

Science in Real Life

Take a few minutes to discuss, with your child, different career opportunities for people who use microscopes and/or life sciences in their careers:

- Biologists
- Forensic Scientists
- Doctors, Nurses, Veterinarians
- Bioengineers
- Ecologists



Books to Read

- *Bill Nye the Science Guy's Great Big Book of Tiny Germs* ISBN: 978-0786805433
- *Pond & River: DK Eyewitness Books* ISBN: 978-0756610852
- *Pond Life: Revised and Updated (A Golden Guide)* ISBN: 978-1582381305
- *One Small Square: Pond* ISBN: 978-0070579323
- *Hidden Worlds: Looking Through a Scientist's Microscope* ISBN: 978-0618055463
- *Salamander Rain: A Lake & Pond Journal* ISBN #: 978-1584690184
- *Frogs, Toads, and Turtles* ISBN #: 978-1559715935



Web Sites



Microscopy:

- <http://micro.magnet.fsu.edu/index.html>
- <http://www.microscopy-uk.org.uk/intro/index.html>

Cells:

- <http://www.cellsalive.com/>
- <http://www.beaconlearningcenter.com/WebLessons/MixedUpCells/default.htm>

Microscopic Organisms:

- http://www.bbc.co.uk/schools/ks2bitesize/science/activities/micro_organisms.shtml
- <http://commtechlab.msu.edu/sites/dlc-me/index.html>
- http://www.funsci.com/fun3_en/protists/exhibition.htm

Genetics:

- http://www.genetics.gsk.com/kids/index_kids.htm

Family Fun

Encourage your child to ask questions about the natural world and discuss how a scientist might try to answer such questions. Take a nature walk with your child or visit any of the following places to experience hands-on science:

- National Aquarium in Baltimore
- The Maryland Zoo in Baltimore
- Franklin Institute (Philadelphia)
- Smithsonian Museum of Natural History (Washington, DC)



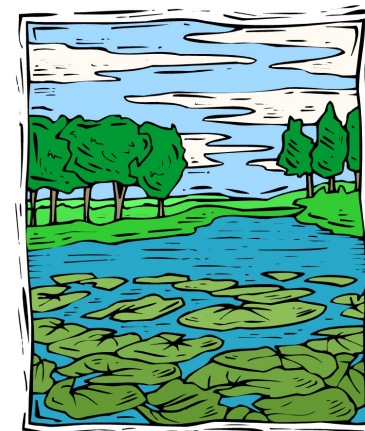
Prepared By

Office of Science, PreK-12

A Parent's Informational
Guide to the Science Unit:

WEE BEASTIES

An Inquiry into Cells via Microscopes



Grade 5



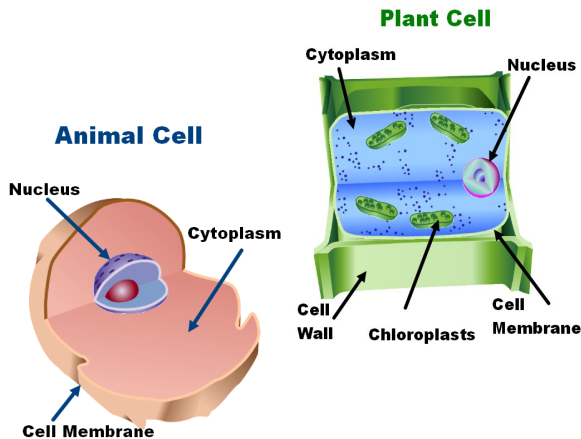
Wee Beasties

An Inquiry into Cells via Microscopes

This fifth grade unit provides students with classroom experiences using a compound microscope. They will read about a boy who visits a pond in his grandparents' backyard and takes a sample of the water back to his fifth grade science class. The boy wants to know what is inside the water, and he needs to prove to the community that the pond is safe. Through observation using a microscope, your child will learn:

- what cells are
- the tiny structures within cells
- differences among organisms
- how structures help organisms meet their needs

The unit concludes with your child learning some basic concepts of heredity.



Science Vocabulary

Encourage your child to use the vocabulary below when telling you about what s/he is learning about each day.

cell—the basic unit of structure and function of all living things

single-celled—composed of one cell

multi-cellular—composed of more than one cell

nucleus—controls the cell's activities

cytoplasm—jellylike substance containing many chemicals to keep the cell functioning

cell membrane—holds the parts of a cell together and gives the cell its shape

cell wall—a structure that keeps the cell rigid and gives support to the entire plant

chloroplasts—a structure of the plant cell that is used to make food through a process called photosynthesis

dominant trait—the stronger trait

recessive trait—the weaker trait



Standards Covered

The Maryland State Curriculum Indicators addressed in the unit are:

Constructing Knowledge: Gather and question information from many different forms of scientific investigations including observing what things are like or what is happening somewhere, collecting specimens for analysis, and doing experiments.

Applying Evidence and Reasoning: Seek better reasons for believing something other than “Everybody knows that... or “I just know...”

Communicate Scientific Information: Recognize that clear communication is an essential part of doing science because it enables scientists to inform others about their work, expose their ideas to criticism by other scientists, and stay informed about scientific discoveries around the world.

Technology: Examine and modify models and discuss their limitations.

Cells: Provide evidence from observations and investigations to support the idea that some organisms consist of a single cell. Investigate and provide evidence that living things are made mostly of cells that can be seen and studied only through a microscope.

Genetics: Explain that in order for offspring to resemble their parents, there must be a reliable way to transfer information from one generation to the next.

