15. Rocking on the Computer

Are you "wired to learn"? The computer offers all sorts of fun, from video games to chat-rooms and instant messaging to websites where you can meet new people and learn about new things. The activities in this unit will help you use the computer to learn more about the hobby of rockhounding, to create presentations, to organize your collection, to find your way to collecting sites, and to connect with fellow collectors.

Activity 15.1: *Exploring the web safely and securely.*
Note: *This activity is required to earn this badge.*
Gather around a computer with your youth leader and other members of your club to explore the web via search engines like Google, Yahoo, Bing, or Ask.com. Learn "safety tips" for things to beware of when exploring the web. Then come up with topics (like quartz, or dinosaurs, or gem cutting) to see what you can find.

Activity 15.2: Reporting on favorite websites.
Explore the web on your own to find two or three websites related to your own areas of interest (minerals, fossils, geodes, meteorites, lapidary arts, natural history museums, etc.). Write down the web address of each site and a brief description of what you found on the site to share with your fellow club members.

Activity 15.3: Making presentations with the computer.
Create a PowerPoint presentation about your favorite minerals, fossils, or collecting site using images from the web or from pictures taken with a digital camera and show it to your fellow club members. If you have the right equipment and skills, try incorporating video clips. (See Badge 7: Communication.)

Activity 15.4: Cataloging your collection electronically.
Create an electronic catalog or list of your rock, mineral, or fossil collection that includes the name of each specimen and its locality and any other information you would like to remember about the specimen. For instance, if you bought it, you may want to record where you bought it and how much you paid for it. If it's a fossil, you should record the age of the fossil and the period or formation that it's from. (See Badge 5: Collecting.)

Activity 15.5: Maps and GPS to find your way.
Learn about different types of traditional paper maps (roadmaps, topographic maps, geological maps, etc.). Then explore mapping resources that are on the web, such as MapQuest or Google Earth or maps available via the websites of geological surveys. Learn about GPS and how it can help you find collecting spots. (See Badge 20: Maps.)

Activity 15.6: Joining an online community.
See if there's an online community focused around your particular area of interest, whether it be fossils, rock tumbling, meteorites, or minerals. Then, being mindful of safety tips from Activity 15.1, explore the site and report back to your juniors group about why you would—or would not—recommend it.

15. Rocking on the Computer

□ 15.1 *Exploring the web safely and securely* (required to earn this badge)

□ 15.2 Reporting on favorite web sites

□ 15.3 Making presentations with the computer

□ 15.4 Cataloging your collection electronically

□ 15.5 Maps and GPS to find your way

□ 15.6 Joining an online community

To earn your Rocking on the Computer badge, you need to complete at least 3 of the 6 activities. (Please note that successfully completing Activity 15.1 is required to earn this badge.) Check off all the activities you've completed. When you have earned your badge, sign below and have your FRA leader sign and forward this sheet to the AFMS Juniors Program chair.

_____
Date completed

_____ _____
My signature Youth leader's signature

_____
Name of my club

Leader's preferred mailing address for receiving badge:

_____

_____

_____

Back-up page 15.1: *Exploring the web safely and securely.*

Note: ***This activity is required to earn this badge.***

Gather your kids around a computer with an Internet connection to explore the web via search engines like Google, Yahoo, MSN, or Ask.com. Start by showing kids how to access a search engine. Then show them procedures for conducting a basic search, as well as how to conduct a somewhat more refined search to narrow down the number of resulting websites that will pop up. Finally, brainstorm with your kids to come up with rock-related topics of interest to them for exploration, like quartz crystals or dinosaurs or gem cutting. Type in the topic to see what you can find.

A good setting for an exercise like this is **your local public library**, providing of course you don't suddenly surprise the staff there with a flood of 20 noisy kids! In fact, your local librarians most likely would be thrilled to help in organizing and leading such a session. Stop in and talk with them and see what might be arranged. In one of my old day jobs at a publishing company, I interacted a lot with librarians when I signed and developed library reference books. Librarians are extremely bright and knowledgeable people engaged in a service profession. Thus, as a general rule they love to help people and are trained to help you find the information you need that's useful and reliable.

Safety and Security.

Librarians are able to provide your juniors with warnings about the dangers of the online environment. While I don't want to overstate such dangers, "on-line predators" do exist, as well as an unfortunate overabundance of websites of a less than savory nature that you want kids to avoid, not to mention the potential for getting "tagged" by spammers or by warped individuals who get a cheap thrill sending around digital worms and viruses if you open the wrong sort of document. One of the benefits of conducting a workshop like this in your public library—in addition to the safe and friendly community environment it provides—is that their computers generally do include firewalls and screens that prevent access to less desirable sites.

Here are some **safety tips** to pass along to kids when plugging into the online environment:

- Seek parents' permission before exploring websites.
- Refrain from giving out personal information should a particular site ask for names, addresses, phone numbers, etc.
- Avoid sites that require you to log in or to register, and seek advice from parents before taking any action like that on the web.
- Open attachments or downloads only from trustworthy sources.

Your local librarians will likely have additional safety tips to offer, so visit your local librarians, utilize their expertise, take advantage of computers set up and meant for public access, and arrange a web workshop for your club's kids!

Back-up page 15.2: Reporting on favorite web sites.

Activity 15.1 brings your kids together as a group to learn how to explore the web and see the sorts of things they can find related to our hobby while doing so with safety and security in mind. Activity 15.2 now sends them off to explore the web on their own and to report back. Each junior member should surf the web to explore his or her own area of interest, be it rocks, minerals, fossils, geodes, meteorites, dinosaurs, famous gemstones, lapidary arts, museums, field trips, etc. Have kids settle on the two or three websites related to their topic that they find the most interesting. They should thoroughly explore the sites and then do a brief write-up to report back that includes: 1) the web address of each site and its title, if it has one; 2) a brief description of what's to be found on each site; and 3) a conclusion about why they would recommend each site to other club members. You can let kids explore totally on their own, or you can provide suggestions as starting points. Here are some specific websites you might recommend:

General Information:

- http://www.google.com Google is a search engine that connects to anything and everything on the web. The only problem is that when you enter a search term, you could end up getting tens of thousands of results or "hits." Teach kids to use the advanced search features to attempt to narrow a search to more relevant sites.
- http://en.wikipedia.org Wikipedia has become an all-purpose "crowd-sourced" font of knowledge covering any and all topics. It's often a good first stop. Then follow up by pursuing links and references that conclude Wikipedia articles.
- www.YouTube.com YouTube is filled with all manner of video clips, both silly and serious. Search such topics as "mineral collecting" or "collecting rocks and minerals" and see what comes up.
- http://earth.google.com From Earth to the moon to Mars, Google Earth lets you explore it all with ever-increasing detail.
- http://education.usgs.gov The Education section of the United States Geological Survey website provides links to maps, images, videos and animations, online lectures, and more, with sections geared appropriately for primary, secondary, and undergraduate education. See what your tax payer dollars have provided!
- www.earthsciweek.com Earth Science Week is sponsored by the American Geological Institute with varied cosponsors such as the USGS, National Park Service, and more.

Minerals and Earth Resources:

- http://education.usgs.gov The "Education" link of the U.S. Geological Survey web site is filled with activities and even links to experts who will answer kids' questions.
- http://mineralseducationcoalition.org The Minerals Education Coalition provides a wealth of info and resources on minerals, their uses, and careers in the earth sciences.
- www.womeninmining.org Women in Mining also provides good info and resources on minerals and their uses, along with links to other interesting earth science sites.

- www.theimage.com This Mineral Gallery shows gorgeous gemstones with info on the properties of nearly 200 different types of minerals; it also provides tips on shooting mineral photos with digital cameras.
- www.zacksrocksandminerals.com Zack's Rocks & Minerals is a nice all-purpose rock-and-mineral web site that was initially designed when Zachary was a teenage junior member of the Lynchburg (Virginia) club. He has continued to update and expand the site. This provides an inspiring illustration of where a junior's interest might take him or her!
- www.mindat.org The Mineral Database is a mineral-by-mineral treasure trove of information on mineral compositions, descriptions, localities, etc. It is said to have become the world's largest database of mineral information.
- www.minrec.org Website of *Mineralogical Record* magazine, the most authoritative mineral collector's journal in the world. This web site upholds that tradition.
- www.webmineral.com Web Minerals is a mineralogy database of 4,714 mineral species with a vast image library and links to other resources.
- www.the-vug.com I found The Vug to be a little confusing but to offer many interesting resources. Especially check out their section on "Fakes & Forgeries."
- www.rockhounds.com Bob's Rock Shop is the first "Zine" devoted to rocks and minerals! It's run by a "regular rockhound" and continues to provide a fine service.
- www.e-rocks.com eRocks is more of a commercial site with ongoing online auctions, which can help provide estimated value to your mineral collection.
- www.njminerals.org/ Chris's Mineral Collecting includes info on identifying minerals, how-to-do micromounting, and more.
- www.minsocam.org/msa/collectors_corner/MineralCollecting.htm The Mineralogical Society of America provides a complete primer on mineral collecting. Also see their page www.mineralogy4kids.org/games.html

Fossils:

- http://www.nature.nps.gov/geology/paleontology/jr_paleo.cfm The National Park Service "Junior Paleontologist Program" site helps kids explore how paleontologists work, along with links to still more sites, activities, and resources.
- www.paleoportal.org The Paleontological Portal of the University of California Museum of Paleontology is an entry point to fossil resources for all age levels.
- www.fossilmuseum.net The "Virtual Fossil Museum" is an educational resource welcoming contributions by educators, scientists, and amateur fossil enthusiasts. It includes pictures and photos, fossil sites, geological history, paleobiology and more!

Lapidary Arts:

- www.rockhounds.com "Bob's Rock Shop" teamed with *Rock & Gem* magazine to provide a first-class resource on topical information for hobbyists.
- www.gemsociety.org/reference-library/ This web site of the International Gem Society has a great "Jewelry & Lapidary" section that aids in learning all about gemstones, gemology, jewelry making and the lapidary arts.

- www.bwsmigel.info/ A complete—and free—gemology course with links to dozens of lessons.

Museums:

- www.lib.washington.edu/sla/natmus.html Rated a "Top Site" by Education Index, here you'll find links to museums and university collections worldwide.
- http://paleo.cc/kpaleo/museums.htm "Kuban's Guide to Natural History Museums" features annotated links to larger museums with fossil displays.
- www.amnh.org/education/resources/ The American Museum of Natural History provides on-line activities and resources specifically for kids.

Note: *Kids can use this activity to satisfy requirements toward earning the Communication badge simultaneously (Activities 7.1 or 7.2).*

Back-up page 15.3: Making presentations with the computer.

Among the things I enjoy most about belonging to a rock club (okay, I belong to *five* rock clubs, but that's a different story…) are the presentations made by fellow club members. These most often are slide shows of a collecting trip or a trip to a big show like Tucson or Denver, but they also include show-and-tell presentations of a member's collection or demonstrations and instructions on a particular lapidary skill.

With the widespread use of digital cameras, these presentations increasingly are being augmented by or given entirely off a computer through a digital projection system which beats the old slide projector in any number of ways. Gone is the whir of an overly loud fan cooling your bulb, the jammed slide that brings a temporary pause to the presentation, and the occasional upside-down or backward slide, which is especially embarrassing when it turns out *all* the slides are that way! In addition to avoiding those pitfalls, now you can enhance a presentation by digitally inserting labels or arrows highlighting special features in a particular photo, combining photos for panoramic views, adding PowerPoint slides with brief snippets of animated text or outlines to guide your audience through key points of your talk, and even adding a musical background or just the sound of the wind across the desert.

My own son and daughter were given occasional assignments in high school to create PowerPoint presentations as group homework projects. If you have kids with such abilities and proclivities in your club, encourage them to prepare a PowerPoint presentation or a digital slide show about their favorite rocks, minerals, fossils, or collecting sites using images plucked from the web or from pictures taken with a digital camera. If they have the right equipment and skills, they can even incorporate video clips and/or sound. This works especially well as a group project, with kids converging on the home of the one with the most sophisticated computer equipment and with the more knowledgeable kids sharing computer know-how and savvy with the less knowledgeable (I include myself in the latter category) and with everyone contributing ideas toward producing a final product for presentation at a club meeting.

At a simpler level, encourage kids with digital cameras to take photos on their collecting trips showing the surrounding countryside, the specific locality and any identifying landmarks, and samples of what they found there. They then can pick out the best shots to burn to CDs to copy and share with other kids in the club or to start storing in a club library as a digital archive of collecting localities. See how far your kids' computer skills can take them as they apply those skills toward rockhounding. Who knows? You might be providing training for your future club web master!

Note: *Kids can use this activity to satisfy requirements toward earning the Communication badge simultaneously (Activity 7.1).*

Back-up page 15.4: Cataloging your collection electronically.

When I was a kid, I used a composition book to catalog my fossil collection, listing new fossils as I got them, and supplementing that master list with a collection of 4X6 index cards where I scribbled locality info, with data about the formation and the sorts of fossils I had collected. The card system made it easy to find my locality info: it was all stored alphabetically by the name of the locality (most often the name of the closest town, like "Stockton Bryozoan Patch" or "Braidwood Concretions" or "LaSalle Crinoid Quarry"), and new cards could be inserted easily in their alphabetical place. The whole system worked fine while my collection was small and manageable, but the larger it grew, the more difficult it was to leaf back through my master list in that composition notebook, in which fossils were listed as they were acquired rather than by some more logical system, such as class or family of fossil, geological age, locality, etc. Eventually, I found faults in my index card system, as well. For instance, instead of grouping by locality name, would it make more sense to group all the cards together by geological time period in case I wanted to find all the Ordovician localities represented in my collection? So I made divider cards for each major period and then organized localities alphabetically within each period. But then, what if I specifically wanted to find all localities holding a specific type of fossil, like trilobites? How would I easily find those?

The advent of the computer made such questions moot. Collectors (both kids and adults) have access to intuitively easy-to-use database and spreadsheet software programs that come already loaded on new computers when purchased. You can now set up master fields. For fossils, these might include things such as specimen number, common name, taxonomic information, period and/or formation, and locality. For minerals: specimen number, common name, locality, etc. Once master fields are set up and data for each specimen entered, it's easy to reorganize your list and pull up just the things you want, for instance, all my fossil fish from the Eocene Epoch, or all my fossil crinoids regardless of locality or time period, or all my specimens of quartz crystals.

An easier alternative to creating your own database from scratch is purchasing software packages expressly designed to help rockhounds catalog their collections. These often have blank fields that simply need to be filled in, and the program does the rest of the work, even allowing you to print custom labels. Two examples are "TFGCollector" (The Fredrick Group, Inc., P.O. Box 1698, Cumming, GA 30028, www.fredrickgroup.com, phone 866-679-9284) and Carles Millan's free software for cataloguing mineral collections (http://carlesmillan.cat/min/main.php).

For more about cataloging a collection and electronic data keeping, see Back-up page 5.2: Cataloging and labeling your collection, in the Collecting Badge unit. Work with your kids to come up with the best system for cataloging their collections and encourage those who are technologically proficient to make full use of the computer.

Note: *Kids can use this activity to satisfy requirements toward earning the Collecting badge simultaneously (Activity 5.2).*

Back-up page 15.5: Maps and GPS to find your way.

Use this activity to show kids the different types of maps they'll find useful in pursuing our hobby, from traditional guidebooks, road maps and geographic/political maps showing locations of towns, county borders, etc., to topographic maps showing the ups and downs of our landscape and geological maps revealing the formations under our feet in colorful patterns. With that background under their belts, then turn to digital maps.

Maps have come a long way since the days we stopped at gas stations to get the bulky fold-out variety to distract us as we drove and that never seemed to fold back the way they folded out. Those maps still exist and still serve a purpose. Good sources for roadmaps continue to be gas stations, along with drug stores and variety stores, AAA offices, etc. More detailed maps and atlases are available through companies like **DeLorme**, **Rand McNally**, and **Thomas Guides** and can be found in variety stores, bookstores, or outdoor supply stores. To get topographical and geological maps, turn to the geological survey of the state you're planning to visit. Most will have a catalog or online listing of maps they offer. To find a link to your state geological survey, go to the web site of the **U.S. Geological Survey**: http://www.usgs.gov.

The most exciting development with maps is how getting from Point A to Point B has been transformed in the digital age. Show your kids how they can enter start and end points into **MapQuest** (http://www.mapquest.com) or similar services and get directions, driving distances, and estimated travel time, along with a color map highlighting their route. In fact, skip MapQuest! Cars increasingly are equipped with built-in navigation systems that will even talk to you and tell you when you've gone a road too far. On the web, mapping services such as **Google Earth** (http://earth.google.com) combine traditional maps with satellite images that allow you to zoom in for a close-up look at your destination. Gather kids around a computer and explore these neat features, picking destinations the kids throw out.

Finally, the **Global Positioning System (GPS)** has truly transformed how we might go about finding our old-time favorite collecting spots, even in those desert localities where the unmarked fork in the road turns out to be three or four forks, none seeming to line up exactly with the guidebook in our lap. In fact, those guidebooks increasingly include GPS coordinates for collecting spots. Some now consist purely of coordinates, entirely forgoing the traditional maps and directions, for instance, David A. Kelty's *GPS Guide to Western Gem Trails*. Other guidebooks are popping up, like Delmer G. Ross's *Rockhounding the Wiley's Well District of California: The GPS User's Guide*. If you or other adult members of your club or society have GPS devices, give your kids a demo of GPS in action, perhaps by doing a "geocache," or treasure hunt: hide a container or bag with enough crystal or fossil specimens for each of the kids in your group and plant it in a field or park, noting its GPS coordinates. And then play GPS hide-and-go-seek with your kids, and give each a rocky reward once the cache has been located.

Note: *Kids can use this activity to satisfy requirements toward earning the Maps badge simultaneously (Activities 20.4 & 20.5).*

Back-up page 15.6: Joining an online community.

Being mindful of the "safety tips" noted on Back-up page 15.1 (required to earn this badge), you might encourage your older, more computer-savvy kids to join an online community in an area of specific interest. Such communities can put them in touch with knowledgeable hobbyists and experts around the world with like-minded interests, offering blogs, message and bulletin boards, discussion groups, news updates, photo galleries, and more. Kids can find answers to their questions, suggestions and tips, leads to further resources, and even opportunities to trade specimens through the mail.

The downside is that discussions held on such sites don't always proceed in a grown-up manner as the occasional "flame war" erupts in part as a result of misunderstandings arising from the nature of online communication, where, for example, an effort at humor may get interpreted as an insult. You'll also find people engaging in fatuous ego trips now and then, painfully and embarrassingly reminiscent of recent candidates for the U.S. Presidency. Still, the benefits outweigh the occasional downside, and online communities can be both educational and fun if you look past the banter and egos that sometimes go off track.

I recommend consulting your local librarian to help discover good, established, reputable groups. Fellow club members also might be able to advise. To give you a flavor, here are a few I'm aware of:

- LA-Rocks, an on-line group of Southern California rockhounds who share information on gems and minerals, collecting sites, shows, and field trips.
  http://groups.yahoo.com/group/LA-Rocks/

- Rock Tumbling Hobby, a site for over 4,000 rock tumbling enthusiasts to trade tumbling tips, share photos, and arrange swaps of tumbling rough.
  www.rocktumblinghobby.com

- Club Space Rock, a site which bills itself as "the world's largest meteorite community," with folks ranging from rank amateurs to world-class scholars.
  www.meteorites.ning.com

- Bob's Rock Shop, billed as "the Internet's First 'Zine for Rockhounds," this includes a "Rock Talk" discussion group and message forum, along with all sorts of other information, photo galleries, links, and more.
  www.rockhounds.com