

Tox Town - Resources for Science Teachers  
September, 2006

Overview:

The purpose of this PowerPoint demonstration is to show users various National Library of Medicine (NLM) databases appropriate for teachers and students at the high school and college level.

Talking Points	On-Screen
<p><b>INTRODUCTION</b> Introduce yourself.</p> <p>Today I will show you some of the web resources from the National Library of Medicine (NLM) that are especially useful for students and teachers. Because these resources are produced by the NLM, you can send students to these sites with the confidence that they are looking at unbiased, accurate scientific information.</p> <p>You will see a complete list of these resources on the brochure, "Resources for Science Teachers."</p> <p>The National Library of Medicine is located within the National Institutes of Health in Bethesda, MD. NLM works with federal agencies, public health institutions and international organizations to provide access to health and scientific information. As you can see from the homepage, it is a source of information for a variety of topics, including health information, environmental health and toxicology, online exhibitions, research, training, current health news and press releases, as well as a variety of databases for the public, health care professionals, researchers, librarians, and publishers.</p> <p>This presentation is organized by topic: biology, chemistry, earth science and environmental science, genetics, health, and careers.</p>	<p>Slide 1 (Title Page)</p> <p>Slide 2</p> <p>Slide 3</p>
<p><b>BIOLOGY</b> The 4 databases that will be discussed under Biology are: PubMed, Visible Human Project, Frankenstein, and Visible Proofs. Frankenstein and Visible Proof are online exhibits. These exhibition Web sites consist of multidisciplinary and diverse topics so there is some overlap in the topics under which they can be categorized.</p>	<p>Slide 4</p>

<p><b>PubMed</b> This database contains over 16 million citations to articles in life science journals dating back to the 1950s. Users can enter 1 or more search terms; search terms may be topics, authors, or journals.</p>	Slide 5
<p><b>Visible Human Project</b> This Web site provides images of complete, anatomically detailed three dimensional representations of the normal male and female bodies. In addition to the images, a fact sheet is also available.</p>	Slide 6
<p><b>Frankenstein: Penetrating the Secrets of Nature</b> This Web site encourages audiences to examine the intent of Mary Shelley's novel, <i>Frankenstein</i>, and to discuss Shelley's and their own views about personal and societal responsibility as it relates to science and other areas of life. The online exhibition explores the historical context of Shelley's work and how the ideas, thoughts and fears of her time still endure in ours.</p>	Slide 7
<p><b>Visible Proofs: Forensic Views of the Body</b> This Web site presents a collection of images and stories about the history and the development of the forensic field. The Education and Resources sections offer K-12 online activities, lesson plans, and bibliographies. There is also some forensic career information available on this site.</p>	Slide 8
<p>Three online activities and three lesson plans introduce forensic medicine, anthropology, technology, and history. Lesson plans include ready made resources for the classroom. Appropriate grade levels for the activities are indicated. Here is a copy of a sample lesson plan.</p>	Slide 9
<p><b>CHEMISTRY</b> The teacher resources listed under Chemistry are: ChemIDplus, Toxicology Tutorials, and TOXMAP.</p> <p><b>ChemIDplus</b> This database provides structures, molecular weight, toxicity information, physical properties and more for approximately 370,000 chemicals.</p> <p>Here you can see aspirin in 3D, which you can rotate, and in the more usual configuration.</p> <p><b>Toxicology Tutorials</b> Toxicology Tutorials cover basic principles of toxicology, toxicokinetics, and cellular effects and biochemistry. They are</p>	<p>Slide 10</p> <p>Slide 11</p> <p>Slide 12</p> <p>Slide 13</p>

<p>written at the introductory college student level. The Toxicology Tutorials are intended to provide a basic understanding of toxicology as an aide for users of toxicology literature contained in the National Library of Medicine's Chemical and Toxicology databases.</p> <p><b>TOXMAP</b>  TOXMAP is a Geographic Information System (GIS) whose maps indicate where chemicals are released on-site into the air, water, and ground, and identify the releasing facilities, single year releases, and chemical release trends over time.</p> <p>Say you want to know about <i>benzene</i> in Chicago. Type in the chemical, city, state, and/or zip code.</p> <p>The map will show which facilities are releasing benzene.</p>	<p>Slide 14</p> <p>Slide 15</p>
<p><b>EARTH SCIENCE, ENVIRONMENTAL SCIENCE</b></p> <p>Under this category, we have Tox Town.</p> <p><b>Tox Town</b></p> <ul style="list-style-type: none"> <li>- Tox Town is an introduction to toxic chemicals and environmental health risks using a non-technical, easy-to-use format. Target audience is educators, students middle school level and above, and the general public.</li> <li>- There are four “scenes” to choose from – town, city, US-Mexico border, and the farm.</li> <li>- Also take note of the link “A-Z Disasters” at the top of the page. Information regarding disasters, such as Hurricane Katrina and Hurricane Rita, is listed here.</li> <li>- There is also a “For Teachers” button at the top with suggested classroom activities and links.</li> <li>- Tox Town has a list of resources to turn to for information on health concerns regarding toxic chemicals.</li> <li>- Notice that there are several ways to navigate your way through the City. You can click on several of the locations within the city scene such as the school or factory, or you can click on the name of a location or chemical at the bottom of the screen to see where it might appear in the environment. There is also sound as you</li> </ul>	<p>Slide 16</p> <p>Slide 17</p> <p>Slide 18</p> <p>Slide 19</p>

<p>hover over different elements on the screen. The sound can be turned off if preferred.</p> <ul style="list-style-type: none"> <li>- Let's click on the "rat" to see what happens.</li> <li>- The menu on the right-hand side offers several choices of information to explore related to "Pests".</li> <li>- You can also click on one of the substance names at the bottom of the window to find out more about particular chemicals. You will see links to information appear on the right-hand side of the screen</li> <li>- There is also a Spanish version of Tox Town.</li> </ul>	
<p><b>GENETICS</b> Resources under Genetics include: Genetics Home Reference and Help Me Understand Genetics.</p> <p><b>Genetics Home Reference</b></p> <ul style="list-style-type: none"> <li>- Students interested in genetics may find the "Genetics Home Reference" helpful.</li> <li>- This site is intended to make genetics and its relationship to disease understandable.</li> <li>- The pages about specific diseases appear in a question and answer format and include links to a geographic listing of genetic counselors and information for caregivers.</li> <li>- Let's explore Usher Syndrome. Go to "Browse" and click on "Genetic Condition". An alphabetical list will appear; hit the letter with which the condition begins.</li> <li>- Notice the Question/Answer format in which information on Usher Syndrome is presented..</li> </ul> <p><b>Help Me Understand Genetics</b> For basic information on genetics you can click on the "<b>Help Me Understand Genetics</b>" link (or the Handbook).</p> <ul style="list-style-type: none"> <li>- Another helpful section of this resource is the Glossary. By clicking on the "Glossary" link you will see that there is an alphabetic jump list. Click on the letter and then the topic in which you are interested.</li> </ul>	<p>Slide 20</p> <p>Slide 21</p> <p>Point cursor to this</p> <p>Slide 22</p> <p>[Go back to Slide 21 to point to this if you want] Slide 23</p> <p>Go back to Slide 21 – point to "Glossary" under "Browse"</p>

<p><b>HEALTH</b></p> <p>Web sites to be discussed in this section include: MedlinePlus, MedlinePlus en español, Evaluating Internet Health Information, the Special Population Web sites, Household Products Database, and HIV/AIDS Fact Sheets.</p>	<p>Slide 24</p>
<p><b>MedlinePlus</b></p> <p>This Web site lists over 700 health topics and includes a medical dictionary, drug guides, videos, and tutorials. It is appropriate for all grade levels. (Point to the arrows on the left)</p>	<p>Slide 25</p>
<p><b>MedlinePlus en español</b></p> <p>This Web site mirrors the English MedlinePlus site and provides relevant information in Spanish.</p>	<p>Slide 26</p>
<p><b>Evaluating Internet Health Information</b></p> <p>This online tutorial teaches users how to evaluate the health information that is found on the Web. It is appropriate for middle school students and up. A Flash plug-in is needed to view the tutorial. A free download of this software is available.</p>	<p>Slide 27</p>
<p><b><i>The Special Population Web sites – Arctic Health, American Indian Health, Asian American Health</i></b> – provide students and teachers with information regarding health issues affecting these specific communities.</p>	<p>Slide 28</p>
<p><b>Household Products Database</b></p> <ul style="list-style-type: none"> <li>- Students can use this database to learn about the health and safety of everyday products. The Household Products Database contains easy-to-understand information about the potential health effects of more than 5,000 common household products you might find under your kitchen sink.</li> <li>- Let’s say you want to learn about the possible health effects of the cleanser you use to clean the bathroom sink. If you go to the “Products” section of the site, you can then look for the information.</li> <li>- Click on “Inside the Home”. You see a category list from which to select.</li> <li>- At the top of the screen, you see there is product information about the type of product it is, the manufacturer and how to contact them.</li> <li>- Further down, you find the “Health Effects” information as well as handling and disposal information.</li> </ul>	<p>Slide 29</p> <p>Slide 30</p> <p>Slide 31</p>

<p><b>HIV/AIDS Fact Sheets</b></p> <p>The AIDSinfo fact sheets and booklets are written to supplement the HIV/AIDS treatment guidelines. These fact sheets provide accurate information about HIV/AIDS and its treatment in plain language. Topics include general information, prevention, pregnancy issues, and treatment.</p> <p>Homework Help provides resources and reference links for learning and writing papers about HIV and AIDS for school projects.</p> <p>Spanish versions of consumer fact sheets and booklets are also available.</p>	<p>Slide 32</p>
<p><b>CAREERS</b></p> <p>Three Web sites are discussed under this heading: Changing the Face of Medicine, Environmental Health and Toxicology Education and Career Links, and Haz-Maps.</p> <p><b>Changing the Face of Medicine: Celebrating America’s Women Physicians</b></p> <p>The lives and work of more than 300 women physicians, from the 19<sup>th</sup> century to the present day, are highlighted. The online exhibition provides a searchable database of the women physicians in the exhibition, films of select women, online activities and lesson plans, as well as career resources.</p> <p><b>Environmental Health and Toxicology Education and Career Links</b></p> <p>This Web site is a collection of resources related to toxicology and environmental health education, its study and teaching, career paths and opportunities, including accreditation, and outreach for the public.</p> <p><b>Haz-Maps</b></p> <p>Students can choose a job and learn about its dangers, including hazardous agents and occupational diseases.</p>	<p>Slide 33</p> <p>Slide 34</p> <p>Slide 35</p> <p>Slide 36</p>
<p><b>CONCLUSION</b></p> <p>As you can see, NLM offers a wealth of information and resources for teachers and students. All of the information presented can be found on the NLM homepage. You may also want to remember the PDF link for the handout, “Resources for Science Teachers”.</p>	<p>Slide 37</p>

You can pass this information onto science teachers by giving them copies of the brochure, emailing them the PDF link of the brochure, or adding both the NLM homepage link and the pamphlet link to your Web sites.

If you are a school librarian, you can hold an in-service for science teachers to show them the Web sites presented today.

Questions?

Feel free to contact our office if you have questions about any of the NLM resources.

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