

8. Field Trips

The ultimate hands-on activity is a field trip! Little can replace the thrill of discovering a precious gemstone or a fossil first-hand. Also, a lapidary project has a lot more personal value and meaning if you collected the rough material yourself. But before you start down the road, you need to know the laws of your state and rules governing proper behavior for collectors and respecting private property. You also need to consider what you'll be collecting and how you'll collect it and then make plans and gather together the proper equipment. The follow activities will help you get the most out of your field trip adventure.

Activity 8.1: *Field trip etiquette, safety, & AFMS Code of Ethics.*

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

Learn and demonstrate knowledge of the AFMS Code of Ethics. Make a permission release form. Demonstrate field trip etiquette on your next trip. If the trip was on private land, did you first gain permission? Did you provide the owner with a release form? Did you fill in any holes you made? If at a road cut, did you keep rocks off the roadway?

Activity 8.2: Field trip planning.

Choose a locality for a field trip from a guidebook or from suggestions by adult members in your club. Draw a map and directions to your site. List what you expect to find, then list the tools and supplies you'll need to collect and transport your finds home.

Activity 8.3: *Taking a field trip.*

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

Take a field trip to a collecting locality. Be sure to follow proper field trip etiquette during the trip—and have fun!

Activity 8.4: Record keeping.

Start and maintain a “field journal” of what you did and what you found during your field trips in a composition or spiral-bound notebook, three-ring binder, or other record book or on the computer. Take notes while in the field and later write up a formal report including observations about the locality and specimens. Pinpoint where you found your rocks, minerals, or fossils, so that others could locate the spot. Was there a specific layer containing the fossil or mineral deposit? If so, how could others locate and identify that layer? If you have a camera, illustrate your field journal with photos, or provide drawings that may prove useful to others wishing to visit the site.

Activity 8.5: The indoor field trip.

Organize a field trip to a college geology department or to a museum, calling in advance to arrange a tour not just of the exhibitions on public display, but the treasures behind the scenes.

8. Field Trips

- 8.1 *Field trip etiquette, safety, & AFMS Code of Ethics* (required to earn this badge)
- 8.2 Field trip planning
- 8.3 *Taking a field trip* (required to earn this badge)
- 8.4 Record keeping
- 8.5 The indoor field trip

To earn your Field Trips badge, you need to complete at least 3 of the 5 activities. (Please note that successfully completing Activities 8.1 and 8.3 are 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 8.1 *Field trip etiquette, safety & AFMS Code of Ethics.*

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

Before setting foot in the field, kids should be taught proper field trip etiquette. This includes the do's and don'ts governing proper—and legal—behavior when collecting natural resources. It also includes safety to ensure everyone comes home unharmed.

If organizing a group field trip, as the group leader, it's your responsibility to teach by example. First and foremost, be aware of the laws of both the U.S. and your state government regarding fossils. Some areas, and some types of fossils, are regulated and, if anything, such regulations will only increase in coming years. Here are just a couple examples. While common invertebrate and plant fossils are usually okay to collect, no vertebrate fossils may be collected on federal lands without special permits, which are usually only granted to scientists conducting a formal research study. Also, while plant fossils are usually okay to collect, no more than 25 pounds of petrified wood, plus one piece, may be collected in a single day, up to a limit of 250 pounds per year. No collecting of any sort is allowed within National Parks.

Whether searching for fossils, rocks, or minerals, always secure necessary permits and be aware of regulations. For instance, if collecting in a National Forest (as distinct from a National Park), you're not allowed to do more than surface collect (no digging or disturbing the natural features of the land) and you may need to purchase an "Adventure Pass" to park on national forest land. (Keep up-to-date on this because regulations for National Forest lands have recently been in flux.)

To collect on private property, obtain permission and make arrangements with landowners well in advance of your trip. With a large group, you'll likely be required to sign a waiver or liability release form promising not to damage property and absolving property owners of any responsibility for accidents. In fact, you're likely to get a better reception if you approach a property owner with such a waiver already in hand and with evidence of insurance coverage through your regional Federation. (See Back-up pages for Activity 8.3 for sample liability release forms.)

Here is some general advice for the adult field trip leader regarding safety precautions. In selecting your field trip site, avoid areas with obvious hazards (high-traffic road cuts, steep bluffs with loose material likely to result in slumping or landslides, clumps of poison oak, etc.). Remind kids to dress in appropriate outdoor clothing, sturdy shoes or (better still) hiking boots, a hat or hardhat, and—if they will be chipping away with rock hammers and chisels—work gloves and eye protection such as shatter-proof goggles or safety glasses. Before departing, make sure your car, truck, or van is in good shape and has a full tank of gas. You or another adult in the group should know basic first-aid and should have a fully and freshly stocked first-aid kit at hand, with a cell phone and directions to the nearest hospital in the event of an emergency. On arrival at the site, be sure you are fully off the pavement if parking near a road. Have a signal to conclude the field trip or to bring the group together (for instance, three blasts of the car horn). Also,

always tell someone where your group is going and how long you anticipate being away so if the group does get lost, rescue parties know where to start.

Before you embark on the field trip, explain any ground rules. Then, remind kids of those rules once you arrive. Kids have boundless enthusiasm and energy, especially if they've been cooped up in a bus or car. Don't let them just leap from the car and run helter-skelter. Gather everyone around to talk about what you'll be collecting, to provide collecting tips, and to repeat **ground rules and safety tips**. These might include:

- Pair up with a buddy and stay close to one another so if an accident happens, there's someone who can lend immediate assistance and get help.
- Don't wander off alone; stay within view of the group at all times.
- Have some sort of safety signal (for instance, three sharp blasts on a whistle) to use in case anyone gets separated and lost or urgent help is needed for any reason. (If using a whistle, make sure everyone uses it *only* for emergencies.)
- No rushing up steep slopes of loose talus that could cause a slip and a broken ankle or that might send rocks rolling toward those behind and beneath you.
- Don't toss rocks onto a roadway—or toward other field trippers.
- Don't try lifting or rolling overly heavy rocks alone.
- Don't undermine overhangs since that can lead to a deadly cave-in.
- Don't leave unfilled holes that people or livestock might trip in.
- If using a rock hammer, wear goggles or safety glasses to avoid eye damage from flying rock chips.
- Don't enter mine shafts due to dangers of cave-ins, unseen deep holes, bad air, etc.
- Stay away from any wild animals; even a cute one is still wild and can give a nasty scratch or bite or, worse yet, transmit rabies.
- Be aware of any venomous or other nasty creatures in the collecting area (rattle snakes, water moccasins, scorpions, black widow spiders, wasps, ticks, chiggers, etc.) and how to avoid them. Use bug spray in buggy areas with mosquitoes, midges, etc.
- Know how to recognize plants to avoid, like stinging nettles, poison oak or ivy, etc.
- Remind everyone to keep hydrated and—if collecting in a hot, sunny area, to wear a brimmed hat. Two of the most common maladies among field trippers and hikers are dehydration and heat stroke.
- Watch the weather and be ready to leave in the event of thunderstorms and lightning.
- While most of our collecting is done in warm-weather months, if doing “polar bear collecting” in the winter, watch for hypothermia and frostbite.

The AFMS has devoted a section of its website to safety tips like these and more, with reprints of articles that go into detail. Go to <http://www.amfed.org/safetytips.htm>

Before leading kids on a field trip, I suggest making a list of safety rules tailored to the locality where you'll be collecting and printing and distributing it in advance. Then review those rules upon arriving at the locality.

In addition to safety tips and rules, all your club members—adults and juniors—should have a copy of and should be intimately familiar with the AFMS Code of Ethics:

American Federation of Mineralogical Societies

Code of Ethics

- I will respect both private and public property and will do no collecting on privately owned land without permission from the owner.
- I will keep informed on all laws, regulations or rules governing collecting on public lands and will observe them.
- I will, to the best of my ability, ascertain the boundary lines of property on which I plan to collect.
- I will use no firearms or blasting material in collecting areas.
- I will cause no willful damage to property of any kind such as fences, signs, buildings, etc.
- I will leave all gates as found.
- I will build fires only in designated or safe places and will be certain they are completely extinguished before leaving the area.
- I will discard no burning material - matches, cigarettes, etc.
- I will fill all excavation holes which may be dangerous to livestock.
- I will not contaminate wells, creeks, or other water supplies.
- I will cause no willful damage to collecting material and will take home only what I can reasonably use.
- I will practice conservation and undertake to utilize fully and well the materials I have collected and will recycle my surplus for the pleasure and benefit of others.
- I will support the rockhound project H.E.L.P. (Help Eliminate Litter Please) and will leave all collecting areas devoid of litter, regardless of how found.
- I will cooperate with field-trip leaders and those in designated authority in all collecting areas.
- I will report to my club or federation officers, Bureau of Land Management or other authorities, any deposit of petrified wood or other materials on public lands which should be protected for the enjoyment of future generations for public educational and scientific purposes.
- I will appreciate and protect our heritage of natural resources.
- I will observe the “Golden Rule,” will use Good Outdoor Manners, and will at all times conduct myself in a manner which will add to the stature and Public Image of Rockhounds everywhere.

Revised July 7, 1999 at the AFMS Annual Meeting

Back-up page 8.2: Field trip planning.

Choosing a Field Trip Locality

It's best for juniors leaders to get together with the club field trip chair in January for a Field Trip Planning Meeting to schedule trips for the entire year so that everyone can work them into their calendars. In choosing a locality, select sites relatively rich in minerals or fossils. By nature, kids are impatient and will want to start finding "stuff" right away. Your goal, after all, should be to foster enthusiasm, not to tax their patience. If you don't know of suitable exposures in your area, ask around at a local college. Many geology departments have road logs for earth science field trips. Three publishers have guidebook series covering many states in the U.S.: Mountain Press publishes the Roadside Geology Series; Gem Guides publishes the Gem Trails series; and Falcon Press publishes The Rockhound's Guide series. In addition, state geological surveys often have guidebooks to their states or individual educational reports and road logs on specific mineral or fossil localities. The U.S. Geological Survey web site (<http://www.usgs.gov/>) has a handy map that allows you to click on your state for regional geologic information.

Field Trip Supplies

Different localities have different materials and, therefore, different requirements in terms of the tools and supplies necessary for collecting. Select the materials appropriate to the site you'll visit. The following list is meant to be representative, not exhaustive:

- Protective clothing (durable long-sleeved shirt and long pants)
- Sturdy hiking boots (preferably steel-toed) and heavy work gloves
- Hard hat if in a quarry or elsewhere with a danger of falling rocks
- Wide brimmed hat and sunscreen to protect against sun exposure
- Shatterproof goggles or safety glasses if hammering rocks
- Detailed area maps, compass, GPS unit
- Backpack, rucksack, and/or 5-gallon bucket to carry supplies and specimens
- Rock hammer, rock pick, sledge hammer, along with chisels, gads, pry bar
- Shovel, trowel, hand rake
- Sifting screens
- Pocket knife
- Hand or whisk broom, paint brushes, toothbrushes
- Toilet paper, paper towels, newspapers, bubble wrap for wrapping delicate specimens
- Masking tape
- Small storage boxes, ziplock baggies
- Cardboard flats or other boxes or containers for transporting specimens
- Cards for writing locality info to wrap in the field with your specimens
- Magnifying glass, hand lens, or loupe
- Spray bottle of water to check for potential lapidary material
- Field notebook and pencils/pens to record info about a site
- Camera to keep a visual record of a site and specific collecting horizons
- First aid kit (fully stocked with fresh materials)
- Plenty of water in canteens or bottles, food, and—if going overnight—camping gear
- Cell phone or 2-way radio and a field companion or "buddy" in event of an accident

Back-up page 8.3: *Taking a field trip.*

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

The first step in taking a field trip is planning. You should follow the recommendations in Back-up page 8.2 for selecting a field trip site and choosing the appropriate supplies. You should make a map and write out clear directions to the site, along with a list of recommended tools and materials to bring, and distribute this to field trip participants.

And you should know how many people you'll be leading on the trip. A trip with just a few participants is a lot less intrusive—especially on a rancher's private land—than a trip with 30 or 40 participants. The larger the group, the more management concerns to consider, and the more adults you'll need to help chaperone. So get a clear idea as to the size of your group by circulating a field trip sign-up sheet. (See example within the following pages.)

It's usually a good requirement to have one or both parents accompany their kids on a field trip. If they can't, any absent parents should sign a permission slip and liability release, providing phone numbers where they may be reached during the time you'll be on the trip, and you should let them know when you'll return and where to call in case of questions. Everyone (kids and adults) participating in a field trip should also sign a personal injury and liability release form. Finally, during the trip itself, it's best to use the buddy system with two kids always together in case one is injured.

Following is a series of forms to assist you in planning and conducting a group field trip. These are provided as examples only, and you should modify and adapt them for your own, individual needs and purposes.

Note: Because several other badges involve taking a field trip, kids can work toward earning their Field Trips badge and other badges simultaneously. For instance, see Activities 2.4 (Earth Resources), 3.5 (Fossils), 9.4 (Leadership), 11.4 (Earth in Space), 12.5 and 12.6 (Gold Panning & Prospecting), 14.5 and 14.6 (Stone Age Tools & Art), and 20.4 (Maps).

FIELD TRIP SIGN-UP SHEET

Trip location: _____ Trip date: _____

NO.	NAME (PLEASE PRINT)	HOME PHONE
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(This form courtesy of Richmond Gem & Mineral Society)

LIABILITY RELEASE

(Place the name of your club here)

To whom it may concern:

I, the undersigned parent or guardian, do hereby give permission for _____ to participate in the events as scheduled by the youth advisors of the (insert the name of your club here).

It is understood that any personal loss or injury, should such occur to _____ while a participant in the scheduled activity remains our responsibility and that no claim may be made against either the advisors or the (insert the name of your club here).

It is further understood that the blanket insurance policy for the society covers the third party (i.e., host or property owner) should damage occur while a guest on said premises during a scheduled field trip by (insert the name of your club here).

Should emergency first aide or medical attention be needed while _____ is participating in the scheduled activity, permission is granted to attend to the need. Our own health and accident insurance is carried with _____ (name of insurer)

and the policy number is _____.

I/we can be reached by telephone at _____ home or _____ office. If unable to reach anyone, a third party may be called _____ (name and phone number)

Signing this release signifies validation for as long as the above named child remains a member in good standing of the (insert name of your club here).

Print name of Parent(s) or Guardian

Signature of Parent(s) or Guardian

Date

(This form courtesy of Richmond Gem & Mineral Society)

(name of club here)

**A Member Society of the California Federation of Mineralogical Societies
Educational Nonprofit Tax Exempt Organizations**

INFORMED CONSENT * ASSUMPTION OF RISK * WAIVER OF LIABILITY
for (name of club here) Field Trips & Activities

Trip/activity host: _____

Trip/activity date/s: _____

Trip/activity Location/s: _____

Attendee's name: _____

Attendee's address: _____

Please read the following information before beginning the field trip or activity. **Sign and date this form to acknowledge you have read and understand the information presented below.**

I understand that the field trip activity that I am participating in, of the above named Society, may include one or more of the following hazard(s) that may result in personal harm:

Unpredictable and dangerous environmental conditions/hazards, including but not limited to snow, rain, wind, very cold and very hot temperatures, lightning, altitude, loose rock, falling rock, rock slides, avalanche, river hazards, mud slides, mud, ice, other slippery conditions, and contact with poisonous reptiles, wild fauna and toxic plants.____ (initial)

I understand the risks inherent in all outdoor activities existing in the environment, either natural or man-made.____ (initial)

I understand that I am required to use appropriate safety equipment pertinent to the field trip activity in which I will be participating. I accept full responsibility for my actions and accept liability for any resulting damages or injuries.____ (initial)

By participating, I am assuming the risks inherent in this field trip or activity and am releasing the above named societies, their officers, directors and individual members, from any liability for claims or lawsuits by the undersigned participant, his or her heirs or assignees, arising out of this field trip activity. I have read all of the aforementioned information and the list of safety rules accompanying this form and understand any and all of it. Any questions which have occurred to me have been answered to my satisfaction. I am participating in these activities of my own free choice.

If the participant is under 18 years of age, this form must be read and signed by a parent or legal guardian before participation in this field trip or activity.

Signature of Participant

Date

Signature of Parent/Legal Guardian

Date

(This form courtesy of the California Federation of Mineralogical Societies)

Back-up page 8.4: Record keeping.

Much of the value of a mineral or fossil lies in its context: where did it originate, and what might that tell us about its formation and about its place within the overall geology of a region and its geologic history? While a gemstone may hold intrinsic value and economic worth even if its ultimate source is unknown, a fossil that lacks context lacks scientific value and becomes a mere curiosity or a purely commercial object. Even a gemstone is further enhanced if it has a story behind it—if it's the “Moguk Ruby” or a “Virgin Valley Opal.” Whether it's minerals, gemstones, or fossils, kids should be encouraged to look beyond economic value and the “gee whiz” factor of a neat object and to consider the scientific and educational value of what they collect.

Thus, kids should be taught to maintain a field journal of what they did and what they found during their trips in a notebook, three-ring binder, or on the computer. I do both. I've bought a small, sturdy, bound diary in which I can jot notes, make sketches, and rough out maps while in the field. Once home, I transfer the info in a more organized fashion on the computer to print and maintain on three-hole punched sheets that can be inserted into a binder or manila folders for easy storage and easy reorganization as additional sheets accumulate. These records are used to pinpoint where rocks, minerals, or fossils were found so others could locate the spot—or so I can find it again years later as memory fades. They also augment sheets containing catalog information about each specimen (see Back-up pages for Activity 5.2 on cataloging and labeling a collection), additional information I find and photocopy about the geology or paleontology of a particular site, and sheets of slides or prints that I've photographed of a locality.

Kids should be as specific as possible in record keeping. What are the directions to the site? What distinguishing permanent landmarks might mark the site? (For instance, “a 30-foot red boulder” is much more likely to be around 40 years from now as opposed to “a small, rotting log.”) In this day-and-age, they can provide GPS data. Was there a specific layer containing the fossil or mineral deposit? If so, how could others locate and identify that layer? What did they find, and was it abundant or scarce? Did they notice anything unique, such as certain minerals or fossils occurring together with other sorts of specimens, or on their own? The more detail, the better. Once in the field, the impulse is to collect, collect, and collect some more. But while collecting the rocks, kids should take the time to carefully collect information to accompany those rocks. These written records of their adventures can often be even more interesting than the rocks themselves!

Encourage kids to augment written entries with drawings, maps, and photos. I always make a camera an essential part of my collecting tools. In recording info about a locality, a picture really can be worth a thousand words. Plus, they come in useful in other ways, as in preparing a slide show, illustrating a bulletin board display, or providing visual relief and support in an article. (Most professional magazines require contributing authors to provide visually interesting photos if submitting an article for consideration.)

***Note:** Kids who write trip reports can use this activity to satisfy requirements toward earning the Communication badge simultaneously (Activity 7.2).*

Back-up page 8.5: The indoor field trip.

Not all field trips need to be out into the field. In some places, all the hard work of searching, collecting, and cleaning rocks, minerals, and fossils has already been done, and the results are just waiting for you to see! Take your kids on a trip to one such locality, i.e., a college geology department or a science or natural history museum.

Many college geology departments have teaching collections, and—given that they are educational institutions—most are happy to oblige in guiding your kids through their collections if given sufficient advance notice. You should also try to arrange a question-and-answer session with one or more of the faculty on staff. Some departments have active public outreach efforts, so while visiting, you should strive to forge a long-term relationship with receptive faculty members who may be able to help you in an on-going manner with additional activities for your kids.

Museums—both the large, world-class varieties like the American Museum of Natural History and smaller, regional ones like the Santa Cruz City Museum—are terrific places to take kids. It's probably childhood trips to the Field Museum in Chicago along with field trips sponsored by the Illinois State Geological Survey that fanned my interest in the earth sciences. The most memorable visit, however, was one in which I was invited to tour not just the exhibitions on public display, but the treasures behind the scenes in none other than the Smithsonian. I vividly remember seeing tray after tray of shark teeth of all manner and variety being pulled and stacked in front of me until the stack was taller than I was. A mile-high row of such trays stretched down an aisle as far as the eye could see, or so it seemed. However large it really was, an impression was indelibly made!

Call in advance to arrange a group tour of a museum and most will assign a specific guide or docent to escort you and your kids. When calling, be sure to check into the possibility of a “behind the scene” tour in addition to the public displays.

The web is a great place to locate the nearest natural history museum. For instance, just a few seconds after typing “Natural History Museums” into the Google search engine, I found a long list of sites, with four that I explored in more detail. Each offered excellent and thorough listings of museums around the U.S. and the world, complete with links that take you to the museums' own web site. Unfortunately, in the crazy and temporary world of the World Wide Web, most of those have gone “extinct” since I wrote the third edition of this manual. Still, for now anyway, a very good one remains on the web site of the University of Washington library:

<http://www.lib.washington.edu/sla/natmus.html>