DOWNLOAD PDF MICROMONSTERS: LIFE UNDER THE MICROSCOPE

Chapter 1 : Accelerated Reader Bookfinder US - Book Detail

Christopher Maynard is an editor and author with more than 50 books under his belt. He is the winner of the RhÃ´ne-Poulenc Prize for Junior Science Book of the Year, and has been the runner-up for the TES Senior Information Book Award.

Box Moab, Utah Phone: Box , Rochester, NY Phone: E Background for Teachers Microorganisms thrive in every ecosystem on Earth. They range in complexity from simple to multi-cellular organisms. Microorganisms require food, water, air, ways to dispose of waste and an environment to thrive in. There is an abundance and variety of microscopic life found in pond water, even frozen pond water and geysers. A healthy pond may have from to 1, different species of microscopic organisms. These organisms are essential to the balance of the pond ecosystem. Pond water is an excellent place to investigate single cells that behave as independent organisms. These organisms seem relatively unchanged from ancient times. Yet, the environment of a pond is ever-changing and no two ponds are ever exactly alike. Some major types of organisms found in ponds are algae, amoebas, and paramecium. Some students struggle to find these microorganisms in pond water. It is highly advisable to view your samples of pond water prior to the class. Pond water can be collected all year, but be sure to include soil, pond scum, and small plants to insure success. Iodine makes the microorganisms easier to identify. Within a cell, sugar is changed by a chemical process into starch. Dilute iodine stains the starch to a blue-black color. Intended Learning Outcomes 1. Use Science Process and Thinking Skills. Instructional Procedures Invitation to Learn Place a small amount of Glo-Germ on your hands and shake the hands of every student in the class as they enter. Pass out a small amount to each student and have them rub it their hands e. When was the last time you washed your hands? What have you done since the last time? Have the students conduct a quick pair share conversation about hand washing for two minutes. Then, ask the class to share whole class some ideas. Finally, pass around the ultraviolet light. Have the students look at your hands on what to their hands to see how germs were spread by simply shaking hands. Glo-Germ Products are made of tiny plastic particles that are only visible under an ultraviolet light. Have the students think about what would remove more of the powder and what would be the most effective procedure for washing hands. How much time is needed for effective hand washing? How hand washing affects microbes? Can the microbes on your hands have a serious effect on your personal health? How will your hand washing habits change? Hand washing is the easiest way to prevent the spread of diseases and infections. There are millions of microbes on your hands. Many are harmless, but some are disease causing. Hand washing with plain soaps suspends the microbes and allows them to be rinsed off. Antibacterial soaps inhibit the growth of microbes. Many studies have found that washing hands with soap and vigorous rubbing for as long as it takes you to sing Happy Birthday is the very effective in removing harmful bacteria. Instructional Procedures Two to three days prior to the lesson: Collect water from a pond in a wide-mouthed glass jar. Scoop up the scum and algae on top of the water. To insure success include a small bit of Microlife Mix Culture. It is a specially formulated mixture that contains a variety of microhabitat materials, including bacteria and nutrients to support microlife growth. It will help grow bacteria and other single-celled organisms in 24 hours and larger microinvertebrates will appear within a week. The Microlife Mix Culture can be safely stored for years without special handing. Borrow or check out microscopes for your class from your school or district media center. It is optimal for each pair of students to have a microscope. It works best to have the student move the desks into groups of four and organize materials prior to beginning the lesson. This will lessen the chances of pond water being spilled or microscopes being knocked over. Pass out Once Upon a Pond Worksheet 1. Discuss what the worksheet is asking the students to do. Use the prepared worksheets or have the students record in their science journals. Use the Worksheets as guidelines to what needs to be in the science journal. Make the worksheets into overheads. Some students do better with freedom to express their findings. After working for two minutes by themselves, stop them and ask for a table discussion about what is in the pond water. Give them two minutes to discuss as a group. Then, have the students resume working individually or in partners whatever is your comfort level. Give the students five to seven minutes to complete the activity worksheet,

Once Upon a Pond Worksheet 1. Have a short class discussion about findings. Chart predictions and post. Have a short discussion and display the Utah State Standard, we are trying to achieve. Give an overview of what students will be doing and show the rubric of what is expected of the students. Review over lab rules. Model the procedure for making a wet mount slide prior to the students experimenting. Model for the students how to make a wet mound slide. Refer to Using Your Microscope: Wait until after modeling, to pass out materials or students might be distracted by materials on desk and have a hard time focusing on the discussion. Place a microscope at each group. Then, have one student gather the materials paper towels, pipettes, slides, cover slips, small container of diluted iodine, Once Upon a Pond Worksheet 2 , and a Pond Life Identification chart. It is easiest to place a note card of how many each partner group will need. This is a large portion of the lab. Each class will take varying amounts of time. Some students may become frustrated with locating microorganisms in the microscopes. It is important to be actively monitoring the students to assist as needed. Have students record their findings on Once Upon a Pond Worksheet 2 or in their science journal. Students may find cool things and want to share with other students. After ten minutes, stop the students and show them a Powerpoint presentation of varying pond organisms. They are amazing pictures on the Internet that can be used in the classroom, see references. This will help focus students on their findings. After other minutes, reconvene as a class. Have the students discuss their most interesting, weird, or important findings. Pair students in partners and have them choose a microorganism to study. The topic choices will be the major groups of organisms: They will create a mini-microorganism brochure about their organism. Give the students one week to complete the project. Read about amazing world microorganisms, see additional resources for materials. Work on descriptive writing and improve vocabulary to describe microorganisms. Create a decomposition chamber. Develop a pond ecosystem in the classroom in an aquarium, add snails and other organisms. Family Connections Bring samples of pond water, or other water found at home or with their parents to view under the microscope. Work on microorganism brochure with the family. Share with family their findings from the hand washing experiment.

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Chapter 2 : Micromonsters: Microscopic Life Up Close | Rosen Publishing

Look through the microscope at all the amazing creatures living in, on, and around you with the DK Reader Micromonsters!. Stunning photographs combine with lively illustrations and engaging, age-appropriate stories in DK Readers, a multilevel reading program guaranteed to capture children's interest.

Contact Us Katrina Edwards is a Professor of Microbiology at the University of Southern California, who teaches microbiology classes as well as geobiology classes. She also runs a research laboratory, and the projects that she does are at the bottom of the oceanic realm. What do you study? And microbes are fascinating creatures because they can do so many different things compared to what we can do. We, basically, have two functions. In contrast, microbes can do all sorts of crazy things, like eating iron and respiring nitrogen or eating carbon and respiring iron oxides. And so, studying them in an environmental context is what I do as a researcher. Can you tell us more about microbes? Well, microbes are the most ancient life form on our planet. We all evolved from microbial forms to what we are today. So, microbes are single-celled organisms. The whole tree of life is encompassed within microbiology. Microbes are amazing also because they inhabit simply every single corner of our Earth. In fact, we have a hard time defining where they are not. Where my research takes me is below the bottom of the ocean. We are still really learning about what microbes can do, but what they are really good at doing is regulating all of the biogeochemical cycles on our planet. So, the carbon cycle, for example, is completely regulated by microbial life on our planet: Microbes are the ones that are keeping the planet in its balanced form. Most microbes have good effects on human health. Those are not necessarily the best thing to be using because we need our microbes to maintain our health. Tell us about your research. So, my research takes me to the bottom of the ocean. And what I like to look at is how microbes control alteration of oceanic rocks. So, the alteration of rocks on our planets is also one of the major contributors to the biogeochemical cycles, including the iron cycle, the carbon cycle, the sulfur cycle, and just goes on and on. I like to use the analogy of dentistry. These are caused by microbes that are drilling into and eating your teeth. At the bottom of the ocean, where we have, essentially, the molars of the world exposed along mid-ocean ridges, microbes are doing the exact same thing. So, microbes are actually making material exchanges and exchanging elements at the same time. What sort of tools do you use in your work? And to do that, we actually have to use some pretty sophisticated technologies that include submersibles or manned vehicles that go down into great depths or using remotely-operated vehicles, or ROVs. And these are robots that you operate from a ship, and they go down by a long tether from the ship and explore and sample and do whatever you need to do at the oceanic floor. And so, these are amazing tools that we have available to the scientific community to address deep sea scientific questions. The world-class Monterey Bay Aquarium is a wonderful place to turn students of all ages on to oceanography. Web Sites to Visit: Science Kids has Biology for Kids section, with games and experiments to try at home. The American Society for Microbiology has lots of resources for young scientists.

Chapter 3 : [PDF] Micro Monsters Life Under The Microscope By Christopher Maynard - calendrierdelascie

Micromonsters has 28 ratings and 9 reviews. Erin said: Gross and disturbing for adults and perfect for the proficient readers of my family, the Mico Mo.

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