ASM Materials Camp®-Teachers

MATERIALS CAMP®
ASM MATERIALS EDUCATION FOUNDATION

GUIDELINES

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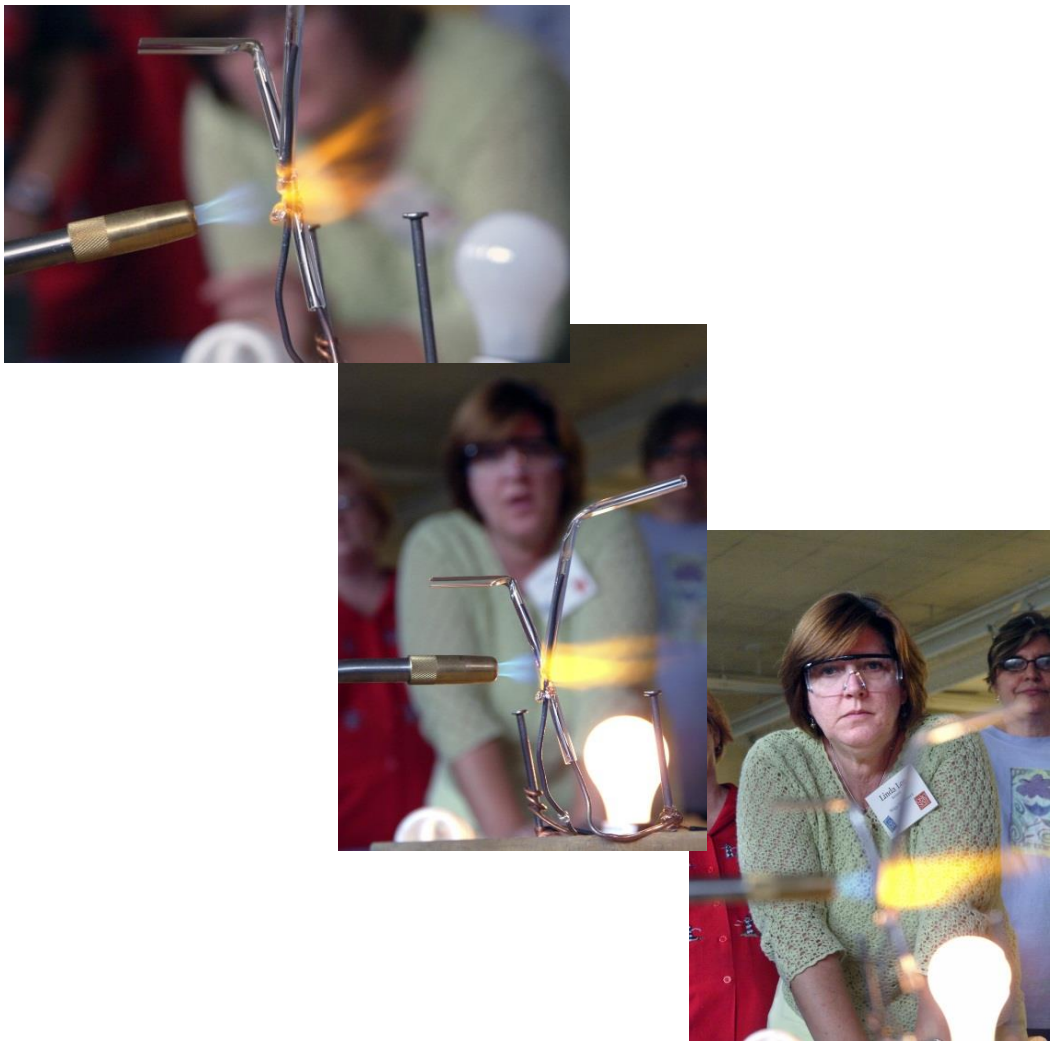

ASM MATERIALS CAMP®-Teachers

The **ASM Materials Camp®** for teachers is a week-long professional development experience held every summer focused on enriching, stimulating, and enhancing the technical competence and teaching skills of high school and middle school STEM teachers. Emphasizing common, everyday man-made physical materials, the program shows and provides teachers with hands-on experiences and classroom enrichment labs and demonstrations that are proven to engage students in science, engineering, technology and mathematics.

Primary instructors are a team of experienced high school "Master Teachers", who have taught materials science courses for many years and helped develop this innovative approach to hands-on learning of applied science principles. Teacher Materials Camp participants reported unanimously that they were: (a) "More confident in explaining complicated subjects", and (b) "Gained new ideas and approaches to instruction".

"I can't say enough about this camp. It provided me with an increased enthusiasm and confidence for my class material. ***I can't wait to use just about everything I learned*** *and to demo all the free items, and purchase some of the things we got familiar with in the workshop...chemical use, propane use, lab procedure techniques..."* Lynne Sojda, Gilmour Academy, Akron, OH Teachers Camp

Since 2002, thousands of high school and middle school teachers have attended ASM Materials Camps held during the summer at universities, community colleges and high schools in the United States and Canada. Educators receive four Continuing Education Units for attending and have the option to receive graduate level credits. They also acquire the curriculum and supplies for their own classroom.

The ASM Materials Education Foundation was founded in 1952 and has been devoted to promoting applied science careers for students and teachers. We fund undergraduate scholarships, numerous educational outreach activities, and operate our award-winning **Materials Camp®** program for students and teachers.

To learn more about the ASM Materials Camp program for teachers, visit www.asmfoundation.org or contact:

Jeane L. Deatherage
Program Coordinator
ASM Materials Education Foundation
Materials Park, OH 44073-0002
Jeane.deatherage@asminternational.org
1-440-671-3831

THE BASICS

Funding Required

- Commuter teachers camp costs $25,000+ (does not include administration and overhead)
- Residential teachers camp runs $30,000 to $40,000 (does not include administration and overhead)

Role of the ASM Materials Education Foundation

1. Training and coordination of Master Teachers and camp content
2. Centralized supply ordering and shipping to camp location
3. Recruitment efforts through email blasts, Facebook ads, attendance/presentations at appropriate conferences
4. Advertisements in NSTA (National Science Teachers Association) publications
5. Initial equipment purchases
6. Evaluation of program for continuous improvement and to aid in fundraising efforts
7. Fundraising to support camps that do not cover full cost
8. Development of efforts to maintain teacher contact throughout the school year
9. Work with the camp organizing committee from planning to end of camp.
10. Provide the 2 Master Teachers for the camp.
11. Initiate and facilitate planning meetings (via teleconference) to involve:
    - Master Teachers
    - Local organizers
    - Lab manager of the host facility
    - Foundation staff (Administrator of Programs)
12. Serve as finance manager – most expenses are paid through ASM Foundation; i.e.,
    - Purchases made by the Master Teachers – consumables for the camp; handbooks, etc.
    - Master Teachers' salaries
    - Master Teachers' travel expenses

    Note: All funds / contributions for the camp are sent to the ASM Foundation.
13. For U.S. and Canada teacher camps, registration is centralized, so ASM Foundation will provide a list of registrants periodically to the organizers.
14. Certificate of Completion is obtained electronically upon participant's completion of the post-camp evaluation.

Role of Host / Chapter Local Organizers (Various Jobs)

- **Camp Organizer** – Main coordinator, serves as liaison with Foundation staff leading up to the camp and with the master teachers during the week
- **Fundraiser** – Raise funds for the camp from: school district, chapter members and their employers, community foundations, other local companies (Corporate and foundation requests can be coordinated with the Foundation)
- **Location Logistics Coordinator** – Responsible for securing the location for the camp, being sure that the appropriate space is available, arrangements are made for storing supplies leading up to the camp, and assuring that parking is available for the teachers attending.
- **Meal Coordinator** – Someone needs to coordinate lunches for the group, whether that is ordering something to be delivered, picking up food and bringing it to the camp, or coordinating vouchers for teachers to go out to lunch on their own. Minimal morning and afternoon snacks are also usually provided and would be picked up by this person.
- **Publicity / Recruiter** – This person will recruit teachers to attend the camp through regional education services organization, contacting school administrations, and reaching out directly to teachers. While the Foundation does some recruiting efforts from the office, it is always much more effective to have someone in the area reaching out to the teachers. A Foundation template press release can be used to publicize the camp in local media, encourage stories about the camp and its participants, and either take photographs on his or her own to send to the Foundation or have someone else take photographs.

Organizing an ASM Materials Camp-Teachers

TIMELINE

12 months before	11	10	9	8	7	6	5

Identify Organizing Committee → Planning Meeting → Solicit funding/ sponsorship

Identify local Materials Camp Chair

Decide dates & communicate w/ ASM Foundation

Create a flyer/announcement of the camp for distribution (Attachment A - sample)

(ASM Foundation shares with organizers)

Recruit teachers -
1) Communicate to local schools, target science, math, technology teachers, departments heads
2) Send press releases to local newspapers & other media
3) Work with university outreach department to use their mailing list/contact information of teachers that went through their programs

Teleconference involving:
1) Local organizers
2) Master Teachers
3) ASM Foundation Staff

Identify Venue

Arrange:
1) Catering (lunches & snacks)
2) fieldstrip/s
3) Transportation for fieldtrips
4) "Graduation" Ceremony

4	3	2	1	2wks	CAMP	1 wk	1month

Applications Received

Create program/schedule
(coordinate w/ ASMF staff)

Selection of Participants
(NOTE! Plan to over-recruit. Typical camp has 30 participants. Have at least 5 alternates for possible last minute cancellations

Send details (driving instructions, specific location, copy of schedule, etc.) to participants
(Coordinate w/ ASMF Staff)

Receive, check & store boxes received from ASM Foundation for camp: Handboks, Binders, shirts (if ordered), consumables, certificates

"Thank you" letters to sponsors and volunteers

Prepare Report

ASM Foundation sends copy of participants' database to organizers

Send "Welcome" email

CONTACT:
Jeane Deatherage
Program Coordinator
ASM Materials Education Foundation
Materials Park, OH 44073
jeane.deatherage@asminternational.org
440 671 3831

ASM MATERIALS Camp®-TEACHERS

RECRUITMENT TIPS

Overview: The recruitment of teachers as participants for a local Materials Camp is perhaps the most important, time consuming, labor intensive and most difficult task facing local organizers.

Keys to Success: Enlisting a large team to collectively "OWN" this issue. Provide each with a modest achievable goal; a 30-day deadline to act; and recognition for efforts. Start recruitment immediately. Seek 35 participants to account for last minute cancellations. Consider a friendly competition contest.

TACTICS TO CONSIDER

Word of Mouth

- Ask all past teacher participants from area to assist.
- Ask all past student participants from area to assist.
- Recruit a team of local ASM Chapter members to each make one personal visit, by appointment to their own neighborhood high school.

Higher Education

- Meet with senior officials of local community college / university to enlist their support and secure their databases of secondary schools / teachers / organizations.
- School of Education
- School of Engineering
- School of Science
- Outreach / Community Relations
- Extension
- Federal Programs
- Admissions / Student Recruitment
- External Affairs

Secondary Education

- Local School Board of Education: Attend a meeting, seek opportunity to speak and promote

Professional Organizations

- National Science Teachers Association – state or local chapters: seek promotional support on websites, newsletters
- Teachers Professional Associations: contact and seek assistance, endorsement and promotional help
- Seek help and make alliances and partnerships with other Societies: American Chemistry Association, NACE, SAMPE, TMS, MRS

Local Media

- Send simple flyer, press release or fact sheets to all regional media outlets
- Newspapers: Education reporter, Editorial Board
- Weekly neighborhood newspapers
- Monthly regional news magazines
- Consider low cost / donated small advertisements
- Seek out local talk radio show guest appearances

Websites

- Author and place prominent articles on Chapter website

JOIN US!
FREE STEM PROFESSIONAL DEVELOPMENT FOR TEACHERS

BEACHWOOD HIGH SCHOOL
BEACHWOOD (Cleveland), OH | JUNE 26-30, 2023

OUR PROGRAM

ASM Materials Camp®-Teachers is a free, week-long, idea-generating workshop introducing teachers to methods that make math and core science principles more enticing and relevant to their middle and high school students. Materials topics are great motivators in any engineering, technology or science course as students learn concepts that are reflected in their everyday lives.

WHAT MAKES US DIFFERENT

Teachers leave our camps able to engage students using simple, low-cost experiments that integrate into existing lesson plans.
Participants are eligible to receive four (4) Continuing Education Units (CEUs) and can opt for two (2) graduate level credits.

REGISTER TODAY

For more information and to view the 2023 ASM Materials Camp®-Teachers Summer Schedule, please visit asmfoundation.org

SCAN ME! Watch a video about ASM Materials Camp® Teachers!

"I couldn't help but say many times 'I can't believe this camp is free!' I knew that this camp had a sterling reputation based on blogs read from other teachers, but my expectations were exceeded between the physical materials used for labs, freebies, wealth of information, and lessons provided by master instructors. This was the best professional development camp I have ever attended."

—Amanda S.

QUESTIONS?

Jeane Deatherage, Administrator of Foundation Programs
jeane.deatherage@asminternational.org | 440.671.3831

MATERIALS CAMP®
ASM MATERIALS EDUCATION FOUNDATION

ASM MATERIALS Camp®-Teachers

Materials Science and Technology

Overview of Curriculum

Background

The program is based on past experiences in the areas of curriculum development, teacher training and student programs in Materials Science developed at the University of Washington and Edmonds Community College and supported by the National Science Foundations Advanced Technology Education program. These programs have demonstrated that Materials Science is an excellent tool to bring together academic and vocational instructors in a common goal of exciting students about science, technology and engineering.

Philosophy

Materials Science excites students' interest because the student has everyday, hands-on experience with materials. Thus, materials topics are great motivators in any engineering, technology or science course. Materials are also a very important and an integral part of the manufacturing process.

Curriculum

During this one-week workshop, teacher participants will learn the basics of Materials Science Technology as taught at the high school level. They will work hands-on with metals, ceramics, polymers and composites, and will develop a greater appreciation for the importance of these materials to modern life. The teachers will see how this heavily project-based course excites students to learn science concepts as they complete projects of personal worth to them. Whether teachers use the information and concepts as a basis for teaching their own MST course or merely infuse the concepts into an existing science course to increase relevancy, they will finish the week prepared to make some important instructional changes as a result of their participation.

SOLIDS

Topics

- Importance of materials
- Four categories of solids
- Simple chemistry made easy
- Chemical bonding
- Periodic Table of Elements – it can be useful and fun to learn
- Oxidation-reduction

Experiments/Labs

- Identification of Materials
- Formation of Crystals
- Destructive Testing
- Activity Series of Metals
- Oxidation/Reduction of Copper

METALS

Topics

- History of metals and use
- Properties of metals
- Mechanical properties
- Effects of heat treating
- Types of alloys; alloying techniques
- Phase diagrams
- Testing metals
- Manufacturing processes

Experiments/Labs

- Rolling a Coin
- Drawing a Wire
- Alloying Copper and Zinc
- Actual Cost of a Penny
- Making a Light Bulb
- Making Tin-Lead Solder
- Annealing Copper
- Powder Metallurgy
- Lost Wax Casting

Project

- Making sterling silver jewelry via lost wax casting techniques

CERAMICS/GLASS

Topics

- Ceramics are crystalline solids
- Ionic and covalent bonds
- Glass properties are different: amorphous structure
- Manufacturing processes

Experiments/Labs

- Forming, Firing, and Glazing Clay
- Thermal Shock
- Glass Bending and Blowing
- Glass Batching and Melting
- Dragon Dribble/Dragon Tears
- Coloring Glass
- Ceramic Slip Casting

Project

- Making Raku
- Melt and pour liquid glass

POLYMERS

Topics

- Classification of polymers
- Altering chemically or with additives
- Recycling concerns
- Chemical changes through cross-linking
- Synthetic polymers & chemistry involved
- Historical developments
- Manufacturing processes

Experiments/Labs

- Cross-Linking a Polymer
- Polymer Identification
- Making Nylon 6-10
- Latex Rubber Ball
- Memory in Polymers
- Epoxy Resin Cast
- Polymer Foam Creations

Project

- Slime

COMPOSITES

Topics

- Types of composites and categories
- Strength-to-weight ratios
- Strength measuring, testing, altering
- Wood and concrete: traditional composites
- Fiber reinforced composites
- Graphite and Kevlar fibers

Experiments/Labs

- Stressed-Skin Composites
- Compression and Tension in a Bending Beam
- Using Portland Cement to Make & Test Concrete
- Hand Lay-Up of a Glass Fiber Reinforced Polymer
- Plaster of Paris Matrix Composite
- Laminated Wood Beams

ASM Materials Camp-Teacher I - AGENDA

DAY ONE - 8:00 AM-5:00 PM w/ morning & afternoon and lunch breaks

- Welcome and Introductions
- Opening Labs - Raku, Cement Pucks
- Oobleck Activity
  - How can bulk scale properties of substances be explained?
- Materials ID Activity
  - What properties do various materials have?
  - What are Materials?
  - What is Material Science?

SOLIDS - Examination of material properties. Discussion of bonding and atomic arrangements that influence properties

- Chemical Bonding Basics
- Crystals
  - Crystal Lab Stations - How are crystals formed?
    - borax crystals - multiple crystals
    - copper sulfate - single crystals - make solutions and grow seed crystals
    - sodium acetate - crystals from supersaturated solution - make solutions
    - copper crystals in test tube - crystals from chemical reactions
  - Crystal Models Activity
    - How are atoms arranged in various crystalline structures?
    - How does that affect the workability of a metal?
- Small Group Breakout Sessions - group by grade level/content area
  - What questions do you have about the content or activities?
  - How can activities and content be implemented in our current classrooms?
  - Where might these activities fit with what you are already doing?

DAY TWO - 8:00 AM-5:00 PM w/ morning & afternoon and lunch breaks

- Review and Questions

METALS - Find out how metal properties can be changed in advantageous ways - heat-treating, cold-working, and making of alloys

- Solid State Phase Changes - Iron Wire Demo
- Nitinol
  - Observe how a solid state phase change can be used.
- Crystal Defects
  - How do crystal defects affect the properties of metals?
- Work Hardening of Metals Activity
  - How does work hardening affect the properties of metals?
- Heat Treating of Steel Lab
  - How does heat treating affect the properties of metals?
- Material Properties and Stress/Strain Curve
  - Strength, toughness, ductility, elasticity/plasticity, hardness, failure
  - What information does a stress strain curve tell us about a material?
- Small Group Breakout Sessions - group by grade level/content area

What questions do you have about the content or activities?
How can activities and content be implemented in our current classrooms?
Where might these activities fit with what you are already doing?

Metal Stations
Check seed crystals & string them in solutions; troubleshoot that
Rolling a penny
Exploring workability,, specifically malleability
Making alloy pellets
Why are metals alloyed?
How does alloying affect properties, esp melting point?
Brassing a penny
Make zinc solution & start the brassing process; troubleshoot
What is solid state diffusion?
Cost of a penny
Introduction to corrosion activity to investigate reactivity of metals

Binary Phase Diagrams (Bi/Sn) Activity

DAY THREE - 8:00 AM-5:00 PM w/ morning & afternoon and lunch breaks

Review and Questions

CORROSION - A deep dive into corrosion, including ways to inhibit corrosion. Real-world applications of redox reactions. - A deep dive into corrosion, including ways to inhibit corrosion. Real-world applications of redox reactions.

Mr. Copper & Ms. Sulfate - Developing the activity series Lab
Aluminum pop can and acid
Flameless ration heaters & hand warmers
Thermite Spheres: rusty iron and Al

AMPP Labs

#1 – Corrosion Exposure - hydrogen peroxide and steel woo
What factors affect rates of corrosion?
#3 – Fruit Juice Objective
What are practical ways that activity series can be used?
#4 – Polycoat - pop can and solutions (pH)
How does pH affect the corrosion of aluminum?
#5 – Quick Silver - cleaning tarnished
How can you use redox principles to clean tarnished silver?
#6 – “Silver” pennies
Electroplating - revisit, discuss, demonstrate

Spotlight on Corrosion video
AMPP kit evaluation QR code
Small Group Breakout Sessions - group by grade level/content area
What questions do you have about the content or activities?
How can activities and content be implemented in our current classrooms?
Where might these activities fit with what you are already doing?
Field Trip - usually Wed afternoon

DAY FOUR - 8:00 AM-5:00 PM w/ morning & afternoon and lunch breaks

Review and Questions

CERAMICS / GLASSES - Metals corrode into ceramics. Investigation into ceramics properties.

Comparisons of general ceramics properties vs. glass properties, specifically.

Glaze raku treasures

What is a ceramic and its properties?

Rate of heat transfer (Al vs. Al_2O_3)

Aluminum wire demo

Thermal shock demo (3 glass rods) & station

Compare and contrast soda lime, borosilicate, and fused silica glass

How do their components affect their properties?

Annealed Glass vs Tempered Glass

How can heat treating affect the properties of glass?

Glass Station Lab

Exploring the softening/melt range of glass

Pulling a fiber optic

Glass bend and Glass bubble

Use polarizing film to view stresses in glass bend

Glass bead on a wire (borax)

How can metal oxides impart color to glass?

Small Group Breakout Sessions - group by grade level/content area

What questions do you have about the content or activities?

How can activities and content be implemented in our current classrooms?

Where might these activities fit with what you are already doing?

POLYMERS - Polymers bring nonmetals and covalent bonds into focus. Different ways of categorizing polymers are explored - natural vs. synthetic, method of forming, how they react to heat. Activities include exploring cross-linking effects, methods of polymer formation (thermoset vs. thermoplastic), and more about intermolecular forces.

Polymer Powders: Water lock, Instant snow, HDPE powder

Why are some polymers hydrophobic or hydrophilic?

How can cross-linking affect polymers?

Gel crystlas / spheres

Beaded chain demo

How may monomers are in a polymer?

Polymerization

How do monomers link together to make polymers?

Additional polymerization - hand-holding simulation

Nylon demo - condensation polymerization

Polymer Chain Alignment

How do polymer chain arrangement affect the properties of polymers?

LDPE vs HDPE polymers - branched vs. linear

Newspaper Strip Activitty: Investigating chain alignment

Heat gun and HDPE jug Demo

Polymer Station Labs
- Make PVA solution (with microwave if they are available)
- Shrink to fit (memory polymer)
  - Example of a thermoplastic polymer
- Polydensity tubes
  - Examining polymer densities
  - Examining the "salting-out" process
- Biopolymers
  - What are the differences between polymers made from various macromolecules - starches, proteins?
  - How does the ratio of plasticizer affect the properties of a polymer?

Small Group Breakout Sessions - group by grade level/content area
- What questions do you have about the content or activities?
- How can activities and content be implemented in our current classrooms?
- Where might these activities fit with what you are already doing?

DAY FIVE - 8:00 AM-3:00 PM w/ morning break and luncheon

Review & Questions

Thank you notes

Fire Raku Pots

Test Cement Pucks - very simple discussion of composites and how combining multiple kinds of materials can maximize desired properties.

POLYMERS continued

Cross linking (PVA solution)
- What are the effects of cross-linking on properties?
- What are the limits of cross-linking on properties?
  - Happy/sad balls Demo
  - Slime lab (cross-linking)

Thermoset vs. Thermoplastic
- How do properties of polymers vary and affect recyclability?

Polymer Stations
- Biopolymers testing
  - Explore the properties of the plastics made, revisit materials properties from Day 2 - tensile strength, toughness, and degradability.
- Eurocast clips or smaller molds (polyurethane cast
  - Example of a polymerization reaction and a thermoset plastic.

Evaluations & Wrap-up

Luncheon

ASM MATERIALS EDUCATION FOUNDATION℠

ASM Materials Camp®-Teachers

Host Facility Requirements

NOTE to host / facility lab manager: Please mark the list below and indicate which items are available or not available, and we'll discuss during the first planning meeting (via teleconference) with hosts / lab manager, master teachers, and ASMF Administrator of Programs.

Lab Equipment

- Furnaces/ovens that go to at least 1000°C and preferably to 1050°C
  - 1 larger (about 12" x 12" x 10") **or** 2 smaller (about 8" x 8" x 8")
  - digital or programmable – will be used for metals and ceramics/glass
  - front loading
- Tongs, gloves, and face shields for hot work using the furnaces
- Bunsen burners or propane torches – at least 6
- Benches with a couple of vises with a method of attachment (C-clamps for example)
- Assorted Glassware – beakers, graduated cylinders, test tubes
- Fume hood – desirable but not crucial
- 15 amp, 120 volt circuits for iron wire demo
- 2 Ring stands
- Bench-tops/counter space for up to 30 participants – preferably high temp and chemical resistant
- Safety glasses
- Hot plates – preferably ceramic top and metal coil (like a stove-top) – 2 of each would be great
- Electronic scales – 2 that go to decigrams and 1 to centigrams – capacity of at least 200 grams
- Variac – 0 to 140 volts with 10 or 15 amp fuse
- Extension cords
- C-clamps - at least 2
- Basic hand tools – hammer, pliers, screwdrivers (Harbor Freight quality)
- 5 gallon plastic buckets – 2
- Sink with running water
- Rolling mill if possible (with a method of attachment such as C-clamps)

- Microscopes – one stereoscope and one optical and capabilities of being connected to a screen or monitor
- Metal container with lid for Raku ceramic project – popcorn tins and metal garbage can lids work great or coffee cans if doing very small projects in a fume hood
- Very large cart (a freight cart) and a room to which we can transport materials for locked storage. This is in addition to the supplies and set-up room, the bench top, laboratory room, and the kiln room.

Master teachers will need to discuss the logistics and feasibility of the Raku project with the person in charge of the local lab facilities.

Classroom & Lab - for discussion/lecture/demos - for the exclusive use of the camp during the week, including evenings as the teachers leave quantities of materials at their desks overnight

- Overhead projector
- Computer projection unit
- Flexcam or Elmo or Vision Viewer
- Internet access including YouTube
- Whiteboard or chalkboard
- Table/counter for demonstrations in front of the room
- Seating for 32+
- Since the camp is held in the summer, classroom must have working air conditioning and working thermostat.

Note:

  - Classroom to seat up to 35 people – for lecture and mini-demos
  - Lab need to safely fit ~30 people. If necessary (or if labs are small), possibly use 2 adjacent labs. (Or, we can limit the number of teachers accepted to the program based on capacity.)
  - Lecture room and lab/s preferably close to each other or on same floor level.

General

- On-site readily available, experienced lab assistant with access to all facility resources
- Assistance with shipping materials at the conclusion of the camp
- Assistance with set-up on the weekend immediately preceding the camp
- Temporary storage area to accommodate pre-camp delivery of 20+ boxes of consumable supplies/equipment
- A secure and lockable storage/prep area for supplies and equipment during week of camp
- Reliable and affordable food service for morning and afternoon beverage/snack break
- Preferably group meals or box lunches be delivered to camp.

- Hotel with complimentary breakfast and shuttle van service (to airports, laboratory/classrooms) for residential camps only (or if host has housing facilities, that's great too!)

****

ADDITIONAL NOTES:

1) All items on the list above will be covered during the first planning meeting, via teleconference, involving:
    - Local organizers (host & ASM local chapter-if chapter is involved)
    - Lab manager of host facility
    - Two Master Teachers assigned to the camp
    - Administrator of Foundation Programs
2) We request the host facility (lab manager) to mark the items – available or not available – prior to the first meeting, so all involved are aware of the items that need to be acquired / purchased.

Planning Meeting Outline (Conference Call)

Camp Location:
Camp Date:
Hosts / Volunteers / Master Teachers

Volunteer / Host Names	Affiliation/Role	Email	Cell Phone #s
Master Teachers			
ASMF			
Jeane Deatherage	Coordinator	Jeane.deatherage@asminternational.org	

Discussion Points/Questions:

1) Facility/Equipment Requirements (Refer to separate document on Facility Requirements)

List items that are available for use at Camp:

Questions or uncertainties about items on the list:

List items that need to be found for use at Camp:

- Could pictures of the facility be sent to the Master Teachers?

2) Camp Details:

- Date Master Teachers arrive:
- Date and Time to begin set-up:
- Volunteer/s to help with set-up:
- Parking for master teachers and participants:
- Will the camp have exclusive use of the rooms for the week? Can they be locked?
  - Participants leave their notebooks and other items overnight.
  - What is the distance between the classroom and the lab? Is a rolling cart available?
- Master Teachers arrive early and leave late each day. For early morning arrivals and security of facility, would keys be made available to Master Teachers?

- Name and location of nearby stores for local purchase of materials: (circle available stores)

    - Wal-Mart
    - Target
    - K-Mart
    - Home-Depot
    - Lowe's
    - Grocery Store
    - Harbor Freight

- Location and storage of incoming supplies:
    - Need a locked space for 15 to 20 boxes
    - Master Teachers will need access to all of the supplies on the weekend set-up day
    - Shipping address to be used including to whose attention:

- Internet access
    - Crucial for Master Teachers
    - Is it also possible for the participants?

- Projection system – would like to test it out on set-up day

- Name tags: whose responsibility – master teachers or local organizers?

- Access to printer and copier

- Snacks (morning and afternoon) and lunch at noon
    - Local organizers/hosts arrange

- Friday Lunch/"Graduation"
    - Make it a little more "special" than what was arranged during the week
    - Invite VIPs
        - financial supporters
        - field trip hosts
        - host site school administration
        - school administrator/counselor of schools with 2 or more enthusiastic participants (to be identified by Tuesday afternoon)
    - Discussion of general format and time

3) After the camp - boxing up, storage, and shipping
- Could volunteers be available to help?
- Need a secure location for storing leftover supplies and equipment for future camps
- The stored materials will need to be available on the weekend prior to the start of camp the following year
- Need local volunteer or host site to ship out boxes via UPS or Fed Ex by the following Monday after camp

4) Suggestion for a nearby hotel where Master Teachers can stay
- Best location that would allow good rates, safety, and accessibility to facility and shopping for supplies
- Are special rates available?

5) Field Trip

- What opportunities are available?
  - One is sufficient
  - It is best if something is being made or actively done

- Scheduling - should be limited to ½ day as possible
  - Wednesday is best but Thursday will also work
  - Take travel time into consideration
  - Transportation

6) Media

- Contact and invite local media outlets such as newspapers, TV stations, etc…
- Give them background about the camp and ask if they would do a "feature" during the week of camp

7) Volunteers/Mentors

- If there's a local ASM Chapter, members are encouraged to visit camp and interact with the teachers during lab time and breaks. (Jeane will communicate with ASM members in the area to make them aware of the camp.)
- Help from volunteers is also appreciated during set-up the weekend before camp and during Friday afternoon's clean-up and packing

8) Special considerations for planned activities:

- Oobleck activity – Monday
  - Need outside area where a messy activity will not disturb others.

- Raku Project – Friday
  - Need furnace located near an outside access door or well-vented hood
  - Furnace needs to be front-loading (see equipment list)

ASM MATERIALS
EDUCATION FOUNDATION

Visit:

www.asmfoundation.org
440 671 3800

Or contact:

Jeane Deatherage
Program Coordinator
jeane.deatherage@asminternational.org
440 671 3831