

The RESET Volunteer Handbook

A Guide to Classroom Sessions and Field Trips



Classroom Adventures in
Hands-On Science & Math

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Foreword

Many new volunteers feel uncertain before they begin their volunteer experience with RESET. Their first and most urgent question is: “Where do I begin?” The objective of the *RESET Volunteer Handbook* is to answer that question (and others that may arise after you’ve started). It helps to remember that most RESET volunteers have little, if any, teaching experience, and many have not worked with children before. What they do have is energy and enthusiasm for Science-Technology-Engineering-Math (STEM) subjects and a passion for exciting younger generations about them as well. You bring your knowledge and professional experience to children who may have had little exposure to STEM professions and professionals, and this can open the door to new discoveries and dreams for them. In combination with RESET volunteer orientation, which consists of workshops, training videos, and visits to schools to watch experienced volunteers in action, this *Handbook* will provide the guidance and encouragement you need to jump-start your volunteer experience.

“Our children rely on RESET programs to give them a sense of hope and purpose.”

**—Principal Brandon Davis, Cora Kelly Elementary School,
Alexandria, VA**

Acknowledgments

RESET extends a special thanks to Sherri Kohr, RESET's Classroom Skills Advisor, and to its Lead Volunteers, whose feedback helped considerably in the development of this handbook. The photos and graphics that appear throughout this publication were provided courtesy of RESET volunteers, teachers, and staff.

PART I— Why RESET?



A Brief History

RESET was founded by Dr. Harold I. Sharlin (1925–2017), a former electrical engineer and history of science professor who believed that the knowledge and practical experience of STEM professionals might enhance the lives and learning of young students in the Washington, DC metro area. In turn, he hoped it would help to improve the quality of science and math education in the United States and to address current deficits in academic achievement and careers in STEM fields.

In 1988, RESET's first year of operation, there were just seven volunteers, serving mostly inner-city schools. Those first RESET sessions convinced Dr. Sharlin that the most effective and meaningful way of teaching children science was through hands-on, inquiry-based experiments that got ALL students actively involved. In short, he wanted science to be *fun*.

Since RESET began, more than 1,000 volunteers have participated in the program, serving more than 15,000 students. RESET has been endorsed by the District of Columbia School System (DCPS), has been recognized by The Catalogue for Philanthropy: Greater DC and Great Nonprofits.com as a superlative nonprofit, and has achieved a Gold Star ranking from Guidestar, the premier charity vetting website in the country.

When you join RESET, you join an exceptional organization comprised of caring educators who want to give back to their community.

RESET's Mission

RESET's mission is to motivate children to discover and explore the worlds of science and math, and to encourage them to consider education and career choices in related fields.



Harold Sharlin, RESET's Founder, believed that ALL children should have stimulating and inspiring experiences with science and math.

"I love how this program allows students to get excited about science and math. They enjoyed hearing real life stories about science and how what they are learning is applicable to their everyday lives."

—Ms. Schroder, Moorefield Station Elementary School, VA

Who Are RESET Volunteers?

RESET volunteers are individuals who have pursued a STEM career or are studying to do so. Volunteers range in age from 18 to 80! Among RESET's active volunteers are professionals and students from the fields of physics, statistics, medicine, environment, biology, computer science, anthropology, chemistry, neuroscience, and civil, aerospace and mechanical engineering.



RESET volunteers reflect a diversity in race, age, gender, and ethnic background.

What Do RESET Volunteers Do?

RESET volunteers typically plan and lead six hands-on STEM learning sessions in elementary school classrooms and a field trip to a STEM site.

“Through RESET our students have had the chance to be exposed to individuals who share their ethnic background and who have overcome certain circumstances and used education as a means of living a full life.”

—Gail Brady, Principal, Sugarland Elementary School, VA

RESET's Goals

1. To improve student attitudes, motivation, and literacy in STEM subjects.
2. To provide expert and educationally valuable inquiry-based STEM programming to underserved children, with a particular emphasis on children who are low income and/or culturally/linguistically diverse.
3. To establish connections between students and STEM professionals, providing children with role models and examples of career pathways.
4. To improve the classroom teaching of science to PreKindergarten, elementary, and middle school students.
5. To provide volunteers with rewarding opportunities to give back to their communities by making a meaningful contribution to education and the future of their profession.



If you've helped spark an enthusiasm and interest in STEM, then you've done your job as a RESET volunteer!

RESET's STEM Teaching Philosophy

The RESET program encourages children to see science, technology, engineering and math as useful, relevant and exciting—subjects with a strong connection to their lives and to their futures. Although we certainly want children to improve their academic performance, we also want their first learning experiences with STEM to be fun and engaging. This will encourage them to explore more on their own inside and outside the classroom.

Your sessions with children may be the first and only enjoyable and non-threatening experiences they've ever had with science or math. You have the opportunity to change their negative attitudes toward these subjects forever.

WHY?

- Children have a lot of “Why?” questions. *Why do ships float? Why do speakers vibrate? Why do airplanes stay in the air?* Answering these questions with hands-on demonstrations and everyday illustrations is fundamental to RESET's educational philosophy.



RESET's teaching model is based on the premise that children must enjoy engaging and meaningful experiences with STEM subjects as early as possible to sustain interest, motivation, and literacy in these subjects throughout their educational career. Using STEM professional scientists to teach the ABCs of science and math to children through hands-on, interactive, inquiry-based lessons and experiments is a powerful and effective means of nurturing curiosity and literacy.

Hands-On . . . Learning by Doing

Hands-on learning is an educational method that actively encourages students to DO something in order to learn about it. Students find it more fun and engaging than a lecture, so it advances RESET's goal to spark enthusiasm for STEM. Sometimes called “kinesthetic learning,” hands-on learning allows students to directly observe and participate in what is happening, to experiment with trial and error, and to build on their mistakes.

Hands-on learning also encourages independent, self-directed explorations, which will be important throughout their education and later in life.



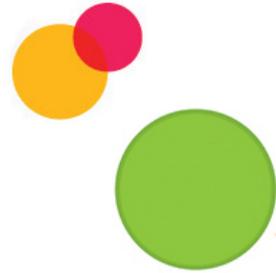
A RESET volunteer teaches a session on robotics, emphasizing learning by doing.

Bringing it Home

RESET endeavors to create a synergy between the classroom and home by promoting parental involvement in the learning process. Volunteers are encouraged to teach children scientific concepts in such a way that they can easily explain or repeat the experiments on their own at home, such as how the forces of gravity and buoyancy determine whether an object in water will float or sink.

PART II

The RESET Volunteer Experience



Getting Started

After you express an interest in RESET, we will schedule an introductory meeting with you and/or provide information that will help you decide whether RESET is a good fit for you.

Once you have decided to volunteer, RESET offers a number of best practices and training options that will help you get acclimated. First, RESET offers **Volunteer Seminars** where new and prospective volunteers hear presentations from experienced volunteers, principals, teachers and RESET's Classroom Skills Advisor. Volunteers also have the opportunity to **visit a school** to observe a RESET session.



A student examines the backbone of a deer during a session on animals.

RESET also has produced a series of short **training videos** that offer helpful teaching and classroom management tips from experienced volunteers, **a website** that provides a good overview of the RESET program and learning resources, a **quarterly newsletter** and **annual report**, with feature articles on STEM education, volunteer profiles, and field trip opportunities, and a variety of **social media options** for staying connected with the RESET community.



Note: RESET has a Classroom Skills Advisor on staff who is available to assist you in creating lesson ideas.

Finally, this **Volunteer Handbook** was developed to give you a firm foundation for beginning your RESET experience. It includes successful tips from experienced RESET volunteers, reflected in positive feedback from students and teachers. It is a good starting point; you and your teachers may find other approaches that work better in making your program effective. Please share those with RESET so other volunteers can adopt your ideas.

“RESET is a great opportunity for science enrichment—the volunteers bring materials that we can never have access to in our school.”

—Ms. Aunon, Laurel Ridge Elementary, VA

Volunteer Training Checklist

✓ Watch RESET's training videos—narrated by experienced RESET volunteers.

✓ Read this Volunteer Handbook.

✓ Check out RESET's website for sample experiments.

✓ Visit a classroom to watch a veteran volunteer in action.

✓ Attend a volunteer orientation workshop.

Choosing a School

RESET will attempt to place you at a school or learning center at which you prefer to volunteer. You may choose a school based on geographical proximity to where you live or work. Or you may select a school based on the type of student you'd like to work with—students with special needs, students from low-income neighborhoods, or students that exhibit a high level of academic readiness. Some volunteers prefer to work with younger children, while others prefer upper elementary school grades. Many volunteers build strong relationships with specific teachers over the years, and prefer to continue those relationships.



Note: RESET's Executive Director and staff will discuss these various options with you and match you with a school that best meets your preferences. If RESET does not have a school partner in your area of preference, we will reach out to develop a new school partnership.



RESET volunteers have the choice of volunteering with different age groups, from 4 to 12. Here Pre-Kindergarten students examine insects using kid-sized microscopes.

Choosing a Program

As a volunteer you have a number of program options to choose from to suit your schedule and needs:

- **RESET In-School Program**

This program operates during regular school hours (M–F) in numerous Pre-Kindergarten and elementary schools throughout the DC metro area.

- **RESET After-School Program**

RESET provides after-school programs at many schools, some with a large percentage of minority and low-income students. After-school programs typically operate between 2:45 and 6:00 p.m., and vary from school to school.

- **RESET Team Program**

Because a growing percentage of RESET volunteers are working professionals, RESET actively seeks alliances with professional societies and government and private organizations to reach those scientists and engineers. Through partnerships with a number of federal agencies, professional societies, and research organizations, RESET provides teams of volunteers to various schools. The volunteer team approach offers flexibility for working professionals, as sessions can proceed even if some team members are unavailable due to work responsibilities.

- **RESET Saturday Program**

In 2014, RESET began a partnership with CurioLogie in the Classroom, providing hands-on STEM for middle schools on Saturday mornings.

- **RESET Summer Program**

RESET provides summer programs in Washington, DC.



A RESET team from Andrews Air Force Base.

Choosing a Grade Level

Most schools prefer RESET programs that reinforce the science curriculum teachers are presenting. New volunteers should review the science or math standards of learning for the jurisdiction in which they want to volunteer. A discussion of standards can be found at RESET's website under the tab "Learning Resources." Some volunteers have specific preferences for the topics they want to include and may find that these topics match up with the curriculum for a specific grade level. Others have more flexibility as to topics and may be open to a number of different grade levels.

The Right Match

The next step after deciding to become a RESET volunteer is to send a message to reset@resetonline.org that includes your preferences—geographic, grade level, and scheduling. RESET will then suggest school placement options that reflect those preferences.



RESET offers many options for volunteering. Here a husband and wife team volunteer at a DC public school.

A lot of groundwork will already have been completed before you step inside a classroom. RESET's Executive Director will have spoken with the principal at the school you've selected to explain the program and to set the ground rules for your participation. The principal will have signed an agreement with RESET and will approve the teachers who will participate.

Making the Most of the Teacher/Volunteer Partnership



A RESET volunteer (right) chats with his classroom teachers.

RESET places an emphasis on an open communication and exchange between you and your partner teacher. Your teacher brings to the partnership her or his experience in teaching, and specifically in teaching children of a particular age or stage of development. You bring expertise in a STEM field in which your teacher may have limited experience. The combination of these talents forms a dynamic and collaborative partnership that is integral to RESET's success.

“Ms. Yett always provided a wonderful introduction that was age appropriate. She used a lot of real world examples.”

—Ms. Ulba, Shepherd Elementary School, DC

The First Meeting with Your Teacher

Your first meeting with your teacher is very important. RESET will participate in this meeting with you. You will introduce yourself, explain your area of expertise, and possibly share some of the topics you'd like to undertake with your students. Before this meeting RESET suggests that you collect ideas for the experiments that you may want to present, but not to undertake detailed planning or acquire materials until the teacher provides feedback on your ideas. You can find experiments by searching your science topic and age level on the web (including on YouTube).



Look for experiments that excite and engage you.

RESET also provides a compendium of sample experiments at:

<https://resetonline.org/learning-resources/sample-experiments/> and on its YouTube site www.youtube.com/user/resetonlinevideo

Topics Covered

During this initial meeting you'll cover these topics:

- **RESET's mission and objectives.**
- **Contact information.**
- **Dates and times of your classroom sessions.** Volunteers should bring their calendars to the meeting to schedule classroom visits.
- **RESET's *Teacher Guidelines*.**



Your RESET sessions will be most successful when your partner teacher actively participates.

- **The classroom setup.** If students are seated in groups at tables, how many tables are there and what is the maximum number of students in each group?

- **The number of students and class composition.** What are the particular learning characteristics of this class of students? What is the percentage of special needs students or English for Speakers of Other Languages (ESOL) students, and should this affect your approach?



Every classroom is different! Find out what technologies and equipment are available in your classroom.

- **Equipment and technologies** that are available in the classroom (dry erase boards, flip charts, projectors, outlets, digital whiteboards, student devices, etc.)

- **The topics you will cover during your 6 sessions and the ultimate goals for the term.** Does the teacher have other suggestions and can you accommodate them?

- **The Scientific Method.** Does the teacher use the scientific method or an alternative approach?



Experiments need not be complex to be effective. Here a volunteer helps a student establish a simple electrical circuit from wires, a battery, and a light

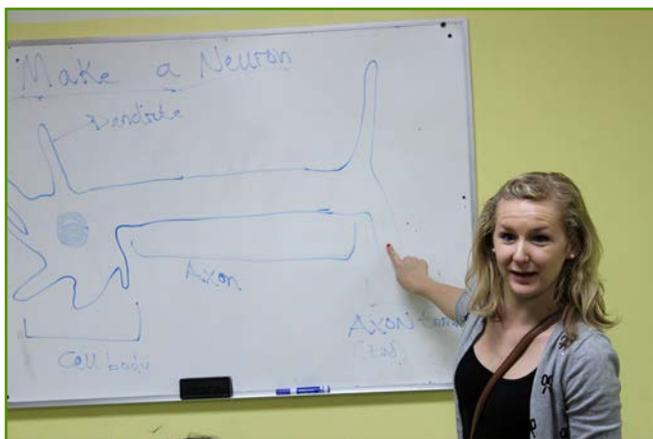
- **School closings and delays.**

- **The school's media (photo) release policy.** Can RESET use student images in our digital and print outreach programs?

- **Field trips.** Discuss if the teacher wants to include a field trip, and any school policies or logistical issues that apply.

- **The assessment process.** Student and teacher program assessment processes will be reviewed.

After the meeting RESET will prepare a draft meeting report that summarizes key points, follow-up actions, and contact information, and send it to you and your teacher(s) to review. Please notify RESET of any errors and omissions; in particular, make sure that any follow-up actions and due dates that are assigned to you are correct.



Post difficult vocabulary words that you will cover during your session and illustrate ideas with simple diagrams.

Planning Your Program

In most cases, a RESET volunteer will deliver 6 classroom sessions per school term. In selecting your experiments, reflect the topics that you and the teacher have agreed to. Focus on hands-on activities rather than lectures and demonstrations.

In developing plans for your experiments, consider:

- What you want the students to understand by the end of the experiment.
- How you will explain the meaning of new vocabulary terms (visuals will help).
- How you will engage the students and introduce them to the topic, and what questions you will pose to assess students' background understanding.
- What questions you will ask after the experiment so students can explain what they have learned.

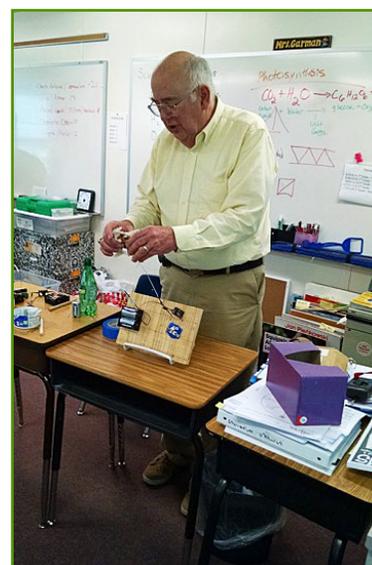
“Each session had a connection component during which students discussed and completed journal entry responses about what they learned and how it applies to the real world.”

—Ms. Stoltill, Takoma Elementary School, MD

BEFORE Your First Session

Some volunteers will pay a visit to their classroom to acclimate themselves to their teacher's style, the classroom environment and setup, and school culture. Note the availability of dry erase boards, flip charts, digital whiteboards, projectors, and electrical outlets. Ask your teacher about her or his background and interests and, when relevant, refer to them in your sessions. Note also the teachers' style of dress and avoid dressing too casually, so you can help reinforce the school's culture.

Be thinking about ways to include as many hands-on activities as possible. Please be mindful that many elementary school students have short attention spans. Explain concepts and procedures in ways that minimize the time spent in lecture. Presentations are more engaging with cartoons, video clips, short demonstrations, and role playing.



Double-check that your equipment is fully operational prior to your sessions.

A Quick Checklist

- ✓ Obtain information from the school's front office on the volunteer sign-in procedure and parking availability.
- ✓ Plan the classroom set-up. For most experiments it is difficult to work with a single large group while providing all students with opportunities for hands-on activities, so it works better if the students are in smaller groups or clusters at tables.
- ✓ Identify and inform the teacher of any needs you have, such as specific types of equipment, student groupings, or handouts.
- ✓ Select experiments that meet practical limits: portability, safety, and time. Before each session, send your teacher a brief description of the experiment and any STEM vocabulary terms you will use. Try to limit the introduction of new STEM terms to 4 to 7 per session. Ask your teacher to advise you if the concepts and vocabulary need to be adjusted for her/his students. You might ask your teacher to have the students make a RESET folder or journal ahead of time in which to keep a log of their experiments.
- ✓ Inspect your equipment before your class visit, especially if it has been in boxes all summer. Replace equipment and supplies and replenish handouts. Run through any digital content.
- ✓ Before your classroom visit, many volunteers like to do a trial run (dress rehearsal) of the experiment (especially if it is your first time doing it) and time how long it takes to complete. Expect the experiment to take longer in the classroom.



Small groups are more manageable for hands-on activities, and many classrooms are already set up in pods, groups, or clusters, as seen here.



Many RESET volunteers use common household items in their experiments so that students can easily do them again at home. Here a volunteer uses marshmallows, paperclips, straws and toothpicks in an experiment on genetically inherited traits.

- ✓ Buy or order materials for the classroom in sufficient quantities for the number of students and breakout groups in the classroom. Bring extras in case the class is unexpectedly larger or materials break. Connect with your teachers in advance if you expect them to provide any materials for your experiment.

Note: *RESET will order or reimburse volunteers for experiment materials; you will be given guidance on the maximum amount of funds available.*





You're already a VIP! Students love visitors and they are thrilled to see you.

DURING Your First Session

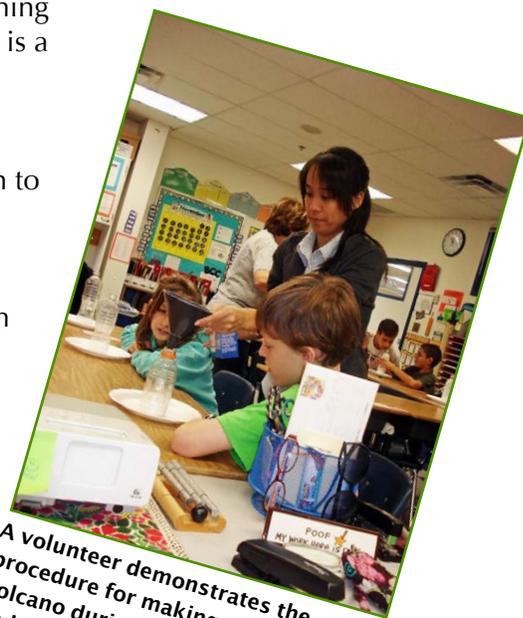
School children are pleased that an adult STEM expert has come to visit their class. It makes them feel important, and they are prepared to welcome you before you ever open your mouth. After many years of delivering STEM programming to students, RESET has identified a number of best practices that will make your first session go well:

“The RESET volunteer introduced himself and gave background about his career and love of science. My students were interested and eager to hear what else he would have to say and teach them.”

—Ms. Moran, Annapolis Elementary School

A Quick Checklist

- ✓ **Introduce yourself and how you want the children to address you** (e.g., Ms. Jane, Dr. Doe, Mr. Smith). Explain the difference between a scientist and an engineer or describe in general terms what STEM professionals do and how your field relates to STEM.
- ✓ **Ask an icebreaker question** such as what they have been learning about science or what they want to be when they grow up. This is a good time to share with the children how math and science are important for all jobs in today's world.
- ✓ **Show by example.** It is best to use the first part of each session to explain the learning concept and to demonstrate how to do the experiment.
- ✓ **Set a positive tone from the start.** Make your first session both a sharing and learning experience. If the classroom has a rug where the students can sit while you sit facing them, it is a good way to begin your interactions with the students in a more informal way.
- ✓ **Keep your first experiment relatively simple** so you can gauge classroom dynamics, student abilities, and language skills. Can you provide visuals to explain important vocabulary terms?
- ✓ **Avoid using advanced STEM terminology** beyond that planned for your session.



A volunteer demonstrates the procedure for making a baking soda volcano during a lesson on acids and bases.

AFTER Your First Session

- Keep the lines of communication open. Ask the teacher to provide feedback and suggestions to you that will improve your sessions.
- Schedule a time, perhaps after your second session, for a meeting or telephone conversation so you can receive feedback from the teacher and discuss any questions or issues that you have.
- Consider emailing a summary of what you did each week to your teacher. She/he may want to include these in messages to parents and guardians.



Check in often with your partner teacher.

Classroom Management

It can be a little daunting to work with an energetic, sometimes boisterous, bunch of 10-year-olds. But there are many ways to keep them focused and attentive:

A Quick Checklist

✓ **Prepare.** Separate and organize your materials ahead of time to minimize the amount of time required to do that during your session.

✓ **Grab their attention at the start.** Use a technique to get their attention and quiet them down when you want to speak to them. You can ask the teacher what she/he typically uses for their “calming” method, or use one like having the students count backwards from ten to zero, then silence, or flipping a light switch.



Children can have a variety of responses to science experiments. The key is to engage and stimulate their curiosity.

✓ **Explain your expectations.** Share your learning and behavior expectations for the day. Children feel more secure and will enjoy greater success when they have a clear sense of direction and know what is expected of them. Before you begin, tell the students what the experiment is about and what kinds of activities they will be undertaking. Also, explain the outcomes for the day. You might say, “Today we will explore . . .” Explain and model the steps in the experiment before handing out materials to the students, as it’s easier to keep their attention if you aren’t competing with the distraction of objects in front of them.



Describe what will take place during the experiment, as some students are startled by unexpected sounds, smells or objects that feel unfamiliar. In this experiment students get to touch an actual cow brain.

✓ **Keep them informed.** If your experiment involves unexpected noises, flashes of light, or unusual smells, let the teacher and children know beforehand. Some children can be disturbed or frightened by dark or enclosed spaces. Allay their concerns by explaining exactly what they can expect. Without “giving away the punch line,” try to keep the learning environment relaxed and trusting.

✓ **Moderate the noise.** Be assertive in maintaining the attention of your students by keeping your sessions

reasonably calm and quiet. Your teacher will assist with this. Ask students to raise their hands before giving answers. If students yell out answers, tell them to raise their hand first and then call on them. Make sure other students are quiet and listen to the student speaking.

✓ **Assign students specific roles during an experiment.** For example: one volunteer who conducts an experiment on drawing polymer fibers assigns one student to mix the solution, another student to draw the fiber, and a third to observe and record the results. You can also break the experiment into tasks and assign students at each table numbers to perform them. This will ensure that more assertive students don’t dominate the activities. Generally students will welcome doing all tasks, even carrying materials from the front of the classroom and distributing them to the other students at their table.

✓ **Manage your time.**

— Be on time (or ahead of time).

— Keep an eye on the clock; pre-estimate time milestones to check yourself along the way.

— When you run out of time, consider extending the session to the next week instead of rushing to complete.

— Allow time in your planning for student questions. When children ask a lot of questions, it is a sign of engagement; however, too many can



Students respond to a question using their teacher's preferred classroom management technique.

consume a lot of time. You can indicate that you can only take one or two more questions, and students should save the rest for later if time remains. You can also suggest that the children keep a running list of questions that you can discuss together at your next meeting.

— Be sure to allow time for a summary to review what was learned that day.

✓ **Wrap it up.** End the class with a thought-provoking question or assignment that the students must complete before you meet with them again. You might make that question the icebreaker for your next session. Make sure this task is fun and easy to do.

Ways to Involve and Engage Your Students

You should seek to foster a warm, encouraging relationship with your students, while at the same time having high expectations of their behavior and their intelligence.

Sometimes students give up in the face of a challenge before they've even tried. Explain that scientists love challenges because they learn in the process of making mistakes and then correcting what is wrong. STEM professionals persevere, work hard, and are creative in addressing a challenge or problem. Encourage students to say, "I will give it a try" or "I don't know this . . . yet" instead of "I can't" or "This is too hard."

- Be sincere and straightforward with your students. Give compliments to encourage positive behavior.



Fun is contagious during an experiment on polymers!

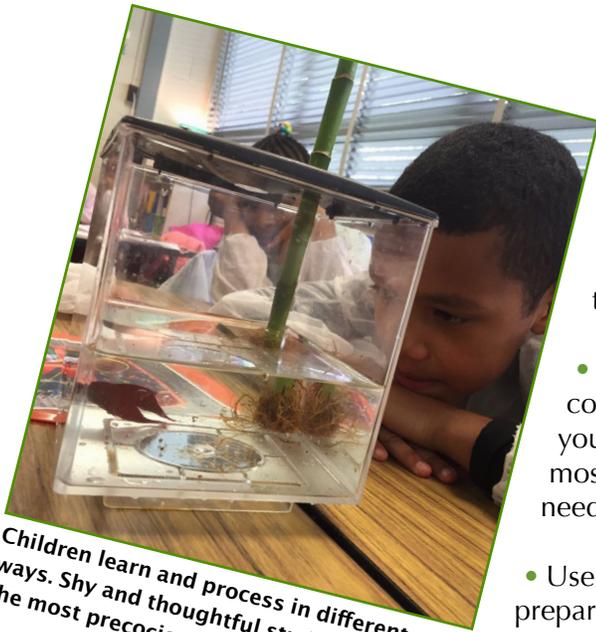


Consider assigning students specific roles during an experiment or ask that they keep a journal where they record their questions, observations and drawings.

- Open up the class with a few minutes of informal conversation about current events, a student's personal interest, or a question related to last week's exercise. *Try to find a hook for each session—a provocative question, challenge or visually interesting graphic.*

“The volunteer’s program was great because it also reinforced English language by incorporating vocabulary.”

—Ms. McKinnin-Brown, Malcolm X Elementary School, DC



Children learn and process in different ways. Shy and thoughtful students are often the most precocious.

- Introduce the session’s vocabulary terms at the beginning of the experiment. Be mindful to avoid slipping into the use of STEM terms other than those pertinent to your session. You may ask the teacher for a space in the classroom to post STEM vocabulary, perhaps with corresponding images that illustrate key terms.

- Casually stand next to students who don’t typically contribute, as it will help to draw them out. Make sure you reward an infrequent contributor with a smile. The most intelligent students are often the quietest. They may need a little more time to feel comfortable with you.

- Use visual aids on the blackboard or handouts that are prepared in advance. Sometimes classroom aides or parent volunteers are available to help set up the experiment “props,” distribute materials and assist students.

- Encourage questions and constructively respond to a student’s contribution, even if it is the wrong answer. Many answers show good critical thinking and imagination, although they may “technically” be incorrect. Ask them to reconsider their answer if it is incorrect. When a student asks a question about an experiment, such as, “What if we changed . . . ?” or “What would happen if . . . ?” be sure to note that these questions are excellent, as this is the way scientists think and has led to many scientific inventions and breakthroughs.

- Write students’ answers on the blackboard or refer back to a student’s correct answer later in class.

- Pose questions that are designed to elicit a variety of brainstorming responses, rather than closed-ended answers. Develop students’ critical thinking skills, with questions such as *Why? How? If? What Else?* For example, you might ask: “What are some of the ways a bird adapts to its environment?” Or, “How do we use statistics in daily life?” Or, “How many stars are there in the sky?” Or, “What is light and where does it come from?” (Begin with a few leading questions to elicit background knowledge on the topic you are covering, then work your way up to more complex, intermediate questions.)

- Allow for some wait time. After being called upon, some students may hesitate before speaking, so give them some time before telling them you’ll get back to them later and moving on. Some students need time to formulate their answers. Consider asking a question and having students discuss what they know with a partner.



Dressed in her own lab coat, a RESET student gazes through a prism.

- Move around the classroom instead of always standing in front of the students.
- Use non-verbal cues of encouragement. Smile expectantly, make eye contact, nod while a student is talking, look relaxed and interested.
- Illustrate points with stories and amusing anecdotes from your own life—children love them!
- Include experiments in your program that use everyday household items such as string, jelly jars, and paperclips, so that children can demonstrate what they've learned at home to their families.
- Address students by name. RESET will provide teachers with lab coats for students, which they can personalize with their own name tags.
- Relate the scientific concepts the students are learning to real-world situations and problems.
- Provide “takeaways” (key concepts to remember) throughout the session (repetition helps). At the end of the experiment, always sum up what the students learned that day.
- Call on an array of different students. If only one or a few students repeatedly raise their hands, try asking simpler questions so more students can participate.



Remember: *You are a role model.* Always demonstrate good safety practices, fairness and courtesy.



Your volunteer work can inspire the next generation of inventors, discoverers, and innovators.

Reinforcing RESET's Program Goals

- **Provide an Example of an Education and Career Pathway**

At some point in your program you should discuss what first engaged you in science and math, what education you have had, and the kinds of work that people in your field do. Your fascinating work experiences may prompt them to consider new career paths.

Understandably, most children have a narrow knowledge of the world and the kinds of jobs that are available to them. Share with them anecdotes about your work—funny experiences as well as impactful ones. Include photos, graphics, video clips, and objects to help them make connections between science discoveries and potential careers.

One volunteer always begins his first session by talking a little about himself and his career. He likes to mention how technology has made life better now than when he was in fourth grade. Most children can't imagine a world where there are no computers or cell phones or video games. It can be eye opening for them to see how the world has

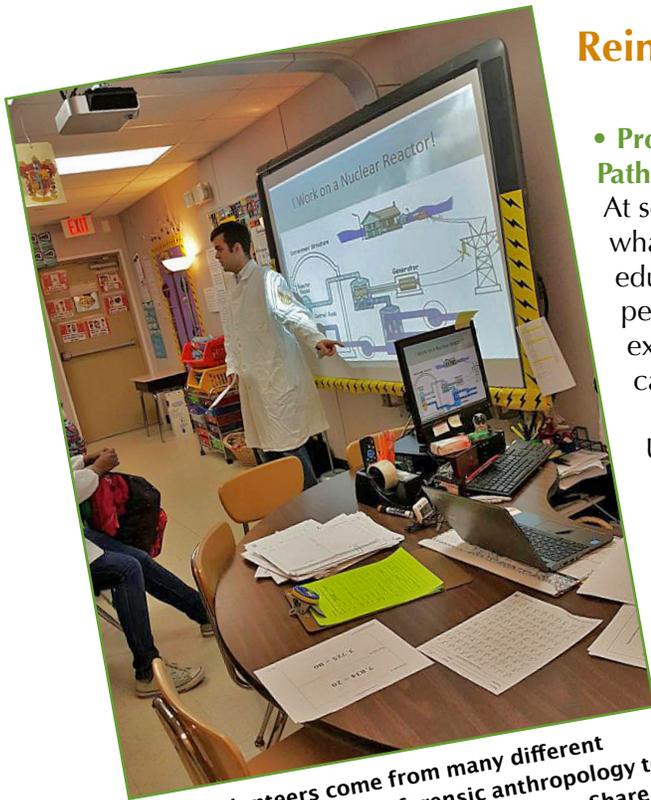
changed. Or you may want to include this discussion later in your program after the students have developed a bond with you and begin to view you as a role model.

- **Introduce the Arts and Creativity Where Appropriate**

STEM success requires an open and flexible mindset as well as a number of creative skills, such as critical thinking and problem solving, visualization, innovativeness, the ability to communicate ideas, collaboration, an understanding of history, and entrepreneurship. Students are encouraged to return to the drawing board to improve on their original ideas and to innovate around problems that arise.

- **Support Your Teacher's Approach to STEM Learning**

If the teacher uses the scientific method, try to reinforce the steps whenever they are relevant to your activity.



RESET volunteers come from many different STEM professions, from forensic anthropology to nuclear engineering to computer science. Share a little bit about your career and some of the fun things you get to do in your job.



Many RESET experiments encourage students to express what they're learning through verbal presentations, metaphors and drawings.

If an analytical approach other than the scientific method is used, try to incorporate that into some part of your program. If your session includes math, make sure your teacher is involved so you use the same protocols that the students are being taught, or ask the teacher to lead the computational steps in the experiment.

- **Make it Meaningful**

It's also a good idea to show how the achievements of the past relate to the challenges of the future. Try to relate the specifics of your experiment to the broader picture. For instance, when one volunteer demonstrates how a siphon works, he talks about how the ancient Romans built siphons over many miles to bring water from a lake to a town on the other side of the mountain.



A volunteer chats with 4th graders during a biomimicry activity in which students learn about how inventors are inspired by nature to create new inventions. They then design their own nature-inspired prototype using recycled materials.

Children should see how science and technology have changed the way we do or understand things—how it better the world and impacts the future. It is also important to relate the scientific concepts they are learning to things they experience in their everyday lives.



A structural engineer asks students to identify different types of bridges, including the suspension bridge pictured here, as these are bridges children travel over every day.

“I love the connections Charles makes to bring what students are learning into real-life applications. He is readily able to differentiate content for those ready to learn at a higher level!”

**—Ms. Schroder,
Moorefield Station
Elementary School,
Loudoun County, VA**

The Field Trip

The RESET field trip creates memorable experiences for your students that often reinforce the concepts you've covered with them during your sessions together. Not all schools will want a field trip, but for many the field trip is a special benefit of partnering with RESET, and it is an excellent capstone to what students have learned that term. You should decide early where you would like to take your class. Discuss the possibilities with your teacher and look at the Sample Field Trips section in this Handbook (page 33).



If you take your students to a site not listed here that you can recommend, please let us know—reset@resetonline.org.



A RESET volunteer accompanies her class on a field trip to the Glenn L. Martin Space Tunnel at the University of Maryland.

RESET will make arrangements with the STEM venue that you and your teacher select. Many volunteers plan to have the field trip after the final classroom session, but you should select the site and notify RESET early in your program when bus and group reservations are easier to make.

The teacher is responsible for making arrangements for permission slips and chaperones, if needed.

Note: Please call or email RESET's Volunteer Coordinator regarding where you are going, the date of the trip, number of students and adults needing bus transportation and admission tickets, what time you need the bus at the school and the pick-up time at the site. She will send you a confirmation of the bus reservation; make sure your teacher reviews it.



“The camping trip was a huge hit with the students! On the first day, they got to experience climbing and zip-lining. This strengthened their teamwork skills and allowed them to learn how to be out of their comfort zone. As nighttime approached, we went on a hike along the beach, where they observed and learned about how the swamp drains into the Chesapeake Bay, creating a unique ecosystem in the surrounding area. The students enjoyed learning about the unique wildlife and vegetation that existed in the swamp biome.”

—Nghị B. Lam, RESET Volunteer

Field Trip Logistics—A Quick Checklist

- ✓ Does your teacher support a field trip?
- ✓ Are there any liability issues and/or permission slips that must be in place?
- ✓ Does your schedule allow you to go on the field trip? If not, RESET has suggestions for sites that are appropriate with only teachers and chaperones participating.
- ✓ Do you want the field trip to tie in with the lessons you've done with the students during your program or instead to expose the students to another STEM field?
- ✓ Do you want a guided field trip?
- ✓ Does the venue simply provide a tour or do they offer a hands-on activity while on site?
- ✓ What is the distance between the school and the venue?
- ✓ How much time will the school allow for the field trip?
- ✓ Will there be a stopover for lunch or will the students bring lunches?
- ✓ Are there any disability-access issues with the venue?

How to Enhance Your Field Trip Experience

- Provide on-bus audio presentations. One volunteer has students research topics related to the field trip's focus area and present their reports during the bus ride. Notify RESET's Volunteer Coordinator that your bus needs to be equipped with a sound system.
- Before arriving, provide students with scavenger hunt questions or a checklist of things to see and/or activities to undertake at the destination site.
- If your teacher confirms that students have photo release clearances, take lots of photos and videos and send them to your teacher and to reset@resetonline.org.
- Involve the teacher before, during, and after the event.
- Provide a take-home item or handout for students that will remind them of what they learned on the field trip.
- If the site you are visiting does not provide a hands-on activity, include one that relates to the site's STEM focus in one of your classroom sessions.



Pre-K students eager to get underway during a field trip. Consider an on-bus audio presentation as a way to enhance what your students will learn that day.

End-of-Program Assessments

Feedback from teachers and students enables RESET to assess the impact of our programs, report quantitative data to RESET funders and other stakeholders, and help volunteers refine their classroom approach for future programs. RESET also uses this data in its new volunteer training program and in selecting topics and speakers for Volunteer Seminars. RESET has evaluation forms for students (appropriate for second graders and older) and teachers to complete.



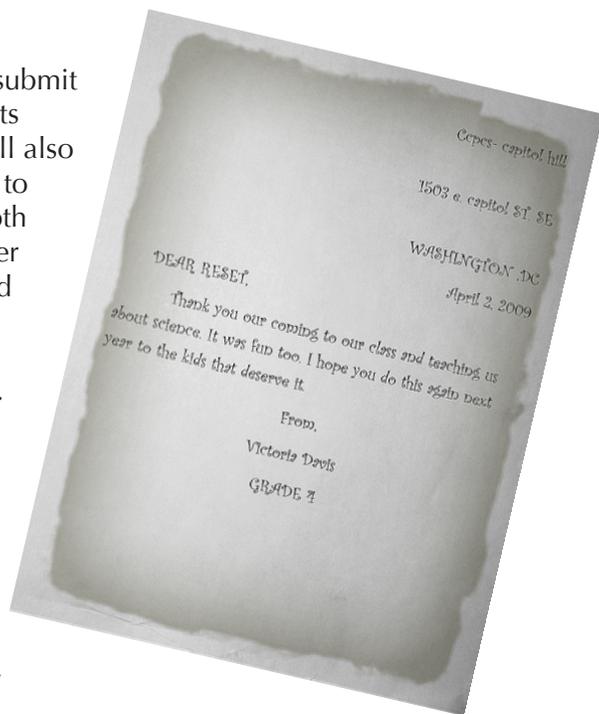
A volunteer proudly shares a thank you poster from his students.

Volunteers are requested to distribute the evaluation forms to students during their final classroom session and to collect them after the students have completed them. Ahead of that session RESET will send the volunteer an email with the assessment attached so the volunteer can make copies or request that the teacher do so. Alternatively, RESET will land mail hard copies to you upon receiving a request that includes the number of copies needed.

Allow the students sufficient time to fill in the forms, usually about 15 minutes. Volunteers should take the completed forms with them. After reviewing the assessments, they should be forwarded to RESET's Executive Director. They can be scanned and emailed, land mailed or other arrangements can be made with the Executive Director.

Teachers are encouraged to submit their assessments online. RESET will send this link to your teacher. RESET will also email the volunteer a copy of the teacher assessment form to provide to their partner teacher at the final session. This both serves as a reminder and provides the option for the teacher to manually complete the form if that is his or her preferred format. If the teacher completes the form during the final session, the volunteer should take it with them, review it, and submit it to RESET along with the student assessments. The results of online teacher assessments are available for volunteers to review.

Teachers are encouraged to submit their assessments



"I learned more than five things every class! I will be very happy if Mr. Smith comes every day . . . He told me so many things I didn't know about science."

— Saleh, fourth grade, Camelot Elementary School, VA

PART III— A Step Further

Broadening Your Impact

Now that you're a seasoned RESET volunteer you may be asking yourself if there is anything else you can do to broaden the impact of your volunteer work. YES! YES! YES!

Connecting with the School Administration

- Invite your principal to attend a class (with teacher approval).
- Share handouts with your principal—this helps educate the administration and create institutional knowledge.

Connecting with Parents and Guardians

- Encourage teachers to keep a RESET folder for each student that they can share with their parents/guardians. RESET will reimburse you if you buy folders for your class.
- Pursue opportunities to send things home—worksheets, materials for home activities, handouts, and a participation certificate that lists your program's experiments.
- Ask your teacher if she or he would be willing to include your email summary of what you do each week in messages to parents/guardians and to include photos if possible. You may also want to suggest additional content that includes:
 - web resources
 - enrichment opportunities
 - museum exhibits/interactive exhibits
- Ask your teacher to invite parents/guardians to chaperone a field trip.



Girl Scouts and Pre-K children engage in a hands-on activity during a school "Science Night."

"Just wanted to let you know how happy we are with the RESET program, and to plug that if there are any other volunteers looking for schools, I have a whole building full of students eager to get their hands on the sciences!"

—Amanda Oberski, Ludlow Taylor Elementary School, DC

Connecting with the Community



A volunteer works with students at one of the community service organizations with which RESET partners.

- **Attend science nights at your school.** You might request the opportunity to set up a table where you and students can demonstrate RESET activities done in your classroom.

- **Invite your teacher to share** any newsletter articles or fun photos they've taken (if students have photo release clearances) with the principal and staff, other teachers and parents/guardians. Please be sure to pass these on to RESET, as they are ideal for various outreach activities.

Other Ways to Give to RESET

Besides volunteering at a school or education center, RESET volunteers can give their time and expertise in other ways. Here are a few suggestions:

- **Get the word out!** Recruiting new volunteers is critical to fulfilling RESET's mission. Be sure to tell your STEM friends and colleagues about RESET's need for volunteers, and encourage them to join you for a classroom session and to check out www.resetonline.org. If your colleague will join you in the classroom, notify your teacher in advance. Let RESET know about a professional society, workplace, or other organization that would be a good volunteer recruiting partner.

- **Assist in fundraising.** Some fundraisers require displays, demos, table coverage, or mailings for appeals. Please note these opportunities when they are posted on RESET's social media.

- **Make a donation or encourage your friends and family to make a donation.** RESET participates in a number of fundraisers each year, including Do More 24, Giving Tuesday, United Way, and the Combined Federal Campaign. Donations can be made at any time on RESET's website.

- **Become a lead volunteer.** Lead volunteers are veteran RESET volunteers who have achieved a high level of training and classroom experience. They serve as models and mentors for new volunteers and assist in improving RESET's volunteer training program. Ask RESET's Executive Director what you need to do to qualify to become a lead volunteer.



Lead volunteers chat at a volunteer orientation seminar.

• **Participate in RESET’s social media outlets.** RESET has Facebook, LinkedIn, Twitter, YouTube, and Blog accounts. Sign up for these programs and follow and “like” our postings. Posts by volunteers are very effective in getting RESET’s story out to recruit more volunteers and school partnerships. Contact RESET if you are interested in posting a Blog article.

• **Join RESET’s Planned Giving program.** In 2015, RESET established the Harold I. Sharlin Fund for Planned Giving. This fund gives volunteers and other RESET supporters the opportunity to make a bequest to RESET in their estate plan. Consider designating RESET as a beneficiary when you are establishing or updating your will. Such legacy gifts will ensure RESET’s future for years to come.



Thank You!

While it may be tempting to complain about lower academic standards and achievement, it’s a much greater challenge—and far more rewarding—to get involved and make a difference! Your service on behalf of RESET will help spark the interest and shape the attitudes and achievements of future generations.



“Through RESET, I truly feel that I have made the biggest impact I can make in my own community. RESET allows me to use my skills as a scientific researcher and bioengineer to make science more fun and accessible to young students. When I was in elementary school, my first experience with science was positive and engaging. Through RESET, I can create the same positive and engaging experience for the next generation of scientists.”

—Volunteer, Camille Davis

Appendices

Appendix A— Frequently Asked Questions



1. What credentials do I need to become a volunteer?

RESET volunteers have pursued a STEM career or are studying to do so. There are no educational requirements. Some volunteers have advanced degrees or have worked for many years in a STEM profession, while others have just started their careers or education in a STEM field.

2. How do I prepare to become a RESET volunteer?

Please see page 9, which lists the training requirements for becoming a volunteer.

3. Do I have a choice of where I volunteer?

Yes; you may choose a school based on proximity to you, the type of school or student you want to work with, or a preferred teacher. See more on pages 10–11.

4. What if I show up and my class has been cancelled?

Teachers are responsible for informing you of any schedule changes or absences. This is why establishing contact preferences is very important before you begin your six-week session. This issue should be addressed first with the teacher and, if a problem occurs, reported to RESET's Volunteer Coordinator.

5. Will I be left alone in the classroom?

Teachers or other school officials are required to stay in the classroom during the entire RESET session. The best way to avoid a problem is to make sure the teacher is aware of this requirement from the start. Please report any issues to RESET's Volunteer Coordinator so that the issue can be addressed with the teacher.

6. What should I do if the teacher doesn't participate?

Teachers are strongly encouraged, but not required, to participate in your sessions with the students. RESET sessions tend to be more successful with teacher participation and most teachers are eager to join in.

7. How much of a time commitment will I need to make as a volunteer?

This will depend on whether you are a veteran volunteer or a new volunteer, and on whether you volunteer individually or as part of a team. A first-year volunteer typically spends 4 hours in training, 12 hours in preparation, and 6 hours in classroom sessions. Travel is additional.



RESET volunteers are individuals who have worked in a STEM career or are studying to do so.

8. Do I have to pay for the materials I use in the classroom?

No. RESET will reimburse for all reasonable expenses. Guidance is provided on the maximum amount that can be spent.

9. Why does RESET emphasize hands-on learning?

Hands-on learning is an educational method that directly involves students by actively encouraging them to do something in order to learn about it. Students find it more fun than lectures, so it advances RESET's goal to spark enthusiasm for STEM. (See pages 6–7 for more on RESET's program goals and teaching philosophy.)

10. What if I have a busy fixed schedule?

We understand that some volunteers have more available time than others. (We have volunteers that are retired, semi-retired, working, or still in school.) In addition to after-school and summer programs, RESET also offers opportunities to work as part of a team. We have partnered with a number of professional societies and agencies, which allow volunteers to join an employee team of volunteers, in which volunteer work is shared.



Hands-on learning is ACTIVE learning, based on the premise that children retain information longer and better when they are kinetically engaged rather than passive.

“Mr. Sowa inspired me to try science and now it is one of my favorite subjects.”

—Luis, sixth grade, Pine Spring Elementary, VA

Appendix B— Sample Field Trip Venues

RESET volunteers have the advantage of being close to a diverse selection of cultural and educational venues in the DC metro area. In this section we've listed a number of volunteer- and teacher-endorsed field trip opportunities you might choose for your class. They are recommended as venues that have proved successful and logistically easy. Please don't feel limited to this list, however. Oftentimes our volunteers know of special places that aren't the typical tourist hot spots, but which offer children rich and rare educational opportunities.

Cosmic Adventures Traveling Planetarium

Based in Frederick, MD, Cosmic Adventures has been bringing its traveling planetarium programs to Maryland and Virginia since 1985. The indoor planetariums are inflatable 16- or 20-foot domes offering state-of-the-art presentations on everything from the constellations to the wonders of space flight to the effects of light pollution. The planetariums come to you, can seat as many as 50 students at a time, and are ideally suited for setup in school gymnasiums. Programs are customized for different ages and curriculum needs.



Cosmic Adventures' inflatable portable domes can be set up in school gymnasiums.

"We asked Cosmic Adventures presenter Greg Anderson to focus on the moon, as it is a big component of our science curriculum, one that is very hard to give them an appropriate perspective of in the classroom. Many of our students had not been to a planetarium, so this was a unique and dynamic experience for them. I received many positive comments from my students, including this one: 'It gave me a deeper understanding of the moon and the missions that went to the moon.' "—Christa Weber, Teacher, Crestwood Elementary School (VA)



Location: Frederick, MD; tours come to schools
Web: <http://cosmic-adventures.com>
Phone: 1-800-567-5951



Students aboard THE HALF SHELL trawler during a science field trip with Living Classrooms.

Living Classrooms

Founded in Baltimore in 1985, across a region that now encompasses Washington, DC, Virginia, and Maryland, Living Classrooms offers “science cruises” that provide shipboard experiential learning activities for K–8 students. Students have the opportunity to perform water quality testing, study plankton under a microscope, trawl for and identify various aquatic life, and even learn navigation while aboard an authentic historic vessel that traverses the Anacostia River.

In addition to the enriching lessons the volunteers have given to our students, the RESET program also funded a field trip for our fifth

graders to the Anacostia River in order to put the classroom skills they have been working on to use. Students came back from this field trip stating that this was the most amazing trip in which they have ever participated.”—Courtney Korb, Assistant Principal, Camelot Elementary (VA)

Location: Based in Baltimore, ship docks in DC

Web: <https://www.livingclassrooms.org>

Phone: 410-685-0295



Marian Koshland Science Museum

Located in downtown Washington, DC, the Marian Koshland Museum of the National Academy of Sciences features state-of-the-art exhibitions highlighting the science behind today's headlines and affecting our daily lives. The museum, named in honor of Marian Koshland, a microbiologist and immunologist, encourages visitors to use science to solve problems and engage in stimulating conversations with others. Facilitated group visits (groups of 12 to 36 participants) are offered, with two weeks advance registration. There are two areas that can be visited—an Earth Lab and a Life Lab. The Earth Lab has several stations, with information and interactive exhibits, addressing various aspects of climate change. This venue is best for older students.

“I have visited the museum several times with 5th graders from Shepherd Elementary School, and the students always say that I should offer the trip again to next year’s classes.”—Barbara Elkus, Volunteer



Location: 525 E Street, NW, Washington, DC 20001

Web: <https://www.koshland-science-museum.org>

Group visit registration: <https://www.koshland-science-museum.org/webform/group-visit-request-form>

NASA's Goddard Space Flight Center

Science at the Goddard Space Flight Center focuses on both earth science and space science. There are numerous displays, and many are interactive. Earth science topics include our atmosphere, oceans, and ice cores from the South Pole. Space science topics include the James Webb Space Telescope and an interactive display of infrared imaging, which shows the differences in temperature between the nose, face, ears, etc.

Facility tours are offered to groups with a minimum of eight people and cannot exceed 40 people. Tour participants must be at least 10 years old or in the fifth grade. Facility tours and in-house programs are only available Tuesday through Friday, at 10 a.m. and 1 p.m., with advance reservation.

The scheduled tours at Goddard consist of two parts: (1) about 1–2 hours at the Goddard Visitors Center (which is open to the public 6 days per week), and (2) a guided tour inside the facility.

At the Visitors Center there is a 20-minute demonstration using the Science On a Sphere globe. A wide range of topics is available for presentation, but astronomy, the solar system, and satellite-based imagery of earth weather patterns and pollution patterns are very popular. There is also a dedicated room where a close-up video of the sun (collected by NASA satellites) is shown. This video has a resolution that is 8 times better than high-definition TV pictures, and includes simulated sounds produced by gigantic solar storms.

After finishing at the Visitors Center, the students return to the bus, go through Goddard security, and are taken on a tour of two different technical areas within the Center. These usually include the Integration and Test facility where final assembly and testing of satellites occurs, prior to being shipped to the launch site, and an ultra-clean assembly area where telescopes, such as Hubble and James Webb are tested. This generally takes about 1 hour, and concludes the tour.

“We have been doing this field trip to NASA's Goddard Space Flight Center for 7 years. My fifth graders always enjoy it, and I get a lot of very positive feedback. The visit includes both tour guide presentations as well as time for the kids to explore on their own. Astronomy and earth science are the primary focus at the GSFC, and both are mainstream topics for RESET.”—Mike Fitzmaurice, Volunteer



Fifth graders sit inside the Gemini spacecraft during a field trip to the Goddard Space Flight Center.



Location: Greenbelt, MD 20771

Web: <http://www.nasa.gov/centers/goddard/home/>

Phone (For booking a tour): 1-301-286-3978

National Electronics Museum

Located within minutes of Baltimore's BWI-Thurgood Marshall Airport and the BWI Rail Station, the National Electronics Museum offers a wide variety of both static and interactive displays that expose students to the electronic marvels that have helped shape our world. One-hour guided tours are offered for students, who are led through the galleries to learn about electronic inventions such as the telegraph, radio, radar, satellites and many others. Many of the exhibits offer hands-on activities for student exploration.

"I am an electrical engineer and I like to take 4th- and 5th-grade students to the museum because it has hands-on experiments that reinforce what I have taught them in the classroom. They have fun and learn something too. They especially like to see their voice on an oscilloscope and to see themselves on TV."—Bill Gill, Volunteer

Location: 1745 West Nursery Road, Linthicum Heights, MD 21090

Web: <http://nationalelectronicmuseum.org>

To schedule a tour, email Kirsten Messinger at: nem.education@gmail.com or call 410-765-2345



A RESET volunteer and students with a bird house they built while studying animal habitats.

Rock Creek Park Nature Center and Planetarium

Located in the Friendship Heights area of Washington, DC, the Rock Creek Park Nature Center includes a children's Discovery Room, offering environmental education books and games, and a "Discover Rock Creek" bilingual (Spanish and English) exhibit geared to middle school students. The Nature Center also includes live turtles, fish, snakes, an active beehive, a bird observation deck, and "water-wise" garden. Also located within the Nature

Center is the Rock Creek Park Planetarium, which uses high-tech Spitz software to project the image of the night sky onto a large, dome-shaped ceiling. Rangers are available to lead students on a journey of exploration into the solar system, galaxy, and beyond. A one-half mile self-guiding interpretive trail, the Woodland Trail, begins behind the Nature Center, while a one-fourth mile wheelchair-accessible Edge of the Woods trail begins right out the front door.

"The field trip to Rock Creek Park was jam-packed and educational! There is definitely a lot to do both in and outdoors. The park ranger was knowledgeable and provided an awesome experience in the planetarium!"—Sandra Hernandez, Volunteer

Location: 5200 Glover Road, NW

Washington, DC 20008

Web: <https://www.nps.gov/rocr/planyourvisit/naturecenter.htm>

Phone: 202-895-6000



Smithsonian Institution's National Air and Space Museum

Students will learn about the history of air and space technology and advancements through exhibits and hands-on explorations. Students have the opportunity to participate in science demonstrations and virtual reality simulators.

"The National Air and Space Museum provided opportunities for my students to learn about aviation and space travel. Students learned about the history of airplanes and how we have advanced with new technologies and designs. Students were excited and fascinated by the airplanes and rockets they saw in the exhibits. Also, students were able to make connections to what they have learned in the classroom and to STEM careers."

—Claudia Austin, ESOL/STEM teacher, Richard Montgomery High School



Location: Independence Avenue at 6th Street, NW, Washington, DC, 20560

Web: <http://www.nasm.si.edu>

Phone: (202) 357-2700; Group Reservations (202) 633-2563

Steven F. Udvar-Hazy Center/National Air and Space Museum

Located in Chantilly, Virginia, the Steven F. Udvar-Hazy Center is the Smithsonian National Air and Space Museum's companion facility. Opened in 2003, it has two hangars that display thousands of aviation and space artifacts. The Center offers daily tours and educational activities for students, which can be reserved online. A typical student visit can include an IMAX film on aviation or another science topic, one of several "learning labs," and a docent-led tour of some of the many displays, including space flight, military and antique aircraft, sport aviation, and even a Transformer exhibit. There is a cafeteria on site, but students can also bring their own lunches. Reserve as far in advance as possible, as the field trip slots tend to fill up.



A field trip to the Steven F. Udvar-Hazy Center for a viewing of the IMAX film "Dream Big—Engineering Our World."

"The students seemed very interested and absorbed a lot of information from the movie, lab and tour. The paper airplane lab covered many principles of flight that were well presented. The students also enjoyed the activity of making and throwing paper airplanes in various configurations through an opening. During the tour, our guide was constantly bombarded with questions from my group. Overall, I thought the trip was well organized and very successful."—Harold Smith, Volunteer

Location: 14390 Air and Space Museum Parkway, Chantilly, VA 20151

Web: <https://airandspace.si.edu/udvar-hazy-center>

Phone: 703-572-4118



Smithsonian Institution's National Museum of Natural History

The largest natural history museum in the world, the Smithsonian Museum of Natural History offers a variety of free, 60-minute, standards-aligned, staff-led school programs for students. For all trips it is recommended that the volunteer decide what the focus will be and steer the group accordingly. Exhibitions are organized by topic, such as fossils, live insects, and mummies. When there is enough advance notice and space available at the museum, try to book Q?rius for 5th graders and Q?rius Jr. for 3rd and 4th graders. These are museum-run programs in their respective departments, where museum educators guide the students through various discoveries. The best way to appreciate the richness of these experiences is to visit the Museum of Natural History website and look for "Q?rius" under Intensive Interactive exhibits.

"When going to the Hall of Human Origins, I guide the students through some of the early hominids and look at the skulls and how they change over time. Many of the videos in the exhibit directly relate to the question I often pose in class: 'How do we know what these people looked like?' The kids enjoy the museum: It gives them a chance to look at some of the things discussed in class and to explore areas they may not have seen before."—Beverly Yett, Volunteer



Location: 10th Street & Constitution Avenue, Washington, DC 20560

Web: <http://www.mnh.si.edu>

Phone: 202-633-1000 or TTY 202-357-1729

To schedule a tour for groups, call 202-633-1077



Under the Sea provides traveling aquatic life programs to DC metro-area schools.

Under the Sea

Under the Sea has offered programs on aquatic life, with live sea animals and presentations by professional marine biologists, since 1995. Programs such as "Sharks!", "Chesapeake Critters," and "Coral Reefs: Cities Under the Sea" entertain students with interesting facts and details about marine life, while also keeping them engaged, with live animals for viewing and touching.

Programs are 45–60 minutes, but can be modified to shorter formats. Ideal for grades K–5.

"When taking a field trip away from school wasn't possible, RESET provided our students with an in-house field trip. The Under the Sea program gave our students awesome hands-on experiences with various marine animals and delivered a fun, fact-filled presentation. They also did a great job of bringing the ocean to the classroom and tying in what students can do to help protect marine life."—Darielle Robinson Timothy, STEAM Lab Teacher, Sugarland Elementary School

Location: Located in Sterling, VA; tours come to schools

Web: <https://www.touchthesea.org>

Phone: (703) 464-4763 or (800) 986-3732

Fax: (703) 439-2826





Classroom Adventures in
Hands-On Science & Math

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