

Girls Communicating Career Connections

Video Production Curriculum

Education Development Center, Inc.

GC3 Video Production Curriculum

TABLE OF CONTENTS

Introduction	1
About EDC	1
Video Production Curriculum Goals and Objectives	2
Video Production Curriculum Goals	2
Video Production Curriculum Objectives	2
Media Literacy	3
Selected Resources	3
Useful Materials	4
Recruitment Flyer/Introductory Letter to Parents (Appendices A and B)	4
Release Forms (Appendix C)	4
Handheld Video Recorders.....	4
STEM Activities	4
Career Survey (Appendix D).....	5
The FunWorks Web Site	5
Big Picture Worksheet (Appendix E).....	5
Videos for Critique	5
Video Production Worksheet (Appendix F).....	6
Video Production Rubric for Educators (Appendix G).....	6
Evaluation (Appendix H)	7
Video Production Curriculum	8
Preparation.....	8
Video Production Sessions	9
Post-Session Activities	24
Identifying an Interviewee	26
Media Tools	27
Adobe Youth Voices	27
Copyright and Fair Use Videos	27
Creating Your Own Media	27
Jump Cut.....	27
ListenUp!	27
Media That Matters	27
MediaRights.org	27
My Pop Studio 2.0: A Game for Girls.....	28
VoiceThread	28
Youth Media Exchange	28
Youth Media Reporter	28
Youth Noise.....	28
YouthLearn on Youth & Media	28

GC3 Video Production Curriculum

Appendix A: Sample Recruitment Flyer	29
Appendix B: Sample Introductory Letter to Parents.....	30
Appendix C: Sample Release Forms	31
Sample Consent and Release Form for Parents.....	31
Sample Photo Release Form.....	31
Sample Photo Release Form.....	32
Appendix D: Career Survey.....	33
Appendix E: Big Picture Worksheet.....	37
Appendix F: Video Production Worksheet	39
Appendix G: Video Production Rubric For Educators	43
Appendix H: Formative and Summative Evaluation	45
Formative Evaluation: Youth Participant Journal	45
Formative Evaluation: Educator Documentation	46
Summative Evaluation: Video Production Curriculum Evaluation for Youth Participants	47

GC3 Video Production Curriculum

INTRODUCTION

Girls Communicating Career Connections (GC3) is a youth-produced, web-based video series and companion educator materials on science and engineering careers, targeting girls from underserved groups (minority populations, youth of low socioeconomic status, and those with disabilities). The GC3 Video Series was developed by middle school-aged girls working with Education Development Center, Inc. (EDC) in conjunction with its partners, the Young Women's Leadership Charter School of Chicago and Spy Hop Productions of Salt Lake City. The project was made possible through a grant from the National Science Foundation.

This **GC3 Video Production Curriculum** was developed by EDC and used by EDC and its partner organizations to create the GC3 Video Series.

The curriculum is intended for use by educators who are interested in exploring science, technology, engineering, and mathematics (STEM) careers with middle school girls by having them create and view their own media on the subject. Over the course of the project, young people will develop basic media literacy skills, investigate STEM experiences and career choices that interest them, identify biases and unspoken assumptions about gender roles, and interview women who are STEM professionals in a field of their interest. This curriculum can and should be adapted to fit the needs of various groups, learning styles, and forms of media; material suggestions, helpful tools and resources, and sample materials have been included to facilitate variation in the implementation of this curriculum.

About EDC

For 50 years, Education Development Center, Inc. (EDC) has been a pioneer, building bridges among research, policy, and practice. EDC's award-winning programs and products, developed in collaboration with partners around the globe, consistently advance learning and healthy development for individuals of all ages. Today, EDC manages 325 projects in 35 countries. EDC's work strengthens nearly every facet of society, including early child development, K-12 education, health promotion, workforce preparation, community development, learning technologies, basic and adult education, institutional reform, medical ethics, and social justice.

The division of Education, Employment, and Community Programs (EEC) at EDC, home of the GC3 project, offers an integrated approach to human development, which captures the creativity and potential of communities, schools, and workplaces. With diverse public and private partners, EEC works to turn promising innovations into successes that work for all people, especially those who face educational, economic, or health obstacles. EEC combines the lessons of research and practice to establish lasting systems and structures that help learners achieve, workers advance in their careers, and citizens improve their communities.

VIDEO PRODUCTION CURRICULUM GOALS AND OBJECTIVES

The GC3 project and Video Production Curriculum were designed and implemented to achieve the following goals and objectives:

Video Production Curriculum Goals

1. Generate awareness and educate youth about STEM careers by making the connection between academic content and learning experiences, their current interests, and possible careers in a variety of STEM fields.
2. Dispel myths and stereotypes youth and educators have about careers in STEM fields, about what careers are “appropriate” for girls, and about the ability of girls to succeed in what are often perceived as “careers for boys.”
3. Emphasize the importance of 21st-century skill development (e.g., leadership skills, teamwork, oral communication, and critical thinking) to career and life success.
4. Inspire youth to increase their awareness of ways to realize their future career aspirations now (e.g., choose specific courses in high school, enroll in a particular after-school program, seek out a volunteer opportunity or an adult mentor, or mentor their peers).
5. Highlight the positive social impact scientific careers have on the world (e.g., environmental and energy sciences or biotechnology).
6. Connect youth to mentors in STEM fields through substantive, hands-on methods (e.g., job-shadowing).

Video Production Curriculum Objectives

By the end of the video production project, participating youth should be able to:

1. Understand their influence as role models to their peers as a result of their participation in a video production program.
2. Readily utilize their exposure to and working knowledge of multiple mediums of self-expression to express their ideas, opinions, and thoughts.
3. Identify skills crucial to career and life success in the 21st century.
4. Gain an understanding of their own current attitudes about STEM and STEM careers.
5. Discuss the social impacts that STEM fields have on society.
6. Connect their own interests to STEM and identify the various ways in which their areas of interest are addressed by STEM fields.
7. Identify a practical and feasible (hands-on) course of action (beginning now) that will place them in a better position to achieve their career of interest.
8. Understand the technical aspects of filmmaking and video documentation.
9. Use equipment to film segments about their personal interests, their career interests, and the connections they have found between these interests and STEM fields.

GC3 Video Production Curriculum

MEDIA LITERACY

Anytime young people and educators work together on a media-making project, an opportunity arises to further develop everyone’s media literacy skills. According to the Center for Media Literacy, media literacy “provides a framework to access, analyze, evaluate and create messages in a variety of forms—from print to video to the Internet. Media literacy builds an understanding of the role of media in society as well as essential skills of inquiry and self-expression necessary for citizens of a democracy.”¹

Even though the goals of GC3 relate primarily to the exploration of STEM careers, it is important in the course of this curriculum to engage participants in discussions around media forms and formats, as well as the roles and responsibilities of media makers and consumers. Young people should have the chance to think about and explore:

- The influence that media has on themselves, their communities, and society in general
- The ways that all media demonstrates some sort of bias, either on the part of the creator of the media, the culture from which it is created, or both
- The techniques media makers use to communicate their messages, both directly and indirectly

Perhaps the most important media literacy skill that a young person needs to develop through a project such as this one is the ability to view and critique media with a critical eye. In today’s society, when we’re bombarded with mainstream media images and ideas round-the-clock, it is often hard to step back and really reflect on the messages we’re receiving. Giving your participants the chance to consume lots of interesting and thought-provoking media works, then letting them dissect and analyze the opinions and techniques will make them better media makers and critical thinkers.

Selected Resources

Below is a list of some exemplary online media literacy-related tools and resources to help educators in a project such as this. Please take time to explore these sites and adapt and integrate the tools to fit your needs.

The Center for Media Literacy – <http://www.medialit.org>

Media Education Lab at Temple University – <http://www.mediaeducationlab.com>

New Mexico Media Literacy Project – <http://www.nmmlp.org>

Media Awareness Network – <http://www.media-awareness.ca>

The Media Channel’s Teacher Toolkit – <http://www.mediachannel.org/classroom>

PBS Teachers on Media Literacy – http://www.pbs.org/teachers/media_lit

¹ Center for Media Literacy, www.medialit.org

GC3 Video Production Curriculum

USEFUL MATERIALS

The following materials were used in the production of the GC3 Video Series and may be useful in your own curriculum implementation as well.

Recruitment Flyer/Introductory Letter to Parents (Appendices A and B)

Recruitment materials may be necessary to spark the interest of youth who want to be a part of a STEM video production project. Creating flyers and sending letters home to parents/guardians in addition to in-person talks with youth about the project may be helpful in gaining attention to, and support for, the project from youth and their parents/guardians. A sample recruitment flyer and introductory letter to parents can be found in Appendices A and B.

Release Forms (Appendix C)

Release forms allowing youth to participate in video production activities and to be recorded on camera are necessary in making sure that parents/guardians, youth, and production staff are all in agreement about what the project entails. Sample release forms (consent and release form for parents and photo release form) can be found in Appendix C.

Handheld Video Recorders

In addition to traditional camera equipment, small, handheld video recorders were useful in creating the GC3 Video Series. They allowed each participant the added luxury of taking home a camera to film personal narratives and B-roll at their leisure, in addition to any work done during project sessions. Also, the easy-upload features of these cameras allowed participants to instantly upload and critique their footage during sessions and as footage was shot.

STEM Activities

STEM- or STEM career-related icebreaker activities are useful for introducing participants to this project. Not only can these activities help guide discussion towards STEM and its relation to real-world applications, but they also help foster a positive group dynamic. Some helpful sites that have wonderful ideas for STEM- or STEM career-related activities include the following:

The FunWorks – <http://www.thefunworks.org>

Gender and Science Digital Library – <http://www.gsdl.org>

Math and Science Middle School Portal – <http://msteacher.org>

National Partnership for Quality Afterschool Learning Toolkits in Science, Math and Technology – <http://www.sedl.org/afterschool/toolkits>

Thinkfinity – <http://www.thinkfinity.org>

Exploratorium After School –

<http://www.exploratorium.edu/afterschool/activities/index.php>

PBS Kids Zoom Science – <http://pbskids.org/zoom/activities/sci>

Funology.com – <http://www.funology.com>

National Partnership for Quality Afterschool Learning –

<http://www.sedl.org/afterschool/resources/curriculum.html>

Society of Women Engineers – <http://aspire.swe.org>

TryEngineering – <http://www.tryengineering.org/lesson.php>

Energy Kid's Page – <http://www.eia.doe.gov/kids/classactivities/teachers&students.html>

GC3 Video Production Curriculum

In the GC3 Video Production Curriculum, activities similar to the ones provided on these sites are conducted during Sessions 1, 2, and 4.

Career Survey (Appendix D)

The Career Survey found in Appendix D can be useful in getting participants to start thinking about STEM careers, in gaining a baseline understanding of participant knowledge of STEM and STEM careers, and in facilitating interaction between participants.

In the GC3 Video Production Curriculum, the Career Survey is utilized during Session 2. In addition, it is suggested that the completed Career Survey be used as a guide for STEM and STEM careers throughout the creation of the GC3 Video Series.

The FunWorks Web Site

www.thefunworks.org

The FunWorks is a career development digital library and career information repository for young people in middle school (ages 11–5, grades 6–9) and their educators. Developed by EDC and funded by the National Science Digital Library, the FunWorks houses a nationally recognized collection of STEM career exploration resources developed for—and by—middle school-aged youth. In addition, the GC3 Web site, Video Series and Educator’s Guide can be found via the FunWorks.

In the GC3 Video Production Curriculum, this Web site is utilized during Sessions 2 and 3.

Big Picture Worksheet (Appendix E)

The GC3 Video Production Curriculum begins with a focus on the big picture, identifying the links between STEM subject areas and problems or issues that participants are interested in addressing. Using the Big Picture Worksheet provided in Appendix E can help focus and guide a discussion on this topic. In the GC3 Video Production Curriculum, this worksheet is utilized during Session 3.

Videos for Critique

A core practice of youth media making is the viewing and critique of youth media works. Young people today (as well as their educators) are bombarded by mainstream media images and messaging, but rarely get the chance to view and critique media created by other young people like themselves. As part of the GC3 curriculum, we incorporated the critique of several media works about issues of identity or about goals and dreams as expressed by youth. Viewing works on identity can help participants talk about how they see themselves and jump-start the conversation about the representation of young people and women in the media. Other pieces, such as *Pace Maker* below, can help begin a conversation about the goals and dreams of participants and how those goals and dreams can be shared through a self-portrait format. Currently, each suggested work is freely available to view and/or download off the Internet.

GC3 Video Production Curriculum

TITLE: *The Pace Maker*

PRODUCER: Francisco Espinoza, AYV site: Boys and Girls Clubs of the Peninsula, Palo Alto, CA

URL: <http://www.adobe.com/aboutadobe/philanthropy/youthvoices>

LENGTH/FORMAT: <5:00 min/video

DESCRIPTION: We all go through life at our own pace. Steven Santos is 17 years old and has wandered in and out of school and jail, but with a new baby on the way, he has a new lease on life and a bright view for his future.

TITLE: *Girl Like Me*

PRODUCER: Kiri Davis, Real Works Teen Filmmaking

URL: http://www.mediathatmattersfest.org/6/a_girl_like_me

LENGTH/FORMAT: 7:08 min/QuickTime video

DESCRIPTION: Filmmaker Kiri Davis conducts the doll test, used in the historic desegregation case *Brown vs. Board of Education*, which sheds new light on how race in America affected the self-concept of black children. Film shows how little has actually changed.

In the GC3 Video Production Curriculum, these videos are utilized during Sessions 3, 5, and 6.

Video Production Worksheet (Appendix F)

The Video Production Worksheet can be used by educators with participants to map out and track the components of each STEM career video produced. The sample video production worksheet provided in Appendix F can be modified to include or exclude other components (such as an interview with a STEM professional). In the GC3 Video Production Curriculum, this worksheet is utilized during Session 8.

Video Production Rubric for Educators (Appendix G)

It is important to keep the quality of the videos in mind as they are being produced. Specific to the GC3 Video Production Curriculum, participants and educators alike should pay attention to how effectively their media works express the unique point of view of the participants through story, sound, and images.

Launching a media project in a school or youth development setting can be daunting. Media production for many educators is viewed as a complex craft that takes considerable time and practice to master. Yet, all visual media is essentially show-and-tell—a combination of shots and audio assembled in a specific way to express the central idea of the media maker. Media is also linear, with ideas and messages revealed sequentially over time, though not necessarily in real time. Media works are also layered, through the intentional arrangement of images or sounds (voice, effects, music, etc.) that complement and interact with each other.

The Video Production Rubric provided in Appendix G may be useful for educators and young people in identifying criteria for quality videos. Because video production becomes more nuanced with each iteration, educators with different video-production skill levels will use this rubric in different ways. If you are new to video production, you may want to strive to create a video or video series that adheres to the criteria outlined in the Beginner column. As you become

GC3 Video Production Curriculum

more adept at leading a youth production team, you may want to try to aim for the goals stated in the Advanced column.

Evaluation (Appendix H)

Both formative and summative evaluations of the video production process outlined in the curriculum may prove to be useful, especially if the curriculum may be used multiple times. The sample evaluation tools included in Appendix F include formative tools for participants and educators, as well as a summative tools to assess the overall impact of the project.

Formative Evaluation Tools

Participant journals help to track each participant's process and progress as she or he creates her or his video. In addition, information recorded via participant journals may be useful in the video production process. Appendix F contains a sample Participant Journal Worksheet.

It may also be helpful for participants to keep a video journal (e.g., using handheld video recorders) in addition to or in lieu of the above paper and pencil journal. By using flip cameras as journaling tools early on in the project, participants can familiarize themselves with (1) being on camera, (2) filming themselves and their personal insights, and (3) basic camera skills, such as framing and sound recording. In addition, journals may provide footage of a personal realization or transformation that participants may later want to include in their videos.

Educator documentation can prove to be useful for future planning when implementing the video production curriculum. Appendix F contains a Sample Educator Documentation Form.

It may be helpful for educators to document their experiences in a blog in addition to or in lieu of the above paper and pencil form. Blogs allow the documentation to occur in a more journal-like and real-time manner, and they may be more accessible to some educators. What is important is that the educator's process is recorded to allow for continuous improvement during the delivery of the curriculum or revision for future implementation.

Summative Evaluation Tools

Pre- and post-surveys for youth participants has also been included in Appendix F. In tandem, these surveys should provide information on just how much participants learned from their time spent creating STEM career videos. Specifically, the surveys measure interest in STEM and STEM careers, attitudes about STEM and ability in STEM subjects, knowledge of media literacy, technical knowledge, and interest in creating STEM career media.

Once videos have been put together, it's time to show them off! Be sure to plan a culminating event at your school or youth center and invite parents, community members, the interviewees and other guests. Use the event as another chance to have young people talk about their interests in STEM and hear from experts in the field. After the event, educators and youth can contact local community organizations, film festivals, and schools that serve underserved populations to set up additional screenings of the videos you and your group have made.

GC3 Video Production Curriculum

VIDEO PRODUCTION CURRICULUM

This Video Production Curriculum is a reflection of the best practices identified by EDC and its partner organizations as we worked with young girls to create the GC3 video series.

Preparation

Before beginning this project, educators should plan for and prepare the following:

School/Program Partnership

If you are working with a partner school, program, or organization, make sure you are in good and constant communication with the school/program liaison. Have a clear understanding of your role, the liaison's role, and the expectations you each have for the other.

Activity Space

Make sure you have access to more than just one room or classroom for project sessions. Ideally rooms should be open, free of noise, and well lit. To acquire a varied amount of footage, the greater access participants have to the building or surrounding grounds, the better.

Equipment and Materials

Make sure you have all the essential pieces of equipment and materials before each session. These might include a few basic digital cameras, a tripod, microphones, headphones, and a laptop or computer loaded with editing software. In addition, prescreening films and preselecting images for particular discussions will help those discussions run smoothly.

Interviewees

Begin identifying potential interviewees before sessions even begin. Create a list of women who are STEM professionals in your community or places where you could find them (businesses, museums, universities, government agencies, etc.). As participants narrow in on their careers of interest, begin contacting interviewees and scheduling potential (and feasible) interview dates, where interviewees either come to the sessions or the participants visit the site (see "Identifying an Interviewee").

Familiarity with Equipment

Gain a sense of participants' familiarity with media equipment and make sure they become comfortable with being both in front of the camera and behind it. Some questions to consider:

- How familiar are they with using video equipment?
- Have they made media works before?
- Are they camera shy?

Use the information you gather to help you plot out your project. Participants with specific production skills can often aid you as co-facilitators and peer role models for their colleagues.

Group Dynamics

Gain a sense of participants' dynamics with each other and begin devising ways of integrating participants into a unified group as much as possible. For example:

- Do they know each other? Are they all in the same school? Same grade? Same class?

GC3 Video Production Curriculum

- Do they like each other? Are some better friends with each other than others? Are some clearly not interested in interacting?
- What do they really care about? What topics interest them?

Media making requires a great deal of reflection and sharing of ideas and opinions. Make sure you are continually reinforcing the value of creativity and collaboration to ensure participants feel safe and supported throughout the process.

Video Production Sessions

The following outline was created to guide instruction for the first pilot GC3 project, which involved a group of six young people and their facilitator, who met for two-hour sessions twice a week for six weeks. The dose and duration of the sessions were based on the availability of the site and accommodated the basic aspects of the project, although additional sessions were required for off-site interviews, editing, and closing activities. Educators should note that session length will vary by educator, group, space availability, time of year, and affiliation with a school or program. This curriculum should be adapted to accommodate your group's unique needs.

Note: The starred (*) items below are discussed further in “Useful Materials.”

Session 1

Objectives:

- Provide an overview of project
- Familiarize participants with workspace
- Develop group dynamics

Materials:

- Activity to familiarize participants with workspace (e.g., scavenger hunt activity)
- STEM Career-Related Icebreaker activity*

Activities:

Hour One

15 minutes - Introduction of educator and project

45 minutes - Activity to familiarize participants with workspace

Hour Two

30 minutes - STEM Career-Related Icebreaker activity

30 minutes - Discuss icebreaker activity and why it fits into project goals

Introduction of the Educator and Project

Introduce yourself, the project, and the project goals. Give an overview of the project; talk about what participants will be doing, how they will do it, and why.

Activity to Familiarize Participants with Workspace

Select an activity that will help participants familiarize themselves with their workspace and meeting space. Scavenger hunt-type activities have worked in the past.

GC3 Video Production Curriculum

*STEM Career-Related Icebreaker Activity**

Many STEM-related or STEM career-related activities exist on our list of useful Web sites (see “Useful Materials”). Pick one activity that requires teamwork and do it with participants. Discuss how this activity relates to STEM, STEM careers, and this project.

By the End of this Session:

By the end of this session, participants should have accomplished the following:

- Learned about the purpose and scope of the project
- Learned about the activities they might do (and why) and any applicable project details (such as compensation, etc.)
- Previewed an activity they might do as they explore the relation of STEM to different jobs they might be interested in or issues/problems they’d like to learn how to address
- Begun the process of familiarizing themselves with each other and their workspace

Session 2

Objectives:

- Present a short, but meaningful, introduction to each project element
- Explore media literacy, self-creativity, and self-expression

Materials:

- STEM Career-Related Icebreaker activity*
- Career Survey*
- Exploring FunWorks* materials:
 - Large piece of paper
 - Markers
 - Computers with Internet access
- Video Scavenger Hunt materials:
 - Cameras
 - List of images to collect during scavenger hunt

Journal:

Things they liked and enjoyed, one thing they would do differently about the last session, and one thing that challenged them.

Activities:

Hour One

15 minutes - STEM Career-Related Icebreaker activity

15 minutes - “Getting to Know You” introductions

30 minutes - Identify participants’ interests using the Career Survey*

Hour Two

30 minutes - Introduce FunWorks Web site

30 minutes - Video Scavenger Hunt activity

*STEM Career-Related Icebreaker Activity**

GC3 Video Production Curriculum

Many STEM-related or STEM career-related activities exist on our list of useful Web sites (see “Useful Materials”). Pick one activity that requires teamwork and do it with participants. Discuss how this activity relates to STEM, STEM careers, and this project.

“Getting to Know You” Introductions

Choose a “getting to know you” icebreaker activity to help participants feel more at ease with each other.

*Career Survey**

Administer the Career Survey (see “Useful Materials”) to gain a sense of how much participants know or want to know about STEM and STEM careers.

*The FunWorks Web site**

Use the FunWorks Web site (see “Useful Materials”) to begin a discussion about “good questions to ask about jobs.” For example:

- What do you think you would need to study to become an x ?
- Why are you interested in x job?
- Does someone who does x help anyone? If so, who?
- What kinds of problems do you think an x solves?

Write the questions down on a large piece of paper as they are generated. On the FunWorks Web site, point out the different career bubbles. Look at the site and choose some careers to explore based on their survey results. As a group, have participants discuss what they’ve learned about STEM and whether or how STEM relates to the jobs and issues they are interested in.

Video Scavenger Hunt Activity

Using a hands-on approach, this scavenger hunt introduces basic camera operation as well as concepts such as camera angle composition and framing. Participants learn through doing as they take turns capturing images from your pre-made list (see next paragraph). Participants will probably already be somewhat familiar with the different parts of the camera. If they are not, you may want to add additional elements to the scavenger hunt that will require them to locate and use particular camera features.

Use a camera and projector to show the participants a demonstration of different camera angles and proper framing. Repeat the shots and reinforce their understanding of the concepts by asking them to call out and identify the shots. Break participants into teams according to the number of cameras available and the number of facilitators available to facilitate the groups. Distribute a copy of a pre-made “List of Images to Collect Using the Camera” to each group. Make sure the camera is rotated within each group so each participant has several opportunities to use the camera to hunt for images. Observe and instruct as needed on proper technique.

By the End of This Session:

By the end of this session, participants should have received a short, but meaningful introduction to each element of the project and accomplished the following:

GC3 Video Production Curriculum

- Become comfortable working with each other and with the educators
- Thought about and explored links between their ideal jobs or the issues they think are important to STEM
- Become media literate individuals
- Explored their own creativity and self-expression
- Become comfortable both in front of and behind a camera

Session 3

Objectives:

- Learn more about the FunWorks Web site and jobs involving STEM
- Learn and discuss more about the cameras and their use

Materials:

- FunWorks/STEM career activity materials*
 - Computers with Internet access
 - Pre-identified job/issue Web site(s)
- Big Picture Worksheet*
- Cameras
- Discuss personal narrative materials
 - Sample videos for personal narrative discussion (see Videos for Critique* under “Useful Materials”)
 - TV/projector

Journal:

Things they liked and enjoyed, one thing they would do differently about the last session, and one thing that challenged them.

Activities:

Hour One

15 minutes - FunWorks demo

60 minutes - Job/issue investigation using Big Picture Worksheet

Hour Two

15 minutes - Discuss journaling with the cameras

30 minutes - Discuss personal narratives and listen to narratives by other young people

*The FunWorks Demo**

To prepare for this activity, look through the FunWorks Web site (see “Useful Materials”) and identify a page that might help aid a discussion of the big-picture connections you want to make between personal aspirations and real-world activity. As a group, revisit the FunWorks site and look at one specific job together. Find out how the particular job relates to the real world by asking the following questions and talking about the answers:

- What does the job entail?
- What is the importance of the job?

GC3 Video Production Curriculum

- Who is affected by the people who have that job?
- Who might help those who do that job?
- What skills are needed to perform that job well?

Job/Issue Investigation Using Big Picture Worksheet

To prepare, find Web sites (that are age-appropriate and interesting) for the participants to explore. Break the group out to individual computers and have participants research Web sites that help them explore their jobs or issues of interest. Give each participant a Big Picture Worksheet and ask them to fill it out while they're exploring and investigating. Afterward, convene a group discussion to discuss each participant's findings.

Discuss Journaling with the Cameras

Discuss the use of cameras as a means or option for journaling.

*Discuss Personal Narratives and Listen to Narratives by Other Young People**

Discuss the idea of a personal narrative and what the participants might include in their own personal narratives. Use videos from the list under Videos for Critique to demonstrate examples of good personal narratives. Ask why participants thought the narratives they saw were good.

For the next session, ask participants to shoot what they might think fits into their own personal narrative. (Participants may need to be told about particular parameters with regard to shooting footage in their homes or neighborhoods. While they should be aware of these, they also need to feel comfortable shooting the things they can and want to shoot.)

By the End of This Session:

By the end of this session, participants should have accomplished the following:

- Have a sense of how the jobs or issues they're interested in relate to STEM
- Begin to see the different ways in which they can use their cameras throughout this project

Session 4

Objectives:

- Continue developing group dynamics and camera skills
- Continue thinking about individual interests, community needs, and possible links to STEM careers
- Begin learning how to critique a video and to identify what makes a good video
- Continue learning to be both in front of the camera and behind it and to feel comfortable in both roles
- Explore different means of self-expression
- Discuss self-image and compare it to how others perceive us as a way to explore the media's role in image portrayal

Materials:

GC3 Video Production Curriculum

- STEM Career-Related Icebreaker activity*
- Career Survey discussion materials
 - Career Surveys completed during Session 2
 - “Good Questions to Ask about Jobs” list generated during Session 2
- Video poem materials
 - Note cards
 - Cameras
 - TV/Projector
- Video Production Curriculum Evaluation Pre-test*

Journal:

Things they liked and enjoyed, one thing they would do differently about the last session, and one thing that challenged them.

Activities:

Hour One

- 20 minutes - STEM Career-Related Icebreaker activity
- 15 minutes - “Getting to Know You” activity
- 15 minutes - Career Survey discussion

Hour Two

- 30 minutes - Video Poem activity
- 20 minutes - View Video Poem activity poems and discuss
- 15 minutes - Video Production Curriculum Evaluation Pre-test
- 05 minutes - Session discussion

*STEM Career-Related Icebreaker Activity**

Many STEM-related or STEM career-related activities exist on our list of useful Web sites (see “Useful Materials”). Pick one activity that requires teamwork and do it with participants. Discuss how this activity relates to STEM, STEM careers, and this project.

“Getting to Know You” Activity

Choose a “getting to know you” icebreaker activity to help participants feel more at ease with each other.

Career Survey Discussion

Participants should begin to think about jobs they are interested in or issues that are important to them and their communities, and which jobs or issues they might want to make a video about exploring.

As a group, discuss the Career Survey results. Brainstorm issues that participants care about that could be addressed by the jobs they explored on the FunWorks or other jobs they can think of (e.g., environmental issues and related information on environmental scientist). Think of questions to ask people who have these jobs and add them to the running “Good Questions to Ask about Jobs” list.

Video Poem Activity

GC3 Video Production Curriculum

This activity is meant to spark discussion of how the participants view themselves, how they think others view them, and how the media fits into this picture:

- What influence does the media have?
- What influence do we have on the media?
- What influence do we have on our interpretation of what the media presents to us?

Using video as a form of self-expression and as a tool for discovery and learning, give each participant an index card with three statements to complete:

1. “I am...” (List adjectives you use or friends and family have used to describe you.)
2. “I struggle to...” (List a few things you struggle or have struggled with.)
3. “I strive to be...” (List a few adjectives to describe who you will be when you get to the place you want to be.)

Cull participant responses into a group list poem. Once the poem is completed, ask participants to think of ways in which the parts of the poem can be represented visually. Then have participants take turns using the camera to record themselves or other visuals. They can also provide sound by taking turns reading the poem aloud. Have a group discussion about participants’ views on image, identity, self-expression, and media.

Video Poem Activity Discussion

Participants should realize that while their videos should express the ideas they want to convey, they need to also consider the particular things that will interest those who will be watching the video—that is, they want to make videos that people like themselves will want to watch.

Using the video poem created in the Video Poem activity, begin a discussion about “what makes a good video.” Ask participants what they were thinking as they created the video poem:

- Were you thinking of showing what you meant as best you could?
- Were you thinking of how others might interpret your images and words together?
- Were you thinking of what you might want to see when you watched a video poem?

Next talk about participants’ favorite TV shows or movies (e.g., “Why are those TV shows so appealing?” or “What elements make those shows fun to watch?”) and relate their answers to what they just talked about as video creators.

*Video Production Curriculum Evaluation Pre-test**

Complete the first part of the summative evaluation (see “Useful Materials”).

By the End of This Session:

By the end of this session, participants should have accomplished the following:

- Felt more comfortable working with each other
- Made further connections and links between their ideal jobs or issues they think are important to STEM
- Thought about the elements of engaging video

GC3 Video Production Curriculum

- Completed the Video Production Curriculum Evaluation Pre-test

Session 5

Objectives:

- Begin to learn the components of shooting a video; continue to identify what makes a good video
- Learn a method of interview protocol development; become comfortable interviewing others
- Continue learning to be both in front of and behind the camera and to feel comfortable in both roles
- Continue thinking about individual interests and possible links to STEM careers

Materials:

- Video Critique materials
 - TV/Projector
 - Sample videos for Video Critique*
- Job/Issue Interview materials
 - “Good Questions to Ask about Jobs” list generated during Session 2
 - Markers
 - Career Surveys completed during Session 2
- Cameras

Journal:

Things they liked and enjoyed, one thing they would do differently about the last session, and one thing that challenged them.

Activities:

Hour One

40 minutes - Video Critique activity

Hour Two

50 minutes - Job/issue interviews using Career Surveys

20 minutes - Discuss personal narratives

10 minutes - Session discussion

*Video Critique Activity**

Participants begin to learn about the components of shooting a video and the effect(s) that manipulation of these components may have on an audience’s perception of the ideas they are trying to convey.

Using footage from sample videos (see Video Critique in “Useful Materials”), engage participants in a conversation about composition, placement, documentary styles, and types of interviews.

Job/Issue Interviews Using Career Surveys

GC3 Video Production Curriculum

Re-examine the “Good Questions to Ask about Jobs” list that was generated during Session 2. Ask if anyone would like to add to that list of questions and add those to the list. Give each person their Career Surveys from Session 2, and ask participants to choose partners. Using the generated questions, have the partners interview each other in front of the camera about jobs/issues they are interested in and the links between those jobs/issues and STEM.

Discuss Personal Narratives

View personal narrative videos (completed after Session 3) from cameras and critique as a group. Discuss why each participant shot what they shot and why.

By the End of This Session:

By the end of this session, participants should have accomplished the following:

- Learned the elements of a documentary and how to critique documentary footage
- Learned how to conduct an interview and film an interviewee, as well as feel more comfortable being interviewed on camera
- Have an idea of things they might want to film as part of their own personal narratives

Session 6

Objectives:

- Begin to learn the components of shooting a video; continue to identify what makes a “good video”
- Continue learning to be both in front of and behind the camera and to feel comfortable in both roles

Materials:

- Cameras
- B-roll discussion materials
 - TV/Projector
 - Sample videos for Video Critique*

Journal:

Things they liked and enjoyed, one thing they would do differently about the last session, and one thing that challenged them.

Activities:

GC3 Video Production Curriculum

Hour One

10 minutes - Camera Set-Up contest

45 minutes - B-roll discussion

Hour Two

45 minutes - Shooting a Job B-Roll activity

15 minutes - View footage and discuss

05 minutes - Session discussion (What worked? What was difficult?)

Camera Set-Up Contest

Separate participants into teams and have them set up the equipment for an interview. Whoever finishes first and has correctly framed the camera wins a prize.

*B-Roll Discussion**

Referring to the videos from the Video Critique list (see “Useful Materials”), talk about documentaries and the types of shots used, other than talking heads. Explain to participants what B-roll is and discuss how and why it is or might be used in videos. Ask them what general images and footage they would use as their B-roll for the films they will be making. Generate a list on a large piece of paper.

Shooting a Job B-Roll Activity

Send out participants in pairs or groups to find a job they are interested in around the area where the sessions are held. They are to conduct a brief interview and shoot B-roll to go along with that job. When they’re done, bring everyone together to view the B-roll and framing they’ve just shot. Ask each participant to present some of their B-roll and explain the context for the B-roll to the group. Then, have the group critique the use of B-roll as well as shot composition.

By the End of This Session:

By the end of this session, participants should be able to do the following:

- Differentiate B-roll from talking heads
- Discuss the uses and functions of B-roll in documentary film
- Create a shot list of B-roll to film for a specific reason and give reasons for each item on the list
- Critique use of B-roll in film

Session 7

Objectives:

- Reinforce and expand upon a method of interviewing
- Establish connections between interviewees, career paths, and practical application

Materials

- How to Conduct an Interview materials
 - Job/issue interview footage from Session 5
 - Large piece of paper

GC3 Video Production Curriculum

- Markers
- “Good Questions to Ask about Jobs” list from Session 2
- Cameras

Journal:

Discuss how your group worked together. What did you learn about each other and about shooting your pieces?

Hour One

60 minutes - How to Conduct an Interview discussion

Hour Two

40 minutes - Brainstorm

20 minutes - Work on personal narratives

How to Conduct an Interview

Ask participants to think about the steps they took to create the job/issue interviews they did during Session 5 (e.g., “What steps did you take to create the videos you created in the job/issue interview videos?”). Write these steps down in chronological order on a large piece of paper. Ask the group how they might change their previous processes (e.g., what they would do differently, what they would add, what they would not do). Modify the list accordingly.

Brainstorm

One of the items on the list should be to identify who they are interviewing, and this brainstorming activity will begin to focus on this item. It may help to have an example ready to demonstrate for participants as you’re giving them directions for this part of the exercise.

1. Ask participants to individually brainstorm and generate a list of the types of people who might have interesting jobs and responsibilities or a list of the jobs of people who might address the issues they are interested in exploring (e.g., environmental scientist, public health researcher, etc.).
2. Under each type of person, have participants write down the specific reasons they have identified each of these people (e.g., environmental scientist – “I want to do that job;” public health researcher – “Someone who does that job could do studies to identify and help solve the high asthma rates in my neighborhood”).
3. Ask participants to brainstorm specific STEM areas that each of those people might need to use as they do their jobs or STEM areas that they might have to learn before they are allowed to do their jobs. Have participants write these STEM areas on their lists as well (e.g., environmental scientist – “I want to do that job” – environmental science, chemistry, GIS).
4. Ask participants to think of real people (e.g., people they know, people who might live in their neighborhood/town/city) who might have the jobs or responsibilities of those they would like to interview or who might address the issues they are interested in exploring (e.g., environmental scientist – “I want to do that job” – environmental science, chemistry, GIS – someone who works at the water treatment plant).

GC3 Video Production Curriculum

Once potential interviewees have been identified, revisit the “Good Questions to Ask about Jobs” list from Session 2. Ask if anyone would like to add more general questions to that list of questions and add those to the list. Then, ask each participant to generate and write down more specific questions they would want to ask their potential interviewee(s).

Work on Personal Narratives

Give participants some questions to prompt them to think about what the group has discussed about STEM so far and its relation to real life (such as, “What is STEM?” or “Why is it important to encourage women to go into STEM fields?”). Ask participants to write their thoughts down. Have participants pair up and film each other’s responses to the questions. Any part of personal narratives that don’t get filmed should be filmed before the next session.

By the End of This Session:

By the end of this session, participants should have a grasp of the steps necessary to put together a good interview, including the following:

- Be able to describe the specific people they may want to interview
- State the reasons why they want to interview those people
- Explain their ideas about how those people may or may not use or have used STEM
- Identify some specific questions they would like those people to answer

Note: To be ready for the next session, one or two interviews should have already been conducted.

Session 8

Objectives:

- Continue to discuss and critique personal narratives and interviews
- Learn about the uses and functions of a production worksheet; create a rough draft worksheet for use

Materials:

- Critiquing personal narrative materials
 - Camera
 - TV/Projector
 - Cameras
- Video Production Worksheet*

Journal:

Think about the interview. What interested you in this person’s job? What did you learn from this interview, both about the career and the filmmaking process.

Activities:

GC3 Video Production Curriculum

Hour One

60 minutes - Critiquing personal narratives

Hour Two

60 minutes - Creation of a Video Production Worksheet

Critiquing Personal Narratives

View personal narrative videos (completed during Session 7) from cameras and critique as a group. Discuss why each participant shot what they shot and why.

*Creation of a Video Production Worksheet**

Review the elements of a documentary (from Sessions 5 and 6) with participants. Talk about footage they have collected so far and how each fits into a documentary format. Have participants reflect on the story they are telling through their videos. Show them the Video Production Worksheet (see “Useful Materials”) and fill it out as an example. Have each participant work on their own worksheet and fill in their vision for their video.

By the End of This Session:

By the end of this session, participants should have accomplished the following:

- Have a thorough understanding of the types of things they want to include in their personal narratives.
- Understand the different components they want to include in the videos they are making
- Be able to critique their use of the camera and their interviewing skills

Session 9

Objectives:

- Refine their interview skills using a developed method of interviewing
- Reinforce connections between interviewees, career paths, and practical application
- Continue to think critically about their own videos
- Continue to discuss and critique footage to date
- Continue to explore ways to express personal narratives

Materials:

- Characters from the media for Character Interview activity

Journal:

Things they liked and enjoyed, one thing they would do differently about the last session, and one thing that challenged them.

Activities:

GC3 Video Production Curriculum

Hour One

20 minutes - Character Interview activity

30 minutes - Discuss interviews conducted

Hour Two

50 minutes - Discuss personal narratives and B-roll

20 minutes - Neighborhood Stories activity

Character Interview Activity

Have participants pick fictional characters or people in the media or in their lives that they know well enough to impersonate. Divide the group into randomly chosen pairs. One participant will interview the character and the other will answer the questions as the character. Instruct the participants to make sure they use the skills they have learned about interviewing in the interview.

Discuss Personal Narratives and B-Roll

Continue to view personal narratives and B-roll footage to date as a group. Discuss what each participant might be missing and create a plan by which to obtain missing footage.

Neighborhood Stories Activity

Ask the participants to draw a map of their neighborhood and have them to write a story about it. Before they return for the next session, have them film their neighborhood and bring their stories to the session.

By the End of This Session:

By the end of this session, participants should have accomplished the following:

- Become more comfortable interviewing STEM professionals
- Be able to make connections between STEM and real-world applications
- Understand the different components they want to include in the videos they are making

Session 10

Objectives:

- Continue to discuss and critique personal narratives and interviews

Materials:

- TV/Projector
- Camera
- Video Production Worksheet from Session 8

Journal:

Proofread neighborhood stories and record them.

Activities:

GC3 Video Production Curriculum

Hour One

30 minutes - View and discuss neighborhood stories

30 minutes - Review Video Production Worksheet and plan for anything missing

Hour Two

50 minutes - Go over editing and work on timelines

10 minutes - Session discussion

View and Discuss Neighborhood Stories

View neighborhood stories as a group. Compare the story that participants see in each video to the story that each participant was trying to tell. Discuss ways for each participant to fully communicate their story.

Review Video Production Worksheet and Plan for Anything Missing

Take another look at the Video Production Worksheets from Session 8. Have participants identify gaps in their videos and audios. Create a list of those gaps and make plans to ensure that participants will be able to fill those gaps.

*Go Over Editing and Work on Timelines**

Explain the editing process to each participant. Have each participant look over their Video Production Worksheet from Session 8 and create a feasible timeline to do the remaining work.

By the End of this Session:

Participants should have accomplished the following:

- Developed a firm understanding of what they want to communicate in their personal narratives
- Identified gaps in their footage
- Created a concrete work plan to obtain footage that fills those gaps

Session 11

Objectives:

- Wrap up participants' experiences with the project through reflections and evaluations

Materials:

- Camera
- Video Production Curriculum Evaluation Post-test*
- Fun closing icebreaker activity materials
- Wrap-up activity materials

Activities:

GC3 Video Production Curriculum

Hour One

15 minutes - Camera Set-Up and Break-Down contest

30 minutes - Video Production Curriculum Evaluation Post-test

Hour Two

25 minutes - Fun closing icebreaker activity

30 minutes - Wrap-Up activity

20 minutes - Roadmap/Goodbyes

Camera Set-Up and Break-Down Contest

Separate participants into teams and have them set up and break down the equipment for an interview. Whoever finishes first (while also correctly framing the camera) wins a prize.

*Video Production Curriculum Evaluation Post-test**

Participants will spend some time individually taking the Video Production Curriculum Evaluation Post-test.

Fun Closing Icebreaker Activity

Choose a fun activity that will get the participants out of their seats and into an energetic mood.

Wrap-Up Activity

This activity will be used to review the things participants have learned throughout the class. For example, some groups have used a discussion format with questions facilitated by the educator; others have played Jeopardy-like games where participants can demonstrate their knowledge. Some topics you should ask about include the following:

- Rule of the thirds
- Kinds of questions that are best to ask in an interview
- Different types of documentaries
- Names of all the STEM careers they've studied
- What can a (name a specific STEM career) do
- What things do you have to know to be a good (name a specific STEM career)

Roadmap

Have participants create a roadmap for the next year and then until they graduate high school. This activity will help them look forward to the next year and also to make a plan. Tell them you will check back in with them at the end of the next school year to see how they have followed through with their roadmap.

By the End of This Session:

Participants should have accomplished the following:

- Processed their past sessions and reflected on the work they have done throughout the course of the project
- Completed the Curriculum Evaluation Post-test during this session

Post-Session Activities

GC3 Video Production Curriculum

While the full group sessions for the above pilot took place over six weeks, additional activities were scheduled outside of regular meeting times to accommodate all aspects of the media production process. Note that these activities could be rolled up into a longer 8- to 12-week process, but they often take place off-site and are sometimes more manageable with fewer participants.

Completing Video Filming

The current GC3 Video Production Curriculum leaves little time during the sessions for filming interviewees—only one or two interviews were filmed on-site over the course of the project, primarily to acclimate participants to the interviewing process. You should plan additional times to schedule interviews outside the usual meeting time, which might involve weekends or evenings.

Editing

The assembly of footage is the most time consuming and cumbersome part of the media making process, though it is also where the real storytelling takes place. For the pilot, young people created editing plans that identified key interviews, shots, and music to include, and then their videos were assembled outside the sessions by the facilitator. If time allows, incorporate the editing process into later sessions in the curriculum so participants can participate more directly in this process.

Screening

Once videos have been put together, it's time to show them off! Be sure to plan a culminating event at your school or youth center and invite parents, community members, the interviewees, and other guests. Use the event as another chance to have young people talk about their interests in STEM and hear from experts in the field. After the event, educators and participants can contact local community organizations, film festivals, and schools that serve underserved populations to set up additional screenings of the videos you and your group have made.

GC3 Video Production Curriculum

IDENTIFYING AN INTERVIEWEE

While interviewing particular STEM professionals is not necessary for creating a good STEM career video, it is an activity that educators may want to include within the curriculum. If so, it is important to identify interviewees as early as possible and to schedule interviewees as participants are filming the videos. Here are some tips on how to identify an interviewee:

Several weeks before you start the project:

- Contact STEM professionals known through personal networks, professional societies, local businesses, college campuses, etc.
- Ask these STEM professionals about their potential participation in the project. Provide interviewees with information about the video production project, why you would like to do it, information about the participants, a prospective timeline, an approximation of their time commitment, and your contact information.
- Begin building a list of STEM professionals who are interested in participating. Let each know that you may be in touch as the project begins.

As you begin the project:

- Begin to identify each of the participants' STEM field of interest. Try to match the participants' interests with your list of potential interviewees.
- Re-contact the STEM professionals and begin to discuss a revised project timeline and potential dates during which participants may be able to interview the professionals. Also, begin to discuss possible field-trip opportunities for the participants—visiting a lab, clinic, or site.
- Begin to research and contact any STEM professionals whom participants might be interested in interviewing and who are missing from your list.

Two weeks before the interview:

- Confirm interview date, time, location, length, and activities with each interviewee.
- Inform interviewee of anything the participants are currently working on and any other information that might be helpful to the interviewee.
- Reserve equipment for the interview date (cameras, tripod, vans for transportation, etc.).

One session before the interview:

- Prepare participants for the interview. Have them refine their interview questions for the specific interviewee and also discuss who will take on what role as they interview (who will film, who will interview, etc.).
- Have participants practice by interviewing each other or staff/educators.
- Confirm equipment reservation and availability for the interview date.

One day before the interview:

- Reconfirm all details and logistics with interviewee.
- Pick up and prepare equipment to ensure everything is ready for the next day's events.

Day of the interview:

- Let the interview begin! Have fun!

MEDIA TOOLS

The following online media tools have been recommended by EDC's partners and are excellent resources for educators who might want to create a media series of their own.

Adobe Youth Voices

<http://www.adobe.com/aboutadobe/philanthropy/youthvoices>

Adobe Systems Incorporated has launched an international philanthropic effort to promote youth media makers who "create with purpose." The Web site includes spotlights on projects around the globe as well as a growing gallery of youth media works on a range of personal and social topics.

Copyright and Fair Use Videos

<http://mediaeducationlab.com>

Use these engaging *Schoolhouse Rock*-style videos to help students understand about 21st-century social responsibility, focusing on copyright and fair use. These videos and accompanying curriculum materials help youth understand the rights of owners and the rights of users, learning how fair use protects young people's rights to quote from, use, and repurpose existing copyrighted materials as part of the process of human creativity.

Creating Your Own Media

<http://www.ourmedia.org/learning-center>

This page offers a variety of accessible resources for users to get started creating and sharing video, audio, text, and multimedia content on the web.

Jump Cut

<http://jumpcut.com>

Jump Cut is a free online tool for video editing and publishing to the web. This online creative community allows people to share clips, images, sounds, and other resources.

ListenUp!

<http://www.listenup.org>

A national intermediary to support the development of the youth media field, ListenUp! features tips on youth media making techniques and an extensive collection of youth media works from leading programs across the country.

Media That Matters

<http://www.mediathatmattersfest.org>

The Media That Matters Film Festival is a showcase for short films on the most important topics of the day. These films from communities around the world engage diverse audiences and inspire them to take action.

MediaRights.org

<http://www.mediarights.org/launchpad>

GC3 Video Production Curriculum

MediaRights.org's Launchpad includes a youth media distribution toolkit, which is an ideal resource for the development of outreach and exhibition strategies.

My Pop Studio 2.0: A Game for Girls

<http://mypopstudio.com>

My Pop Studio 2.0 introduces the key concepts of media literacy through fun interactive games that appeal to girls, ages 9–14. Using My Pop Studio, youth learn about genre by playing TV producer, consider how advertising and celebrity culture reinforce narrow conceptualizations of beauty, explore values messages in PopStar Producer, and create narratives (using Comic Maker) that reflect on the role of cell phones and text messaging as they affect relationships.

VoiceThread

<http://voicethread.com>

Voice Thread is an online media album that can hold essentially any type of media (images, documents, and videos) and allows people to make comments in five different ways—using voice, text, audio file, or video. A VoiceThread allows group conversations to be collected and shared in one place, from anywhere in the world.

Youth Media Exchange

<http://ymex.org/members/join>

This site allows youth to upload videos and other media related to global issues. Users can react to uploaded media with ratings and comments and can also post media as a response.

Youth Media Reporter

<http://www.youthmediareporter.org>

Youth Media Reporter (YMR) is the professional multimedia journal that serves practitioners, educators, and academics in the youth media field. YMR's purpose is to build the field by documenting, from multiple perspectives, the insights and leading lessons in engaging young people in video, film, television, radio, music, web, art, and print.

Youth Noise

<http://youthnoise.org>

Youth Noise is an online community for youth social and political activism, with opportunities to learn, share ideas, and take action.

YouthLearn on Youth & Media

<http://www.youthlearn.org/youthmedia>

EDC's YouthLearn Initiative has been researching and supporting the youth media field for many years. This section of their Web site explores the core elements and outcomes associated with youth media, showcases a number of exemplars from the field, and addresses how best to evaluate the media making process.

**APPENDIX A:
SAMPLE RECRUITMENT FLYER**

Recruitment materials may be necessary to spark the interest of youth who may want to be a part of a STEM video production project. Creating flyers and sending letters home to parents/guardians, in addition to in-person talks with youth about the project, may be helpful in gaining attention to, and support for, the project from youth and their parents/guardians.



Calling YWLCS Girls!

We are looking for girls who would like to create media with meaning, produce their own video segments for use in a cool website for young people who may be interested in careers in science, technology, engineering and mathematics.

The production team will:

- ◆ Learn video production techniques
- ◆ Plan, produce and edit their own videos for the Web
- ◆ Learn more about their own career options and interests
- ◆ Meet and interview women and men around the city with interesting jobs in science, technology, engineering, and math
- ◆ Explore issues or problems in their neighborhood or community and learn how science and engineering can help to solve them.
- ◆ Make a difference! Create meaningful, interesting videos that other young people can use and learn from.

So...Are you interested in learning how to produce your own videos?
Would you like to explore interesting career options up close and personal?
Do you think you might know what kids your age really want to know about these cool careers?
Yes? ...Then please ask Ms. Louie for more information about this exciting opportunity.

COME JOIN OUR TEAM!

APPENDIX B: SAMPLE INTRODUCTORY LETTER TO PARENTS

Sending a letter home to parents/guardians provides them with firsthand information about the project, answering any initial question they may have, as well as bringing attention to, and gaining support for, the project.



November 15, 2007

Dear Parents and Teachers:

I am writing to inform you about an exciting project funded by the National Science Foundation that my organization, Education Development Center, is delighted to bring to the YWLCS. Education Development Center, Inc. (EDC) is an international, nonprofit organization managing 325 projects around the world. EDC works with middle school girls to promote interest in science, mathematics, technology and engineering

By the time they reach middle school, some girls have become discouraged about pursuing their interests in science and engineering, falling prey to stereotypes that these fields are not for them. But what if girls determined the questions and concerns about these career options themselves and were allowed to talk to each other?

With the help of middle school girls from across the country, EDC will develop a series of 10 to 12 videos that explore what it means to be a scientist or engineer. YWLCS has been chosen as one of the first sites in this initiative. The series of five-minute videos will emphasize the development of key skills such as leadership, working in teams, and problem solving, and how those skills relate to careers and education in science and engineering.

The production team will:

- ◆ Learn video production techniques
- ◆ Plan, produce and edit their own videos for the Web
- ◆ Learn more about their own career options and interests
- ◆ Meet and interview women and men around the city with interesting jobs that use science, technology, engineering, and mathematics
- ◆ Explore issues or problems in their neighborhood or community and learn how science and engineering can help solve them.
- ◆ Make a difference! Create meaningful, interesting videos that other young people can use and learn from.

Interested girls will participate in an eight-week program that will meet once a week on Wednesdays beginning November 28 from 1:30 to 3:30 with additional production time scheduled on two Saturdays (dates are to be determined). The girls will also receive a cash stipend for each meeting that they attend.

I am excited about the opportunity to work with YWLCS and hope that you will encourage your children and students to participate. Ms. Louie has agreed to be the school liaison for this project. If you have any questions please contact her.

Sincerely

A handwritten signature in black ink, appearing to read 'Deidre Searcy', is written over a light blue horizontal line.

Deidre Searcy
Senior Associate
Education Development Center

Education Development Center, Inc.
55 Chapel Street | Newton, MA 02458
www.youthlearn.org dsearcy@edc.org | 617.618.2778

GC3 Video Production Curriculum

APPENDIX C: SAMPLE RELEASE FORMS

Release forms allowing youth to participate in video production activities and to be recorded on camera are helpful in making sure that parents/guardians, youth, and production staff are all in agreement about what the project entails.

Sample Consent and Release Form for Parents



Dear Parent or Caregiver,

November 19, 2007

Education Development Center, Inc. (EDC) is a not-for-profit research and development organization located in Newton, Massachusetts. One of EDC's projects is the GC3 project (Girls Communicating Career Connections), whose mission is to create a youth-produced videos and materials on science and engineering careers.. This project is funded by the National Science Foundation.

With the help of middle school girls from across the country, EDC will develop a series of videos that explore what it means to be a scientist or engineer. YWLCS has been chosen as one of the first sites in this initiative. The series of five-minute videos will emphasize the development of key skills such as leadership, working in teams, and problem solving, and how those skills relate to careers and education in science and engineering.

The production team will:

- ◆ Learn video production techniques
- ◆ Plan, produce and edit their own videos for the Web
- ◆ Learn more about their career options and interests
- ◆ Meet and interview people with interesting jobs that use science and engineering
- ◆ Explore issues or problems in their neighborhood or community and learn how science and engineering can help solve them.
- ◆ Make a difference! Create meaningful, interesting videos that other young people can use and learn from.

Interested girls will participate in an eight-week program that will meet once a week on Wednesdays beginning November 28 from 1:30 to 3:30 p.m. with additional production time scheduled on two Saturdays (dates are to be determined). The girls will receive a cash stipend for each meeting that they attend.

To allow your daughter to participate in the GC3 project, please sign the form below and return to your child's teacher as soon as possible. If you have any questions about the project or this release, please feel free to contact GC3's Project Director, Sarita Nair-Pillai, at 617.618.2164.

CONSENT AND RELEASE

I, _____ (parent guardian name) have carefully read the information provided above and understand that my child _____ (name) will be involved an eight-week program where she will develop a series of 10 to 12 videos that explore what it means to be a scientist or engineer, and that this program will be meeting once a week on Wednesdays beginning November 28 from 1:30 to 3:30 p.m. with additional production time scheduled on two Saturdays (dates are to be determined). I also understand that my daughter will receive a cash stipend for each meeting she attends.

I have signed this CONSENT AND RELEASE this ___ day of _____, 2007.

Parent or Guardian:

Signature

(Print Name)

Address

Telephone number

Child's Name

GC3 Video Production Curriculum

Sample Photo Release Form



Dear Parent or Caregiver,

November 19, 2007

Education Development Center, Inc. (EDC) is a not-for-profit research and development organization located in Newton, Massachusetts. One of EDC's projects is the GC3 project (Girls Communicating Career Connections), whose mission is to create youth-produced videos and materials on science and engineering careers. This project is funded by the National Science Foundation.

In furtherance of the project, EDC and teachers and students from Young Women's Leadership Charter School may photograph or videotape your child's likeness or image (collectively, the "Photographs"). Your child will not be identified by full name. With your permission, the information EDC gathers, including the Photographs, during this project may be presented at conferences, appear in printed materials, or be distributed on the Internet or other broadcast media.

Please sign the form below and return to your child's teacher as soon as possible. If you have any questions about the project or this release, please contact GC3 Project Director Sarita Nair-Pillai at 617.618.2164.

CONSENT AND RELEASE

I have carefully read the information provided above and give my permission to EDC to photograph or videotape my child's likeness or image. I also grant to EDC my consent to use any or all of the Photographs in the creation, publication, reproduction or promotion of the Materials in any medium now known or later developed.

I further assign to EDC all proprietary rights that may exist and that my child may possess in his/ her Photographs.

I understand that the Photographs will be used exclusively for non-commercial, educational purposes. I also understand that there will be no financial or other payment for the Photographs and hereby release EDC from any liability resulting from or connected with my child's participation in this project.

I confirm that I have carefully read this CONSENT AND RELEASE and agreed to its terms knowingly and voluntarily. I understand that EDC is not obligated to use the Photographs.

I have signed this CONSENT AND RELEASE this ___ day of _____, 2007.

Parent or Guardian:

Signature

(Print Name)

Address

Telephone number

Child's Name

APPENDIX D: CAREER SURVEY

The Career Survey found in Appendix D can be useful in getting participants to start thinking about STEM careers, in gaining a baseline understanding of participant knowledge of STEM and STEM careers, and in facilitating interaction between participants.

Instructions

Participants will divide up into pairs. Everyone will fill out a career survey individually (paper). They will share their responses within the pairs.

Goals

1. To get participants to start thinking about STEM careers.
2. To gain a baseline understanding of participant knowledge of STEM and STEM careers.
3. To facilitate interaction between participants.

Objectives

1. Encourage participants to not only think about potential careers they are interested in, but also *why* they are interested in those careers.
2. Assess how much knowledge of careers of interest and of preparation for careers of interest participants possess.
3. Gain an understanding of participants' context of career knowledge.
4. Assess each participants' top three job qualities, top three fields, and top three job-related skills/traits.

Item/Objective Match

1. Encourage participants to not only think about potential careers they are interested in, but also *why* they are interested in those careers.
Items: 1-2b
2. Assess how much knowledge of careers of interest and of preparation for careers of interest participants possess.
Items: 2c-2e
3. Gain an understanding of participants' context of career knowledge.
Items: 3-4
4. Assess each participants' top three job qualities, top three fields, and top three job-related skills/traits.
Items: 5-7

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Name: _____

Date: _____

Think about different types of jobs you've heard of and jobs that you might like to do in the future. Then, answer the questions below.

One person who has a job I might want is _____.

- This person's job is _____.
- I might want this job because _____.

Another job that interests me is _____.

- I am interested in this job because _____.
- Circle all of the types of high school classes you would need to take for this job:
Math / Science / Engineering / Computers / None of these
- What special training or education after high school would you need for this job?
- If you met someone with this job, what questions would you want to ask?

Some jobs that my friends, family, or neighbors have are:

Some other jobs in my town are:

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Circle the three most important things you think about when you think about your future job:

- | | |
|--------------------------------|----------------------------|
| Where I work (office, outside) | Making my family proud |
| The money I'll make | Choosing my own work hours |
| Liking the people I work with | Being my own boss |
| Helping other people | Liking the work I do |

If you don't see something you think is important, write your own choices in the blanks:

Other: _____ Other: _____

Circle the top three types of jobs you most want to learn about:

- | | | | |
|--------------------|----------------------|-----------|----------|
| Environment | Movies | Sports | Animals |
| Crime solving | Building things | Children | Dance |
| Predicting weather | Preventing pollution | Music | TV |
| Earthquakes | Stars and planets | Health | Medicine |
| Computers | Designing houses | Art | Oceans |
| Managing money | Helping people | Inventing | Writing |
| Transportation | Making cars safer | Books | Law |
| Selling things | Internet | Plants | Food |

If you don't see a type of job you'd like to learn about, write your own choices in the blanks:

Other: _____ Other: _____

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Circle the top three characteristics that you think you should have in order to do your future job.

Creative	Smart	Brave	Organized
Athletic	Artistic	Popular	Polite
Good at fixing things	Musical	Good looking	Logical
Good at writing	Strong	Funny	Caring
Hard working	Helpful	Friendly	Curious

If you don't see a characteristic you think you should have, write your own choices in the blanks:

Other: _____

Other: _____

That's it! You're Done!

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APPENDIX E: BIG PICTURE WORKSHEET

The GC3 Video Production Curriculum begins with a focus on the big picture, identifying the links between STEM subject areas and problems or issues that participants are interested in addressing. Using this Big Picture Worksheet can help focus and guide a discussion on this topic.

Name: _____ Date: _____

What career are you exploring?

I am researching about a person named _____.

She is a _____.

Answer some questions about this person and her career.

1) In order to do her job, what subjects did the person you're researching have to study when she was in school? What kinds of schools did she have to attend and what degrees did she have to get?

2) How did the person you're researching become interested in her career?

3) Does the person you're researching care about and want to help solve problems they see in the world? If so, describe those problems.

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4) How does the person you're researching help other people or do good things that eventually help others? Who do they help, and how?

5) People often work with others to get a job done. Who might the person you're researching need to work with in order to do his or her job well and help other people, or to do good things that eventually help others?

6) Is there something you learned about the person you're researching that surprised you?

**APPENDIX F:
VIDEO PRODUCTION WORKSHEET**

Use this worksheet to map out and track the components of a STEM career media segment.

Working Title:		
Producer:		
1) Personal Statement	Audio	Video
<p>Who are you? Where are you from? What is life like for you?</p> <ul style="list-style-type: none"> <input type="radio"/> Home <input type="radio"/> Family <input type="radio"/> School <input type="radio"/> Neighborhood <input type="radio"/> Culture <p>What thoughts do you have about the future, jobs, work, etc.?</p>	<p>Key Points for Narration or Commentary:</p> <p>1)</p> <p>2)</p> <p>3)</p> <p>4)</p>	<p>Shot List:</p> <hr/>

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2. Career Questions	Audio	Video
<p>What aspects of STEM interest you? What careers in the field are interesting to you? What specific questions do you have about the career you are most interested in?</p> <ul style="list-style-type: none"> ○ Skills needed ○ Schooling ○ Day-to-day ○ Money ○ Career path 	<p>Career Questions to Share:</p> <p>1)</p> <p>2)</p> <p>3)</p> <p>4)</p>	<p>Shot List:</p> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/>

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3. Exploration	Audio	Video
<p>A. Research</p> <p>What have you learned from your career research?</p> <ul style="list-style-type: none"> ○ About this career and how it is related to other STEM careers ○ About how these careers relate to what you learn in school ○ About skills you have that would make you successful (<i>21st-century skills</i>) ○ About how these career(s) help society ○ About what you can do now to start preparing yourself for a future STEM career <p>B. Mentor Interview</p> <p>What do you want your career mentor to say? What would you like them to show you?</p> <p>In what way(s) does your mentor's career address a particular issue/problem of interest to you?</p>	<p>Research Commentary:</p> <p>1)</p> <p>2)</p> <p>3)</p> <p>Interview Questions:</p> <p>1)</p> <p>2)</p> <p>3)</p> <p>4)</p>	<p>Shot List:</p> <hr/>

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4. Response	Audio	Video
<p>What have you learned from talking with your career mentor and your research?</p> <ul style="list-style-type: none"> ○ About yourself ○ About STEM ○ About your future 	<p>Key Points for Narration or Commentary:</p> <p>1)</p> <p>2)</p> <p>3)</p> <p>4)</p>	<p>Shot List:</p> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/>

5. Closing Message	Audio	Video
<p>What do you want to tell your audience about what you've learned? What message do you have for other young people thinking about their own futures?</p>	<p>Messages:</p> <p>1)</p> <p>2)</p>	<p>Shot List:</p> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/>

GC3 Video Production Curriculum

APPENDIX G: VIDEO PRODUCTION RUBRIC FOR EDUCATORS

This Video Production Rubric may be useful for educators in further breaking down the criteria for producing high quality videos and identifying each video’s quality level within each criteria area. Because video production becomes more nuanced with each iteration, educators with different video production skill levels will use this rubric in different ways. If you are new to video production, you may want to strive to create a video or video series that adheres to the Beginner column. As you become more adept at leading a youth production team, you may want to try to aim for the goals stated in the Advanced column.

Criteria	Beginner	Advanced
Message	<ul style="list-style-type: none"> ○ The video communicates a message and point of view. ○ Ideas are organized and video demonstrates participant learning. 	<ul style="list-style-type: none"> ○ Strong message with a clear, relatable point of view. ○ Video demonstrates that participants were highly engaged throughout the learning process. ○ Video personally relates to young women from diverse backgrounds.
Story	<ul style="list-style-type: none"> ○ A good simple story is told. Core storytelling elements are represented: There is a beginning, middle, and end There is a conflict or problem with a resolution or solution 	<ul style="list-style-type: none"> ○ A more complicated and compelling story structure drives the video. ○ Video addresses engaging subjects that are engaging and with which the audience feels a connection.
Camera	<ul style="list-style-type: none"> ○ Nice, clean, and focused shots are taken with limited camera shakes and very little zooming in and out. ○ Basic shot composition is present—no distracting objects in the background—and different shot angles are used. 	<ul style="list-style-type: none"> ○ Interesting camera angles, movement, and techniques are used intentionally to support the video’s message. ○ Additional video images and shots creatively and visually tell the story.
Lighting	<ul style="list-style-type: none"> ○ Adequate lighting is provided for the subject, with minimal shadows. ○ Direction of lighting is toward subjects and away from the camera. ○ Colors are balanced and true to life. 	<ul style="list-style-type: none"> ○ Interesting lighting effects are used. ○ Lighting is used purposefully to distinguish subjects from the background.
Audio	<ul style="list-style-type: none"> ○ Voice and narration are clear and well recorded. ○ Background noise and/or music does not distract 	<ul style="list-style-type: none"> ○ Additional sound, such as music, effects, and ambient sound, are present and support the message.

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	from the primary audio.	
Editing	<ul style="list-style-type: none"> ○ Shots are edited and flow logically. ○ Video is the appropriate length and has a good pace. ○ Simple transitions and titles are used effectively and do not distract from the message. 	<ul style="list-style-type: none"> ○ Editing choices create a more dynamic and layered video project in support of the overall message. ○ Edits between shots demonstrate seamless transitions.
Group Participation	<ul style="list-style-type: none"> ○ Everyone collaboratively participates on the project. ○ Educator drives the process. 	<ul style="list-style-type: none"> ○ Group is actively engaged in the project and takes ownership of the video. ○ The group drives the project forward and makes group decisions collectively.

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APPENDIX H: FORMATIVE AND SUMMATIVE EVALUATION

Both formative and summative evaluations of the video production curriculum may prove to be useful, especially if the curriculum may be used multiple times. The provided sample evaluations are excellent models for creating your own formative and summative assessments.

Formative Evaluation: Youth Participant Journal

Name: _____

Date: _____

Today, we did the following:

Today, I learned...

The best thing about today was...

The hardest thing about today was...

If I could have changed one thing about today's session, it would be...

and I would change it by...

During our next session, I would like us to...

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Formative Evaluation: Educator Documentation

Week ____ of Program

Date: _____

Activities and materials used (if applicable) today:
List all activities, whether in curriculum or not

By the end of today's session, we accomplished...

Challenges from today's session and how those challenges were met include...

If I could have changed one thing about today's session, it would be...

and I would change it by...

During our next session, I would like us to...

GC3 Video Production Curriculum

Summative Evaluation: Video Production Curriculum Evaluation for Youth Participants

Video Production Curriculum Pre-Test

Think about science, technology, engineering, and math. Also, think about making videos and films. Then answer the questions below.

1. How interested are you in the following subjects?

	Not interested			Very interested	
	1	2	3	4	5
Math					
Science					
Technology					
Engineering					

2. My level of confidence about my abilities and my knowledge of the following subjects is:

	Not confident			Very confident	
	1	2	3	4	5
Math					
Science					
Technology					
Engineering					

3. Rate your current level of interest in a career that involves the following subjects:

	Not interested			Very interested	
	1	2	3	4	5
Math					
Science					
Technology					
Engineering					

4. What is one interesting thing you'd like to learn as a part of GC3?

5. What do you think will be challenging/difficult about being a part of GC3?

GC3 Video Production Curriculum

6. Check the box that most accurately describes how well you can perform each of the following tasks:

	I don't know what this means.	I don't know how to do this.	I can do this.	I can do this well.	I can teach someone how to do this. I'm an expert.
Talk about how media portrays young women.					
Create and read a poem or story.					
Create a list of interview questions.					
Interview someone.					
Navigate the FunWorks Web site .					
Navigate a Web site about careers other than the FunWorks (_____).					
Use a (video) camcorder.					
Use a digital camera.					
Tell others about some careers in science and engineering.					
Tell others how science and engineering help society.					
Film a video for other girls my age to watch.					

GC3 Video Production Curriculum

7. How strongly do you agree or disagree with the following statements?

	Strongly Disagree	Disagree	Agree	Strongly Agree
There are equal numbers of men and women in math and science careers.				
It is more difficult for women to get ahead in math and science careers than for men.				
People who enter math and science careers tend to be “nerds” who lack social skills.				
Scientists and engineers work mainly alone, with equipment rather than people.				
Men and women can succeed in science/technology careers.				
There are many good jobs available for people with advanced training in math, science, and engineering.				
Careers in math and science offer high salaries.				
Scientists and engineers work longer hours than most other professionals.				
Becoming a scientist is a good way to help people.				
Math and science careers are particularly difficult to combine with raising a family.				
A scientist's work is dangerous.				
Scientists are good for society because they help find cures.				
We would be better off without scientists.				
Without scientists, we would still be living in caves.				
A scientist's work is dull.				
A scientist's work is boring.				
A scientist's work is time consuming.				
Most people should study some mathematics.				
You can get along perfectly well in everyday life without mathematics.				
Most people should study some science.				

GC3 Video Production Curriculum

	Strongly Disagree	Disagree	Agree	Strongly Agree
You can get along perfectly well in everyday life without science.				
I believe that it is very important for me to learn how to use technology.				
I would like to work in a job that uses a lot of technology.				
I believe that digital media helps to connect people.				
Digital media can help me communicate my message/ideas.				

That's it! You're done!

GC3 Video Production Curriculum

Video Production Curriculum Post-Test

Think about science, technology, engineering, and math. Also, think about making videos and films. Then, answer the questions below.

1. How interested are you in the following subjects?

	Not interested			Very interested	
	1	2	3	4	5
Math					
Science					
Technology					
Engineering					

2. How has your participation in GC3 developed your level of interest in the following subjects?

	Decreased Greatly	Decreased	Did Not Change	Increased	Increased Greatly
	Math				
Science					
Technology					
Engineering					

3. My level of confidence in my abilities and my knowledge of each of the following subjects is:

	Not confident			Very confident	
	1	2	3	4	5
Math					
Science					
Technology					
Engineering					

4. How has your participation in GC3 developed your confidence in your abilities and your knowledge in each of the following subjects?

	Decreased Greatly	Decreased	Did Not Change	Increased	Increased Greatly
	Math				
Science					
Technology					
Engineering					

5. Rate your current level of interest in a career that involves the following subjects:

	Not interested			Very interested	
	1	2	3	4	5
Math					
Science					
Technology					
Engineering					

GC3 Video Production Curriculum

6. How has your participation in GC3 developed your level of interest in a career that involves the following subjects?

	Decreased Greatly	Decreased	Did Not Change	Increased	Increased Greatly
Math					
Science					
Technology					
Engineering					

7. Check the box that most accurately describes how well you can perform each of the following tasks:

	I don't know what this means.	I don't know how to do this.	I can do this.	I can do this well.	I can teach someone how to do this. I'm an expert.
Talk about how media portrays young women.					
Create and read a poem or story.					
Create a list of interview questions.					
Interview someone.					
Navigate the FunWorks Web site .					
Navigate a Web site about careers other than the FunWorks (_____).					
Use a (video) camcorder.					
Use a digital camera.					
Tell others about some careers in science and engineering.					
Tell others how science and engineering help society.					
Film a video for other girls my age to watch.					

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8. The self-expression or career **activity** I liked *most* was:

Why?

9. The self-expression or career **activity** I liked *least* was:

Why?

10. **In general**, what was the coolest thing you did here at GC3? What was fun about it?

11. **In general**, what was the least interesting thing you did here at GC3? Why do you say that?

12. How would you change GC3 to make it better?

13. If a friend of yours was considering coming to this program, what would you tell her?

14. How do you think GC3 has made you think differently about math, science, and engineering?

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15. How strongly do you agree or disagree with the following statements?

	Strongly Disagree	Disagree	Agree	Strongly Agree
I think I learned a lot from participating in GC3.				
I think the sessions were too long.				
I put a lot of effort into GC3.				
Overall, GC3 was a worthwhile experience for me.				
There are equal numbers of men and women in math and science careers.				
It is more difficult for women to get ahead in math and science careers than for men.				
People who enter math and science careers tend to be “nerds” who lack social skills.				
Scientists and engineers work mainly alone, with equipment rather than people.				
Men and women can succeed in science/technology careers.				
There are many good jobs available for people with advanced training in math, science, and engineering.				
Careers in math and science offer high salaries.				
Scientists and engineers work longer hours than most other professionals.				
Becoming a scientist is a good way to help people.				
Math and science careers are particularly difficult to combine with raising a family.				
A scientist's work is dangerous.				
Scientists are good for society because they help find cures.				
We would be better off without scientists.				
Without scientists, we would still be living in caves.				
A scientist's work is dull.				
A scientist's work is boring.				
A scientist's work is time consuming.				

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	Strongly Disagree	Disagree	Agree	Strongly Agree
Most people should study some mathematics.				
You can get along perfectly well in everyday life without mathematics.				
Most people should study some science.				
You can get along perfectly well in everyday life without science.				
I believe that it is very important for me to learn how to use technology.				
I would like to work in a job that uses a lot of technology.				
I believe that digital media helps to connect people.				
Digital media can help me communicate my message/ideas.				

That's it! You're done!