

Introduction to Microbiology: Discovering the World of Cells and Micro Organisms Using High Quality Microscopes

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As part of the GEMS award, Hickam Elementary School received a Motic SMZ 140 Stereomicroscope, Moticam 1 Camera, an OM88 Compound Microscope, a Summit Digital Microscope Camera, two boxes of Celestron Prepared Slides and other items to prepare our own slides. These items have been used as part of our Gifted and Talented program to explore a world beyond the unaided eye.

The students have learned how to properly handle microscopes and prepare their own slides. With the compound microscope and Celestron slides they have used varying magnifications to observe, compare and contrast plant and animal samples. The students have used the Summit camera to capture images and add them to their Fresh Grade digital portfolio. They were then able to create their own cell models based on these cell images. The students also studied photosynthesis and decomposers. They were able to observe living fungi using the compound and stereo microscopes.

Using the Motic stereomicroscope, the students have been able to get a three-dimensional view of coral samples and sand samples from around the Hawaiian Islands. They studied coral and the role it plays in our marine ecosystem. They learned about the negative impact of debris to marine life. To make a greater connection to microbial oceanography, the students learned the difference between zooplankton and phytoplankton. They discovered that phytoplankton provides 50% or more of the oxygen in Earth's atmosphere and that it is the basis of the marine food web.

The GT students at Hickam have enjoyed this project so much that we are providing our school wide STEM classes with access to the microscopes so they can learn more about microscopic organisms. We are grateful for this opportunity and the microscopes and cameras.

