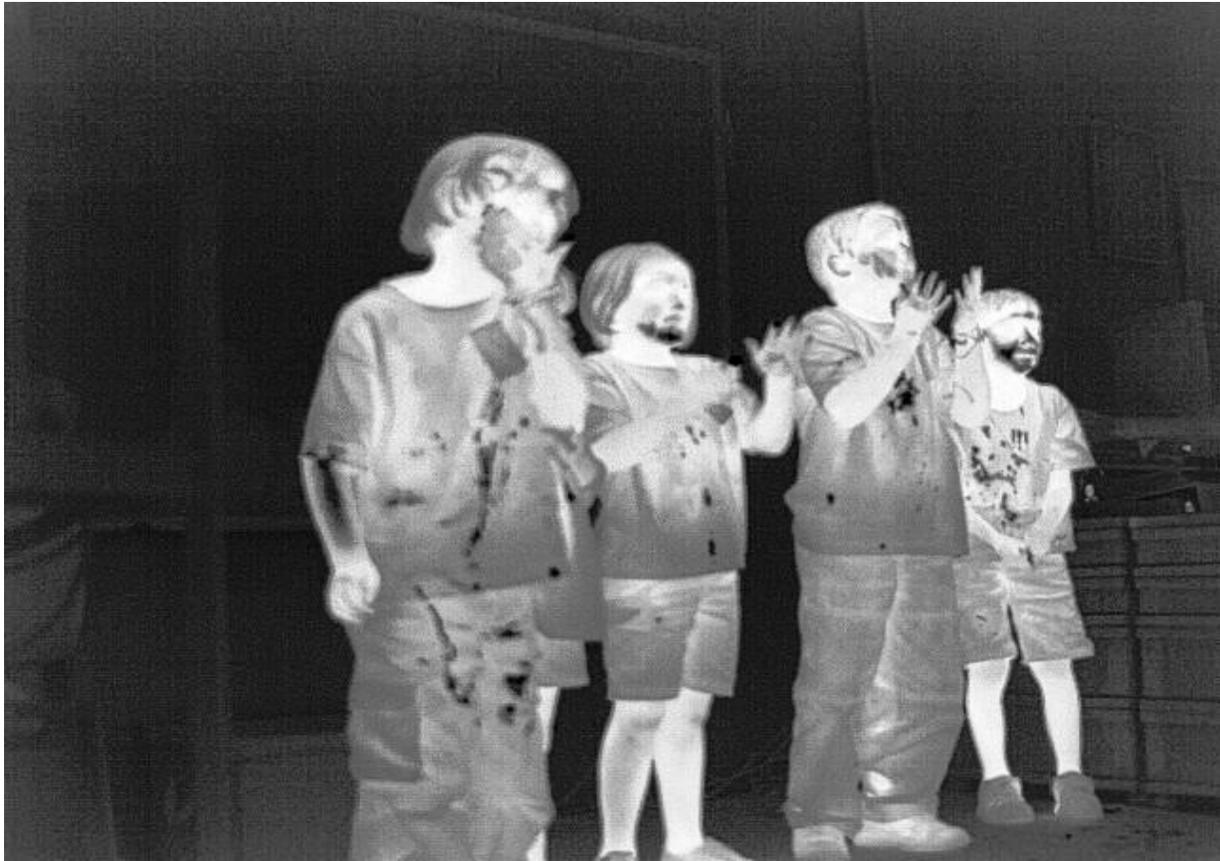
The teachers in the room clapped their hands two times, which garnered the children's attention, then three times which the children did as well and they quieted down paying complete attention.

Grover introduced Alex Palmer, an electrical engineering co-op student from Auburn University, who works as an engineering aide in the Infrared and Optical Technology Division, Weapons Development and Integration Directorate, AMRDEC.

Palmer told the students about how the human eye is only capable of viewing a very small set of wavelengths of energy, known as the visible spectrum. Next he explained that infrared camera "sees" outside that spectrum. It was at this point that he turned on the camera and



CLASSROOM-- Aviation and Missile Research Development and Engineering Center sponsored a booth at the Mountain Gap Elementary School's Science Day on Oct. 1. Alex Palmer, engineering aide in the Infrared and Optical Technology Division of the Weapons Development and Integration Directorate of AMRDEC, is joined by Dr. Amy Grover, chief of Manufacturing S&T Division, and Bob Gibbs, senior project engineer in Engineering Support Division, Engineering Directorate, as the students ponder Palmer's question on how they think the infrared camera can be used. US Army Photograph.



INFRARED IMAGE-- Mountain Gap Elementary School children participate in an experiment to learn how the infrared camera cannot “see” the cold, which was represented by dark gray to black spots, on the faces and clothing. US Army Photograph.

showed the children the image.

The first thing that happened, of course, was the children were excited and their hands went in the air flailing above their heads as if they were on a roller coaster making its first descent down the track.

Palmer had the teachers pick four children to participate in an experiment using ice. This experiment would show the children how the camera couldn't “see” the cold.

The children rubbed the ice on their skin and hair to show that the infrared camera saw cold areas as voids represented by black spots. This demonstrated that only heat was registered on the camera in the gray to brilliant white image that was displayed.

After the experiment Palmer asked the children how did they think an infrared camera could be used? The children thought for a minute before answering.

One little boy answered the police would use it to see in the dark.

A little girl said that the military used it to see tanks.

One child said a fireman could see people in a building after the fire was out.

Obviously they understood it was used to see heat.

Palmer had taught these second-graders about the infrared spectrum. Now for the kindergarteners!