K-12	**Safe Passwords** by Marsha Greenwood-Logsdon

Learner Analysis:

General Characteristics:

Ages:	• Students are 10 and 11 years old
Education and Ability Levels:	• 11 year old is hard of hearing and working at a 4th to 5th grade level • 10 year old is deaf and working at a 2nd to 3rd grade level
Behavior Considerations:	• Easily frustrated with new vocabulary and language situations
Previous Experience with the Topic:	• Students have no experience with information security • Students have no experience with or knowledge of, common computer vocabulary
Attitude Toward Content:	• Students enjoy using visual technology • Students have no awareness of need for information security • Students have no awareness of possible results to lack of information security
Attitude Toward Teacher:	• The Students have a strong rapport with the teacher

Entry Competencies:
Prior to the start of instruction, the learners will be able to:
    a) Demonstrate knowledge of needed computer vocabulary
    b) Complete the procedures involved with general computer use
        1. Start up/shut down
        2. Launch the internet browser
        3. Save a file

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Learning Styles:

Successful Instructional Strategies:

- Teach needed vocabulary before beginning lesson
- Hands-on activities increase conceptual understanding and maintain interest
- Keep lesson as visual as possible
- Performance-based assessment helps to provide sense of ownership and pride in their work
- Activities that focus on personal experiences create a sense of relevancy instruction should be given in small steps with simple language constructions

Instructional Strategies to Avoid:

- Lectures of any kind
- Problem solving strategies that are predominately language based
- Activities that require sustained attention for more than 10 minutes

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Objectives

Pre-teaching Objectives:

1. The students will demonstrate knowledge of needed computer vocabulary by identifying vocabulary words with 90% accuracy.

2. The students will demonstrate the ability to complete general computer procedures by correctly completing:

    a. Start up/shut down

    b. Launch the internet browser

    c. Save a file

Lesson Plan Objectives

1. Students will demonstrate understanding of the need for home security and computer security by naming possible outcomes of lack of security.

2. Students will be able to compare home security and information security through the use of a Venn diagram.

3. Students will be able to identify the potential risks associated with poor password selection and protection.

4. During an in-class activity, the students will demonstrate the ability to compose secure passwords that incorporate suggested guidelines.

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Learning Process:

Preview the Materials:
- The teacher will preview all materials prior to instruction. This includes: Science Weekly, Vol. 17, No. 3.
- Handout: Five Steps to Becoming an Information Security Expert
- PowerPoint Presentations on Passwords

Prepare the Materials:
- The teacher will make an outline of the lesson plan. Each day, sections of the outline will be written on the board as an "Agenda" for the students.
- The teacher will modify for length and language, Step One (only) of the Five Steps and print out the desired number of copies.
- The teacher will prepare the PowerPoint Presentation on passwords.
- The teacher will review the study guide for Science Weekly—Codes.

Prepare the Environment:
- Student's tables are to be arranged in a semi-circle to the board.
- When needed, the overhead projector needs to be placed so that all students can easily see the screen.
- The teacher will ensure that there are adequate numbers of dry erase markers, colored markers and crayons for all students.
- The teacher will ensure that all other materials are gathered and ready for use.

Prepare the Learners:
- The teachers will provide a short written agenda for the students to be displayed on the white board or chalkboard.
- The teacher will tell the students what the lesson is about before it begins.
- The teacher will provide the students with individual copies of all handouts.
- The teacher will summarize what was taught at the end of the presentation.

Provide the Learning Experience:

1. Write the word 'security' on the board. Discuss with students what this word means. Use similar words and analogies, 'lock' and 'keep safe'. (5 min.)
2. Create a web on the board. Write the word 'home' in the middle. Brainstorm ways in which we keep a home safe and write these on the web. (10 min.)
3. On chalkboard, make a list of the important things for which we use a computer. Be prepared to give examples. (5 min.)
4. Discuss how we can put 'locks' on our information just as we can use locks at home. Draw a lock on each important information item in number 3 to reinforce. (3 min.)
5. Draw a picture of a home and a computer on each side of a diagram on poster board. Have the students discuss what could happen if 'locks' were not used at home. List these under the home. Have students discuss what could happen if 'locks' were not used on computer information. List these under the computer. In the middle, list similarities. (10 min.)
6. Discuss the meaning of the word 'password'. Help the students associate it with the term 'secret code'. (3 min.)
7. Use Science Weekly, Vol. 17, No. 3, Secret Codes. Select an appropriate reading and language level. Follow the teacher's guide to complete tasks. (This activity may need a break in the middle). (20 min.)
8. Using 1 small, easy to pop lock and 1 large, strong lock, discuss with students how some passwords are easy to open while others are not. Give an example of each, then give students opportunity to give examples. (5 min.)
9. As a group, read the modified Step One of the handout: Five Steps to Becoming and Information Security Expert. (10 min.)
10. Through a PowerPoint Presentation, identify the 10 main guidelines to use when selecting a smart password. (15 min.)
11. As a group, create a bulletin board entitled. "Ways to Pick Smart Passwords and Keep Them Safe". (20-30 min.)
12. Have each student pick a favorite storybook character. Have them create a password based on the 10 recommended guidelines. (10 min.)

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Participation Checklist:

Objective #	Activity	Learner Participation
1	Write the word 'security' on the board. Discuss with the students what this means. Use similar words and analogies: 'lock', and 'keep safe'. (5 min.)	Requires learner input through discussion.
1	Create a web on the board. Write the word 'home' in the middle. Brainstorm ways in which we keep a home safe and write these on the web. (10 min.)	Requires learner participation in-group brainstorming activity.
1	On the chalkboard, make a list of the important things for which we use a computer. Be prepared to give examples. (5 min.)	Requires learner input to make a list.
1	Discuss how we can put 'locks' on our information just as we can use locks at home. Draw a lock on each important information item in number 3 to reinforce.	Requires learner active listening and activity.
2	Draw a picture of a home and a computer on each side of a diagram on poster board. Have students discuss what could happen if locks were not used at home. List these under the home. Have the students discuss what could happen to the computer if locks were not used. List these under the computer. In the middle, list similarities. (10 min.)	Requires learner input to make lists and to find similarities.
3	Discuss the meaning of the word 'password'. Help the students associate it with the term 'secret code'. (3 min.)	Requires active listening techniques.
3	Use Science Weekly, Vol. 17, No. 3, Secret Codes. Follow the teacher's guide to complete tasks. (This activity may need a break in the middle). (20 min.)	Requires learner to individually complete related tasks that show comprehension.
4	Using a small, easy to pop lock and 1 large, strong lock, discuss with the students how some passwords are easy to open while others are very difficult. (5 min.)	Requires learner participation in-group discussion.

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4	As a group, read the modified Step One of the handout: Five Steps to Becoming an Informational Security Expert. (10 min.)	Requires learner to read aloud specified sections.
4	Through a PowerPoint Presentation, identify 10 main guidelines to use when selecting a smart password. (15 min.)	Requires active listening techniques.
4	As a group, create a bulletin board entitled, "Ways to Pick Smart Passwords and Keep Them Safe". (20-30 min.)	Requires active participation.
5	Have each child pick a favorite storybook character. Have them create a password. (10 min.)	Requires active participation.