UNIT 2 – EXPLORING STEM CAREERS

OVERVIEW

Middle school and high school students will view short video clips from students who are interested in STEM careers. Additionally, students will be shown comparisons of technologies from the past, present and future. Students will then use on-line resources to explore different career resources before writing an essay or an ASL vlog about their future career as a STEM professional.

ADDITIONAL RUBRIC

	(Excellent) 4	(Good) 3	(Satisfactory) 2	(Needs Improvement) 1
Student identifies STEM careers/professions.	Student clearly identifies one or two characteristics of a STEM career/profession.	Student clearly identifies one characteristic of a STEM career/profession.	With help, student identifies one characteristic of a STEM career/profession	Even with assistance, student is not able to identify any characteristics of a STEM career/profession (a student is therefore assigned).
Student is able to identify what training and educational requirements are needed if pursuing specific STEM careers.	Student clearly identifies two or more training and/or educational requirements if interested in pursuing specific STEM careers.	Student clearly identifies one or two training and/or educational requirements if interested in pursuing specific STEM careers.	With help, student identifies one training and/or educational requirement if interested in pursuing specific STEM careers.	Even with assistance, student is not able to identify any training and/or educational requirements if interested in pursuing specific STEM careers (a student is therefore assigned).

KEY VOCABULARY

- Visit Link for List.

ADDITIONAL RESOURCES

- Visit Link for List.

LESSON PLANS

Lesson 6: What is a Scientist?
Lesson 7: Deaf professionals in STEM careers
Lesson 8: Changing Technologies

LESSON PLAN 6: WHAT IS A SCIENTIST?

LESSON OBJECTIVES

- Discuss the personal characteristics STEM professionals share.
- Compare and contrast the different perspective students have regarding what a scientist looks like, what jobs they do and educational requirements.

ACTIVITY TIME

- One 50 minute class period.

TARGET GRADE

- Adaptable for 6th through 12th grade.

MATERIAL LIST

- Paper and pencils or colored markers.
- Computers with Internet (preferably one per student or pair of students).
- At least one computer with a projector for class to view.

KEY VOCABULARY

- Visit Link for List.

ONLINE RESOURCES

- Visit Link for List.

CORE STANDARDS

- Visit Link for List.

ACTIVITY

1. Without any prior discussion, ask the students to draw a scientist on a piece of paper. Provide at least 15 minutes of class time to complete this activity. Have each student give his/her scientist a name.

2. Have students share their drawings with a partner. Have each pair of students make a list of similarities and differences between their drawings.

3. Create a master list on the white board of what a scientist looks like, what gender a scientist is, and what the scientist is doing. Include any specific characteristics such as 'wears glasses, crazy eyes, weird hair" etc.

4. Discuss students' perceptions of what a scientist looks like and what one does, what jobs they think of a scientist doing, etc. Collect the drawings and keep the master list on the white board for use with Lesson 2.

LESSON PLAN 7: DEAF PROFESSIONALS IN STEM CAREERS

LESSON OBJECTIVES

- Discuss the personal characteristics STEM professionals share.
- Predict the difference that may be seen within the next ten years for technology-based devices.
- Describe at least three different careers in science, technology, engineering, or mathematics fields.
- Compare and contrast the education requirements needed in two different STEM careers.

ACTIVITY TIME

- Three 50 minute class periods.

TARGET GRADE

- Adaptable for 6th through 12th grade.

MATERIAL LIST

- Paper and pencils or colored markers.
- Computers with Internet access (preferably one per student or pair of students).
- At least one computer with a projector for class to view.

KEY VOCABULARY

- Visit Link for List.

ONLINE RESOURCES

- Visit Link for List.

ACTIVITY

1. Show the students the DeafTEC videos of D/HH people working in STEM areas.

   - Anna Thelen, Chemistry Technician, Mérieux NutriSciences USA (4:29)
   - Ryan Shields, CNC Operator, Tiffany & Co. (5:40)
   - Ricky D. Sanders & Justin A. Davis, Machinists, Corpus Christi Army Depot (6:16)
   - Will Roach, 777 Build Engineer, Boeing (4:48)
   - Matt Martella, Applications Programmer, Highmark (6:14)
   - Bill Huber and Qing Quan, Software Engineers, IBM (6:29)

2. Ask the students to pick one of the videos they watched and list the similarities and differences of the people in the video clips. Use the white board to write down the similarities and differences in a column next to the master list of the scientist descriptions. Compare the student observations from the videos of the d/hh individuals working in STEM areas to the master list of the scientist descriptions generated by the students. Discuss with the students the stereotypes they may have had about scientists, prior to doing this activity.

3. Ask the students to view the following short video clips about technologies from yesterday as compared with today. The first video shows a student writing on paper with a pen/pencil versus texting).

The 2nd video shows game technology differences i.e. an fashioned ping pong Nintendo game being played on an old fashioned TV versus Xbox/WII Tennis being played on a flat screen computer (15 seconds).

The 3rd video shows someone using a typewriter versus a computer (15 seconds).

CORE STANDARDS

- Visit Link for List.

Lead a discussion with the students about what technologies were shown representing yesterday and which represented today. Ask the students to give some other examples of technologies representing yesterday versus today.

4. Discuss with the students how science and technology has transformed how we communicate, are entertained, and find out information (texting, electronic games, streaming movies, etc.).

5. Have small groups of students generate up to 10 objects that people use on a regular basis that their parents didn't have when they were the same age as the students.

6. Have the students create a master list of the 10 most common items on the board. Discuss with the students why these items are useful and what life would be like without them.

7. Ask students to choose five of the 10 items and write (or video) a short description of what they think the item might look like or be capable of doing 10 years in the future. (This can be assigned as a group task for two or three students or an individual assignment.)

LESSON PLAN 8: CHANGING TECHNOLOGIES

LESSON OBJECTIVES

- Predict the differences that may be seen within the next ten years for technology-based devices.
- Describe at least three different careers in science, technology, engineering, or mathematics fields.

ACTIVITY TIME

- Three 50 minute class periods.

TARGET GRADE

- Adaptable for 6th through 12th grade.

MATERIAL LIST

- Paper and pencils or colored markers.
- Computers with Internet (preferably one per student or pair of students).
- At least one computer with projector for class to view.

KEY VOCABULARY

- Visit Link for List.

ONLINE RESOURCES

- Visit Link for List.

CORE STANDARDS

- Visit Link for List.

ACTIVITY

1. Lead a discussion about the changes in technology in the past five or six. Use student responses from the prior assignment and have them explain why they think the objects will change in the way they've predicted.

2. Discuss how some technical occupations have changed in the past decade or two: computer programmer, computer game designer, rocket scientist, meteorologist, pilot, telephone operator, DNA lab technician, auto mechanic, national security agent, etc.

3. Have the students discuss how changing technologies create new jobs and change old ones, or even how the jobs may become obsolete (no longer needed).

4. Discuss how STEM professionals cannot work in isolation, but need to work with teams of people who may never actually meet in person, due to various methods of electronic communication (working remotely).

5. Ask the students to explore several of the Web-based career information sites (share online resource list).

6. Using at least two web based career information sites, have students work alone or in teams to begin gathering information on different careers in science, technology, engineering, or mathematics fields. Have the students write down the websites they used, and share the information with their classmates.

UNIT 2 – EXPLORING STEM CAREERS – DIFFERENT TYPES OF STEM JOBS AND FUTURE EMPLOYMENT TRENDS

OVERVIEW

There are many different types of STEM jobs. Student's interests and skills can help determine the type of career, pay, and quality of life each person may acquire. Students will discuss the different types of STEM career paths and future employment trends. Students will begin to discuss the wide range of STEM Careers available, and what kind of possible jobs there may be for them to do in the future.

OBJECTIVES:

- Students will learn about different types of STEM career paths and future employment trends.
- Students will learn about how new STEM jobs are created because of societal needs.
- Students will understand what skills different types of STEM jobs require.
- Students will learn to identify what classes are required in high school and college if pursuing specific STEM careers.

KEY VOCABULARY

- Visit Link for List.

ADDITIONAL RESOURCES

- Visit Link for List.

LESSON PLANS

Lesson 9: Why Students should be interested in a STEM Career
Lesson 10: Cool STEM Careers
Lesson 11: Meet Deaf professionals working in STEM careers
Lesson 12: Possible STEM Careers: Computers
Computer Literacy and Social Media:

- Activity 1: Introduction to Social Media
- Activity 2: Who is my friend on Social Media?
- Activity 3: What information do I share on Social Media?
- Activity 4: Making a VLOG: Safety on Social Media
- Activity 5: Social Media and your job!

Lesson 13: Exploring Current STEM Jobs
Lesson 14: STEM Careers of the Future

LESSON PLAN 9: WHY STUDENTS SHOULD BE INTERESTED IN A STEM CAREER

LESSON OBJECTIVES

- Discuss the personal characteristics STEM professionals share.
- Compare and contrast the different perspective students have regarding to what a scientist looks like, what jobs they do and educational requirements.

ACTIVITY TIME

- Four 50 minute class periods.

TARGET GRADE

- Adaptable for 6th through 12th grade.

MATERIAL LIST

- Paper and pencils or colored markers.
- Computers with Internet (preferably one per student or pair of students).
- At least one computer with a projector for class to view.

KEY VOCABULARY

- Visit Link for List.

ONLINE RESOURCES

- Visit Link for List.

CORE STANDARDS

- Visit Link for List.

ACTIVITY

1. Have students watch the video talking about reasons why students may not be interested in STEM careers. A scale is provided with titles of jobs and students indicate if they think the job is cool, kind of cool or super cool. The students repeat the activity using pictures of people doing the same kinds of jobs. Have students discuss why they think there was a difference in what students thought of each job when presented with the title versus image of the job.

2. Students will discuss the wide range of STEM Careers available, and what kind of possible jobs there may be for them to do in the future. Have students watch the video "Jobs of the Future!" and "What I want to do in the future video". Once completed, have students discuss what they learned in each video and brainstorm what they think is important to think about when trying to decide on a career for the future.

    - Jobs of the Future
    - What I want to do in the future

2. Ask Students to complete the STEM Career Information Worksheet. On the worksheet students are asked to list at least five different careers and the following information for each one: title, education requirements (degree or certification), current estimated salary range, and demand for the next several years, typical work activities or work description.

3. Include the URL of the Web site (use at least 2 different sites).

4. Lead a discussion about which careers are the most interesting to the students and which ones have the highest income. Have students use internet resources that

LESSON PLAN 9: WHY STUDENTS SHOULD BE INTERESTED IN A STEM CAREER (PAGE 2)

show how the level of education one attains is directly linked to income.

5. Discuss the educational requirements of several careers described by the students. Using the Web resources, choose two careers from similar fields and discuss which one requires more education and why.

6. Discuss the following statistics from the National Football Players Association and the National Basketball Association: What are my chances of becoming an NFL Player?

Have students read the following information and once done; review the information together with the class.

While many young people every year set their goals on becoming NFL players, it is extremely difficult to reach that level. Statistically of the 100,000 high school seniors who play football every year, only 215 will ever make an NFL roster. That is 0.2%! Even of the 9,000 players that make it to the college level only 310 are invited to the NFL scouting combine, the pool from which teams make their draft picks. As you can see, most people who want to become NFL players will not. Therefore it is very important to come up with alternative plans for the future. (Source: National Football Players Association, 2009 NFL Hopeful FAQs)

Only 60 players are taken each year in the National Basketball Association draft, and only 40 or so actually get a spot on a team. Most of those are college students or college graduates. Over 5 million high school boys are playing basketball each year. So 40 out of 5,000,000 is a 0.00008% chance of becoming a basketball player, much less a basketball star.

7. Ask the students which is more likely: someone from their class becoming a pro athlete or an award-winning entertainment star (movie or TV), or that someone from their class will become a scientist, engineer, or mathematician who helps work on a new technology that will help improve people's lives.

8. Using information from the Department of Labor Occupational Outlook Handbook, list the science and technology careers that have the largest expected growth from 2014-2024: i.e. network systems and data

LESSON PLAN 9: WHY STUDENTS SHOULD BE INTERESTED IN A STEM CAREER (PAGE 3)

communications analysts, home health aides, computer software engineers and applications, veterinary technologists and technicians, personal financial advisors, medical assistants, veterinarians, financial analysts, gaming surveillance officers and gaming investigators, physical therapist assistance, pharmacy technicians, forensic science technicians, dental hygienists. Source: Department of Labor Bureau of Labor Statistics Occupational Outlook Handbook (OOH)

Fastest growing occupations: 20 occupations with the highest percent change of employment between 2014-24.

9. Have students write an essay/ASL video/vlog about choosing a STEM career over a career in the entertainment or sports industry.

10. Have student's research one career in depth and develop an educational plan for the remainder of their school career to choose the courses that would allow them to enter a degree or certificate program after high school graduation. If available, bring in guest speakers to discuss their careers in STEM or use other videos on the internet.

11. Discuss the educational requirements of several careers described by the students. Using the Web resources, choose two careers from similar fields and discuss which one requires more education and why.

Profiles of professionals in various STEM jobs - Throughout this site you'll find profiles of professionals working in the fields of science, technology, engineering, mathematics, computing, and healthcare.

LESSON PLAN 10: COOL STEM CAREERS

LESSON OBJECTIVES

- Learn about different types of STEM career paths and future employment trends.
- Learn about how new STEM jobs are created because of societal needs.
- Understand what skills different types of STEM jobs require.
- Learn to identify what classes are required in high school and college if pursuing specific STEM careers.

ACTIVITY TIME

- Three to five 50 minute class periods.

TARGET GRADE

- Adaptable for 6th through 12th grade.

MATERIAL LIST

- Interactive whiteboard (or just an LCD projector)
- Internet access.
- Computers for students to use.
- Pencils/Paper.

KEY VOCABULARY

- Visit Link for List.

ONLINE RESOURCES

- Visit Link for List.

ACTIVITY

Cool Science Careers under Web Adventures: http://webadventures.rice.edu/stu/Games/Cool-Science-Careers/ [requires Adobe Flash]

Middle and high school students experience what it is work in a STEM career through interactive activities and games.

- Professional Pathfinders: You are matched to a science career based on your interests. You are asked 21 questions and answer if you are very interested, somewhat interested, not interested.

- Imagine Yourself: The students are able to virtually conduct activities that are done by people in STEM areas. This activity includes education requirements and interviews with scientists.

- Zoom In: Want to get the facts straight, select a science career and zoom in. Learn what education is needed and read interviews with real people in science.

- My science career picks: Which of the careers on the site did you like best? Vote and see how others have voted.

- Ask a scientist: Do you have questions about a science career, see common questions and answers.

Choosing a Major

These activities and web site has information on assisting students in selecting majors and the preparation needed for training in that area. Parts of this web site could be used for activities geared towards preparation for college selection. **http://www.egfi-k12.org/about/**

1. Click on Engineer Your Path

CORE STANDARDS

- Visit Link for List.

LESSON PLAN 10: COOL STEM CAREERS

a. Click on meet a student- click on a student's picture and find out why these students chose particular Engineering majors.

b. After the explanation from the college student about their major, you can click on the area of interest the student has, and get more information about it i.e. mechanical engineering

c. Getting In: Advice and strategies needed to get into an engineering major when going to college.

Staying organized - You will see a basic schedule to help you plan ahead and stay on top. Find out what you need to do your junior and senior years of high school, including test dates and application deadlines.

LESSON PLAN 11: MEET MORE DEAF PROFESSIONALS WORKING IN STEM CAREERS

LESSON OBJECTIVES

- Watch videos of Deaf and Hard of Hearing professionals in STEM careers.
- Use Internet resources to research one of these careers, or design their own career based on 21st century needs identified in the slideshow.
- Create an individual slide and description based on his/her selected career to create a slideshow about STEM careers of the future.

ACTIVITY TIME

- Three to five 50 minute class periods.

TARGET GRADE

- Adaptable for 6th through 12th grade.

MATERIAL LIST

- Paper and pencils or colored markers.
- Computers with Internet (preferably one per student or pair of students).
- At least one computer with a projector for class to view.

KEY VOCABULARY

- Visit Link for List.

ACTIVITY

Students will meet deaf professionals working in STEM areas. Students will pick one of the following tapes to view. Once finished, they will answer the following questions (to be developed) or write a paragraph/video describing what the person did for their job and if it would fit under science, technology, engineering or math Watch the videos of Deaf people in interesting jobs. Students will get a short but honest impression of Deaf people doing a variety of jobs. It is hoped that this will provide young Deaf people with a perspective on the types of work they can do in the future. After students watch the videos, discuss any thoughts and observations they had.

Videos:

DeafTEC videos of D/HH people working in STEM areas.

- Anna Thelen, Chemistry Technician, Mérieux NutriSciences USA (4:29)
- Ryan Shields, CNC Operator, Tiffany & Co. (5:40)
- Ricky D. Sanders & Justin A. Davis, Machinists, Corpus Christi Army Depot (6:16)
- Will Roach, 777 Build Engineer, Boeing (4:48)
- Matt Martella, Applications Programmer, Highmark (6:14)
- Bill Huber and Qing Quan, Software Engineers, IBM (6:29)

Deaf working on helicopters and planes

First Deaf Engineer

Chose one (or more) of the following activities for your students:

ONLINE RESOURCES

- Visit Link for List.

CORE STANDARDS

- Visit Link for List.

1. Ask students to create a slideshow about future careers. Each student (or pair of students) will create one slide with a student-generated image (or video), a job description, an explanation of why the job is needed, and a list of the skills/training that would be useful in obtaining the job.

2. Challenge students to conduct further research on the Internet. Assist students in setting up interviews with people working in STEM areas via VRS/VP/Facetime/Skype to learn more about the career's potential and the realities of working within the field.

3. Provide time in class or at home for students to create their slide and description. They may want to use digital drawing tools to create the image, or take a photograph. Have students upload their image and copy and paste their description into a class Google Presentation or other collaborative tool for creating slideshows.

4. When the slideshow is assembled, show it to the class and allow each student to present his or her slide. Facilitate a discussion about the inter-relatedness of many of the career paths, and help students make connections to things they are currently studying in school.

5. Encourage students to self-reflect on the assignment and what they learned about future careers in STEM fields. You may want to make the slideshow available on your class or school website so that family and community members can view and comment on it.

6. Use internet resources to research one of these careers, or design their own career based upon the most pressing 21st century needs identified in the slideshow.

LESSON PLAN 12: POSSIBLE STEM CAREERS: COMPUTERS

LESSON OBJECTIVES

- Become familiar with the steps involved in coding.
- Play games and learn how each step in the game requires a computer code that they will learn to type.
- Become familiar with the mathematics behind coding.

ACTIVITY TIME

- Five 50 minute class periods.

TARGET GRADE

- Adaptable for 6th through 12th grade; also adaptable for early readers or students with no language.

MATERIAL LIST

- Computers with Internet access.
- At least one computer with a projector for class to view.
- Paper and Pencils.

KEY VOCABULARY

- Visit Link for List.

ONLINE RESOURCES

- Visit Link for List.

CORE STANDARDS

- Visit Link for List.

ACTIVITY

These courses (listed below) focus on several basic, but important, concepts in coding:

1) understanding algorithms / programs, binary code,

2) learning sequences used in programming including loops and conditionals,

3) creating stories and

4) relay programming and debugging.

Even the youngest students understand that algorithms are just a list of steps that need to be followed to complete a task.

Course 1 gives examples of algorithms without language (using only arrows), ideal for early readers or students with no language. Students learn algorithms from color-coded programs that they create using trial and error.

Courses 2-4 use the same color-coding principals but use coding language to walk students through each task. Once students master simple algorithms they can develop more complicated ones using loops and conditionals. Once students have experienced applying more complicated algorithms to their own stories (i.e. games), they can start debugging or working in teams to debug each other's programs (relay debugging).

Website: Computer Science – Coding

Course 1: For early readers or students with no language.

Course 2: For students age 6+

Course 3: For students age 8-18

Course 4: For students age 9-18

Computer Literacy and Social Media

This lesson is made up of several activities that are meant to be used together and in sequence. The concepts build on one another and lead to a final project at the end. The goal is to introduce students to social media, help them develop a knowledge base about proper use of social media and then to help them develop a Public Service Announcement (PSA) vlog about social media use.

ACTIVITY 1: INTRODUCTION TO SOCIAL MEDIA

LESSON OBJECTIVES

By the end of the lesson, students should be able to:

- Differentiate between different social media (SM) sites.
- Recognize that different SM sites serve different purposes.
- Be able to discuss the pros and cons of using different SM sites.

ACTIVITY TIME

- Five 50 minute class periods.

TARGET GRADE

- Adaptable for 6th through 12th grade and with the Alternative Curriculum Education Program

MATERIAL LIST

- Have computers or iPads available for students.
- Notepads and pencils.
- Poster board, magazines, drawing supplies.
- File of pictures for logos from different websites; cut

ACTIVITY

Pre-teach: Vocabulary words by matching up ASL name signs, pictures of logos and words.

Discussion: What apps do you know? Did you know you can categorize these apps into three basic groups? One for Pictures and talking, another for just talking and another for just Videos. Can we list three apps under each category? For example:

- *Pictures and texting:* Facebook, Pinterest and Snapchat
- *Chat/Text only:* Reddit, Twitter and WhatsApp
- *Videos only:* Vimeo, TikTok, and YouTube

What would be the pros and cons of using these sites? Let's name just two of each. For example:

- *Pros:* connect with my friends, find cool pictures or videos
- *Cons:* People I do not know who will see what I post, I might see something inappropriate

Optional Activity:

How fast can my post be seen by other people? Have the class make a sign. For example: "This is Mr. T's class. We are at the School for the Deaf in Riverside. We saw the blog by Mrs. Berg in Bakersfield, CA and liked her idea. We also want to see how fast our picture can get around the internet. Help us by liking this picture."

Post the picture of the class poster and check the post every day to see how many *Likes* you get. Discuss the

out individual logos for all students.
- Circle maps.
- List of vocabulary words and pictures to pre-teach.
- Optional video: https://youtu.be/-FnH78p8QkA : 6 Clicks and I know you!
- Optional video: https://youtu.be/mBsoODqfQgA : Post to be Private!

KEY VOCABULARY

- Visit Link for List.

ONLINE RESOURCES

- Visit Link for List.

difference between *Likes* and *Views*. Make a log of how many *Likes* are collected each day and track it in class.

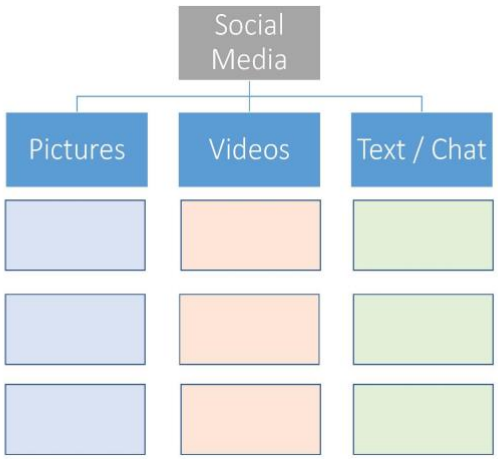
Optional Grading Procedures:
Summative Assessments (60%) evaluate student learning at the conclusion of the instruction unit, such as tests, presentations or final essays. Formative Assessments (30%) are on-going evaluation of student's current understanding during a unit, such as quizzes, classroom discussion, and weekly summaries. Lastly, Skills for Success (10%) shall incorporate communication, collaboration, literacy, critical thinking, community and work ethics as part of their daily routine. Examples include participation and homework.

Rubric:

Formative Assessment: Have students categorize different kinds of social media into a tree map. Categorize by the three categories taught: Pictures and Texting, Chat/text only and Videos only.

Formative Assessment 2: Tell me 2-3 (4-5, 6-7) things about each SM.

[see next page for suggested rubric]



Summative Assessment:

	Below Standard	Approaches Standard	Meets Standard	Above Standard
Content ● is relevant to goal and topic. ● is correct/accurate. ● is organized in a logical fashion.				
Critical thinking ● shows detailed understanding of central aspects of goal and topic. ● uses multiple, varied, and reliable sources. ● can clearly explain new understanding gained in the project and how it might transfer to other situations.				
Creativity ● in addition to typical sources, finds new ways or places to get information. ● uses ingenuity and imagination when thinking about how to categorize information. ● is innovative & unique; shows a personal perspective when thinking about pros / cons.				
Collaboration ● shares ideas with the team. ● completes tasks on time. ● helps the team solve problems and manage conflicts. ● acknowledges and respects other perspectives. Disagrees diplomatically.				

ACTIVITY 2: WHO IS MY FRIEND ON SOCIAL MEDIA?

LESSON OBJECTIVES

By the end of the lesson, students should be able to:

- Understand who is their friend and who is not on Social Media (SM).

ACTIVITY TIME

- Five 50 minute class periods.

TARGET GRADE

- Adaptable for 6th through 12th grade and with the Alternative Curriculum Education Program

MATERIAL LIST

- Computers
- Notepads and pencils.
- Poster board, magazines, drawing supplies.
- Video: https://youtu.be/y4nyluaXoFY : Friend or Fake
- Letter to Parents.
- Protecting your Kids Online handout (optional item to send to parents).
- Social Media Safety for Teens handout (optional item to send to parents).

KEY VOCABULARY

- Visit Link for List.

ONLINE RESOURCES

- Visit Link for List.

ACTIVITY

Task 1:

Start by watching the YouTube video Friend or Fake by NetzSmart Workshop. It is recommended that the students watch the entire video first. Then the video should be repeated, and each section be signed slowly for the students (e.g., watch the first 44 seconds on the basketball court and sign what each person says, then the next section, etc.), check for comprehension.

Task 2:

Next, discuss with class, what are the characteristics of a friend. List these on the board. For example, a friend is someone I can tell anything to, a friend is someone who will respect me, a friend will not talk about me behind my back. For homework, have the students make a list of the names (and name signs) and bring pictures of all their good friends and family members and bring it to class.

Task 3:

Teach Circles Relationships for Social Media. Explain to students, you are the center of your own social circle. You need to protect yourself and think about who you want to let into your circle of trust (show the rainbow circle). Purple is you. Blue is close family and close friends. These are people you can trust and people you can tell important things to. Name some people you can trust. These are also people you can hug (or kiss, if they are your partner or boy/girlfriend). Green is for close family and friends that you may not see as often. These are people that you can trust and hug when you see them. You recognize these people when you see them on the street or at a party. Yellow is for people you have met a few times, but you do not share lots of information about yourself. Orange is for people you may recognize but never share information about yourself with. And red is for people that you do not know or recognize. These are people you will never share information with. Name some people for this group. Give each student a color

print of the Circles relationship for Social Media and have them cut out and clue pictures of their family members onto each color, according to their comfort level with that person.

Task 4:

Finally, circle activity (this requires preplanning on the part of the teacher). Draw a circle on the board or use Circles for Social Media attached. Have ready pictures of all the students in the class, their friends, family, and the teacher. Discuss with the class, who belongs in each part of the circle. Leave the Circles for Social Media up on the wall in the classroom all year; refer to it often.

Optional Task:

Make a copy of the Circles for Social Media very large and lay it on the ground. Have one student stand in the middle of the circle and place other students in different parts of the circles.

Letter to Parents

Date

Dear

This semester we are working on teaching students about responsible use of Social Media. Part of our project is helping students recognize who is a friend online and who is not. For this project, I am asking the students to gather pictures of close family members and friends with the names written on the back. Can you please help your student gather a few pictures (making sure the name of each person is on the back)? We will do our best to return these pictures.

Sincerely,

ACTIVITY 3: WHAT INFORMATION DO I SHARE ON SOCIAL MEDIA?

LESSON OBJECTIVES

By the end of the lesson, students should be able to:

- Differentiate between private information and information that is all right to share.
- Friends on Social Media (SM) can have access to some information about you (name, birthday), but no one needs to know your address or social security number.

ACTIVITY TIME

- Five 50 minute class periods.

TARGET GRADE

- Adaptable for 6th through 12th grade and with the Alternative Curriculum Education Program

MATERIAL LIST

- Computers
- Notepads and pencils.
- Poster board, magazines, drawing supplies.
- Video: https://youtu.be/T6ulH2bWCnY : Do Not Post!
- Video: https://youtu.be/bc1aJOvORm8 : Profile Shares

KEY VOCABULARY

- Visit Link for List.

ACTIVITY

Task 1:

Pre-teach: vocabulary words. Send words home for students to review.

Review Circles Relationships for Social Media. Explain to students, you are the center of your own social circle. You need to protect yourself and think about who you want to let into your circle of trust (show the rainbow circle). Purple is you. Blue is close family and close friends. These are people you can trust and people you can tell important things to. Name some people you can trust. These are also people you can hug (or kiss, if they are your partner or boy/girlfriend). Green is for close family and friends that you may not see as often. These are people that you can trust and hug when you see them. You recognize these people when you see them on the street or at a party. Yellow is for people you have met a few times, but you do not share lots of information about yourself. Orange is for people you may recognize but never share information about yourself with. And red is for people that you do not know or recognize. These are people you will never share information with. Name some people for this group. Give each student a color print of the Circles relationship for Social Media and have them cut out and clue pictures of their family members onto each color, according to their comfort level with that person.

Discuss what type of personal information do you share online? For example:

- *Address?* No
- *Birthday?* Maybe
- *Social Security number?* No
- *VP number?* No
- *Credit Card Number?* No
- *Parent's credit card number?* No
- *Sister's Name?* No

ONLINE RESOURCES

- Visit Link for List.

- *Brother's Name?* No
- *School's name?* Maybe

Discussion with the group what information is ok to share with people online and what information is not ok to share with people online. Write this on the board in two categories.

ACTIVITY 4: MAKING A VLOG: SAFETY ON SOCIAL MEDIA

LESSON OBJECTIVES

Students will learn how to write a script on PowerPoint related to safety using social media. Concepts covered will be the 3 kinds of social media, the pros and cons of each kind, who your friends are on social media and what information is safe to share. As a group, students will film a 10 minute vlog then as individuals students will film 1-2 minute vlog on topic they choose related to safety. All vlogs will be posted on CSDR intranet.

ACTIVITY TIME

- Ten 50 minute class periods.

TARGET GRADE

- Adaptable for 6th through 12th grade and with the Alternative Curriculum Education Program

MATERIAL LIST

- Computers
- Notepads and pencils.
- Poster board, magazines, drawing supplies.

KEY VOCABULARY

- Visit Link for List.

ONLINE RESOURCES

- Visit Link for List.

ACTIVITY

Task 1:

Pre-teach: Vocabulary words

Task 2:

Teach use of video cameras or iPhones / iPads for videotaping.

Task 3:

Students will make a video about safety on Social Media. These videos will be shown during lunch at CSDR. Have students begin by developing a PowerPoint script of what they will say. Use the information they have learned over the last few weeks. Can split students into groups of 2 or more. Each student will sign the information on one PP slide for the video.

Optional Lesson: pick a social media site and explain the pros and cons of the website.

Optional Lesson: class can do video as a group instead of in small groups.

ACTIVITY 5: SOCIAL MEDIA AND YOUR JOB!

LESSON OBJECTIVES

Students will complete several questions related to future employment.

ACTIVITY TIME

- Two 50 minute class periods.

TARGET GRADE

- Adaptable for 6th through 12th grade and with the Alternative Curriculum Education Program

MATERIAL LIST

- Computers
- Notepads and pencils.
- Optional video: https://youtu.be/-FnH78p8QkA : 6 Clicks and I know you!

KEY VOCABULARY

- Visit Link for List.

ONLINE RESOURCES

- Visit Link for List.

ACTIVITY

Task 1:

Complete the following questions as a group, in pairs, or independently:

1. What types of information or photos would you consider unprofessional to a potential or current employer?
2. What reasons might an employer give for requesting access to an employee's Facebook, Twitter, or other social media account?
3. Do you think that employers should have access to potential or current employees' social networking accounts? Explain.
4. Describe how you would respond to a similar request when applying for a job?

LESSON PLAN 13: EXPLORING CURRENT STEM JOBS

LESSON OBJECTIVES

- Become familiar with some of the everyday STEM careers that make your everyday life possible.
- Explore STEM careers that may be a good match for you.
- Become familiar with what skills and passions are needed when making career decisions in STEM areas.

ACTIVITY TIME

- Two or three 50 minute class periods.

TARGET GRADE

- Adaptable for 6th through 12th grade.

MATERIAL LIST

- Computers with Internet access.
- Paper and Pencils.

KEY VOCABULARY

- Visit Link for List.

ONLINE RESOURCES

- Visit Link for List.

CORE STANDARDS

- Visit Link for List.

ACTIVITY

1. Learn about possible STEM careers by completing the online activities found at: http://ionfuture.org/

2. STEM is everywhere - discover the STEM careers in your life - The goal of the game is to find all the STEM careers before the time runs out.

3. STEM career matchmaker -Find your perfect STEM career- To find the STEM careers that are the best match for you, click on the icons below that best represent who you are and what's important for you in choosing a career.

4. STEM Career Quest: Following the path to becoming a STEM professional. Play your way to different STEM related careers. You start out in 7th grade with a specific STEM career as your target. As you finish middle school, high school, college or whatever comes next, you get a chance to learn about the skills and passions needed to make the career decisions necessary. (Examples of possible careers: 3-D animator, Actuary, Aerospace Engineer, Agricultural Engineer, Archeologist, Architect, etc.)

LESSON PLAN 14: POSSIBLE STEM CAREERS IN THE FUTURE

LESSON OBJECTIVES

- Use Internet resources to research careers.
- Design their own career based on 21st century needs.
- Create slideshow about STEM carers of the future.

ACTIVITY TIME

- Two or three 50 minute class periods.

TARGET GRADE

- Adaptable for 6th through 12th grade.

MATERIAL LIST

- Computers with Internet access.
- Paper and Pencils.

KEY VOCABULARY

- Visit Link for List.

ONLINE RESOURCES

- Visit Link for List.

CORE STANDARDS

- Visit Link for List.

ACTIVITY

Pick any of the following activities after watching the videos of your choice.

1. Watch one of the following videos showing some of the dream jobs in the world. Discuss with students why they think these jobs are considered "dream jobs". Which of the jobs is something they would enjoy doing and why?

    a. **Top 10 Dream Jobs In the World (just show pictures, no captioning needed):** We take a look at 10 of the Dream Jobs in the World! This is a countdown of the 10 most dream jobs in the world.

    b. **5 Dream Jobs You Wish You Had**: Do you sit around and watch movies on Netflix all day? You could be getting paid for that! Check out this video for a list of all the dream jobs you wish you had.

    c. Popular Science slideshow called 10 Best Jobs of the Future.

Jobs may be scarce today, but if current trends hold, pretty soon there will be plenty of fun, well-paying jobs. If you have the vision to start prepping now, you could be flying starships, reading minds, or manning a fusion reactor. Talk about each job as you go through the slideshow. Have students brainstorm and list on the white board, the needs that these jobs will meet in the future, and keep the list visible for students during their project.

2. Students will use Internet resources to research one of these careers, or design their own career based upon 21st century needs identified in the slideshow.

3. Students will create an individual slide and description based on his or her selected career to create a slideshow about STEM careers of the future.

4. Guide students to understand that a large percentage of 21st century jobs have not yet been invented. Ask students how researchers might have come up with these job titles and descriptions. How do they know we will one

day need animal migration engineers, mind-reading technologists, or galactic architects? Discuss with the students how jobs are created out of identified needs throughout the world.

5. Ask students if they would be interested in pioneering the field for any of the careers they just learned about. Have them to turn and talk with a partner, and then write down one career from the *10 best jobs of the future* slideshow. You may want to give students the option of creating their own future job and job title related to the needs researchers tell us we'll encounter later in the 21st century. Refer students to the list created by the class during the slideshow.

6. Ask students what school subjects they think they would need to do well at in order to one day be involved in these careers of the future. Guide students to see the connection to STEM subjects: science, technology, engineering, and math.