

Unit 5

Amateur Radio Operations

Lesson #5.1

Prepared By Sharon Carter, KG4HKO
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Lesson Title Operating Procedures

Curriculum Areas Oral Communication & Technology

Duration 2 to 3 class periods

Content Standards OC-3, OC-4, OC-5
T-1, T-3

Benchmarks OC-3.1, OC-4.1, OC-4.2, OC-5.1
T-1.1, T-3.1

Goals

- Develop student awareness of communication conventions and standards
- Develop student use of clear and concise language
- Develop student attitude, courtesy and respect in communications

Objectives

- Students will demonstrate effective verbal communications using a wireless device
- Students will demonstrate effective use of the phonetic alphabet
- Students will demonstrate understanding of the conventions and standards used in Amateur Radio communication
- Students will calculate UTC time for different time zones

Resource Materials

Operating Manual, Chapters 7,8,9 & 10

Instructional Content

Repeater Operation

Making Contact

Joining a QSO

Calling Another Station

Courtesy

Emergency

Simplex Operation

Autopatch Operation

Single Sideband Operation

Making Contact

What Do You Say?

Worldwide Communication

UTC Time

Operating CW

Exchanging Signal Reports

CW Operating Tips

Suggested Activities

1. Set up a class net using FRS radios
2. Set up a spelling bee using the phonetic alphabet
3. Have the students give their name and place of birth using the phonetic alphabet
4. Have the students write a Radiogram and read it over FRS so other students can copy the message.
5. Activity Sheet #5.1 Communication Practice
6. Activity Sheet #5.2 UTC Practice

Unit 5
Activity Sheet #5.1
Communication Practice
Teachers Guide
Robert Lah, KD5HAW

Introduction:

Have you ever received a phone call from someone who didn't speak clearly? Did you have them repeat something because you couldn't understand them? Now put yourself in an emergency situation, where people's lives are at risk. Perhaps you can see how important it is to be understood when communicating, whether by phone or over the radio.

Before police and firemen go out on their own in the field, they are required to take classes in the rules and regulations governing the use of these radios. They are also required to practice operating so they will be prepared to communicate clearly and efficiently when required to do so. Why practice? Do you know what you sound like to others? Often when we first hear a recording of our own voice, we are shocked at what we sound like. It takes time and practice to become proficient radio communicators. This activity will give you an opportunity to communicate with others and test your skills.

Materials:

FRS radio set
Paper and pencil

Procedure:

1. Assign a system for call signs within the class. This can be as simple as using the first letters of the name of the school, with a number 1,2,3 or perhaps the number for the call area your school is located, and the students initials. Example: Carol English at Fred Johnson Middle School in Inglewood CA would be – FJ6CE. Each student should have their own individual call sign all starting with the letters of the school and the same number – FJ6BJ, FJ6CR & FJ6EK and so on. Everyone should practice saying their call sign using the phonetic alphabet until they become comfortable.
2. Have each student fill out a personal interest card. This should be one to two paragraphs long, listing things like their favorite food, color, music group or other such information. It should also include their full name (always an attention getter) and call sign.

3. Separate the students into pairs, with one person from each pair in separate rooms (these rooms do not have to be close together, but make sure all students are supervised by a teacher).
4. The first student reads his/her personal interest card into the FRS radio. Emphasize the importance of clarity of voice and pronunciation of words.
5. The partner will copy the information on the back of her/his card. Emphasize the importance of focusing and listening (it is important to have quiet when the students are speaking on the radio. Background noise can be distracting for both students involved).

Example:

Name: Carol English

Call Sign FJ6CE

My name is Carol English. I'm in the 7th grade at Fred Johnson Middle School in Englewood California. My favorite food is veggie pizza. My favorite color is bright red and my favorite music group is Melvin and the Mudpuppies. I have all three of their CD's. I think I like math the best of all my classes. I play soccer and basketball at school and last year I joined the band. I like going to the mall with my friends and watching TV.

The challenge is for student #1 to speak clearly and for student #2 to focus and listen. This activity can be fun and can help break down students' feelings of self-consciousness.

Unit 5
Activity Sheet #5.1
Communication Practice
Student worksheet

Introduction:

Have you ever received a phone call from someone who didn't speak clearly? Did you have them repeat something because you couldn't understand them? Now put yourself in an emergency situation, where people's lives are at risk. Perhaps you can see how important it is to be understood when communicating, whether by phone or over the radio.

Before police and firemen go out on their own in the field, they are required to take classes in the rules and regulations governing the use of these radios. They are also required to practice operating so they will be prepared to communicate clearly and efficiently when required to do so. Why practice? Do you know what you sound like to others? Often when we first hear a recording of our own voice, we are shocked at what we sound like. It takes time and practice to become proficient radio communicators. This activity will give you an opportunity to communicate with others and test your skills.

Materials:

FRS radio set
Paper and pencil

Procedure:

6. Make up your own call sign. This can be as simple as using the first letters of the name of the school, with a number 1,2,3 or perhaps the number for the call area your school is located, and the student's initials. Example: Carol English at Fred Johnson Middle School in Inglewood CA would be – FJ6CE. Each student should have their own individual call sign all starting with the letters of the school and the same number – FJ6BJ, FJ6CR & FJ6EK and so on. Now practice saying your call sign using the phonetic alphabet until you become comfortable saying it.
7. Now fill out a personal interest card. This should be one or two paragraphs long, listing things like your favorite food, color, music group or other such information. It should also include your full name (always an attention getter) and call sign.

8. Choose a partner. One of you stay in the classroom while your partner goes to a second location, directed by the teacher. (these rooms do not have to be close together, but all students must be supervised by a teacher).
9. The first student reads his/her personal interest card into the FRS radio. It is very important to speak clearly and pronounce your words slowly.
10. The partner will copy the information on the back of her/his card. It is very important to focus and listen. (It is important to have quiet when the students are speaking on the radio. Background noise can be distracting for the person speaking and especially the person listening).

Example:

Name: Carol English

Call Sign FJ6CE

My name is Carol English. I'm in the 7th grade at Fred Johnson Middle School in Englewood California. My favorite food is veggie pizza. My favorite color is bright red and my favorite music group is Melvin and the Mudpuppies. I have all three of their CD's. I think I like math the best of all my classes. I play soccer and basketball at school and last year I joined the band. I like going to the mall with my friends and watching TV.

Unit 5

Amateur Radio Operations

Lesson #5.2

Prepared By Sharon Carter, KG4HKO
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Lesson Title Emergency Operations

Curriculum Areas Oral Communications
Technology
Social Studies

Duration 2 to 3 class periods

Content Standards OC-3, T-1, T- 4, T-5, SS-1

Benchmarks OC-3.1, T-1.1, T- 4.1, T-5.1, T-5.2

Goals

- Develop the student understanding of the applications of wireless communications for public service
- Develop student understanding of different emergency agencies and their roles
- Develop the recreational and educational use of wireless communications

Objectives

- Students list examples of use of wireless communications in emergency situations
- Students identify public service opportunities for wireless communications in the local community
- Students identify the role played by ARES and RACES in emergency communications

Resource Materials

ARRL Operating Manual, Chapters 7,8 &10

Now You're Talking

Instructional Content

Emergency Operation

Emergency and disaster communications

Distress calling

Tactical Communications

Health-and-Welfare Traffic

ARES

RACES

Contacting the International Space Station

Suggested Activities

1. Using FRS radios, have students act as “relay stations” between two other students in different rooms (or otherwise acoustically separated).
2. Play back recorded communication sound bites of various types of communications and see which student can correctly identify the type of communication first.
3. Satellite Delay Relay at: <http://sln.fi.edu/tfi/activity/space/sp-6.html>
4. Show the video *Last Voice from Kuwait*.
5. Write a brief example of a net check-in, including proper language and procedures.
6. Write a dialog of one ham station contacting another, giving proper procedures and information.
7. Use FRS radio to simulate a small emergency communication scenario (There must be frequent announcements “on air” explaining this is an “EMERGENCY SIMULATION” to avoid any misunderstanding). Example: Student is injured on the playfield and communications with the office are needed. Students make up call signs from school letters a number and student initials.
8. Students write questions they would like to ask the astronauts on the ISS.
9. Show ARRL video, *The New World of Amateur Radio*.