Unit 1  
Introduction to Wireless Communication  
Lesson 1.2

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Lesson Title  Introduction to Wireless Communication

Curriculum Area(s)  
Technology  
Social Studies

Grade(s)  6 – 8  
Duration  2 class periods

Content Standard(s)  T-1, T-2, T-3  
SS-1

Benchmark(s)  T-1.1, T-2.1, T-3.1  
SS-1.1

Goals  
• Develop the students understanding of the variety of wireless communication systems in use today and how they are used.

Objectives  
• To identify which organizations use wireless communications.  
• To identify the different types of modes of wireless technology used today.

Resource Materials  
Now You’re Talking  
Operating Your Amateur Station  
ARRL Operating Manual  
ARRL 200 Meters and Down

Content  
Who Uses Wireless Technology?  
Commercial Radio & TV  
Public Safety Agencies & Organizations  
Military  
Government  
Marine Radio Service  
Amateur Radio Service  
Citizen Band Radio  
Family Radio Service

What are the Different Types and Modes of Wireless Technology?  
AM Radio  
FM Radio  
Single-sideband Radio
CW (Morse Code)
RTTY
Packet Radio
Citizens Band Radio
Television
Paging Systems
Cell Phone Systems
Radio Astronomy
Satellite Communication
Wireless Internet
Software Defined Radio

**Suggested Activities**

1. Phonetic Alphabet Activity – Activity Sheet #1.2.
2. The teacher/ham volunteer demonstrate (as much as possible) examples of each of the above mentioned modes and equipment.
3. Students research to find what local organizations (fire, police, government, telephone co.), use radio for communications. What mode of communication is used?
4. Students research ARRL Club Search Web site (www.arrl.org) to find a local Amateur Radio Club contact person, to locate a local ham using Internet Remote Base radio. Students coordinate a demonstration of Internet Remote Base radio for the class.
5. Students research to find the location of at least three Cell Phone Base Stations in your area. What is the total area of coverage in square miles, for: 1) One cell, 2) All three cells.
6. Using a GPS system, determine the exact location of the classroom. Map out the GPS location of the perimeter of the school
7. Develop a Communication Career List – Pick five careers in communications and write a short paragraph describing roles and responsibilities for each career. What kind of training is required for these careers?
Activity Sheet #1.2
Communication Practice
The Phonetic Alphabet

Student Worksheet

Introduction:
Have you ever tried to talk with your mouth full of food? Did you have to repeat yourself? Why? Most likely it was because others could not understand what you were saying. The ability to speak clearly is very important when trying to communicate with others, especially when using a telephone or radio. In an emergency, for example, speaking clearly could mean the difference between life and death. If you were injured and a friend called 911 for you, would you want them to speak clearly so the operator could understand them? You get the picture?

Often during emergencies there are several things going on at the same time. People from several different agencies may be working at the site at the same time (Fire Dept., Police, News People etc.). Communicating clearly may be difficult so these organizations use what is called the “Phonetic Alphabet” to be understood, in less than ideal conditions. The phonetic alphabet is nothing more than a series of easily recognizable words to represent letters of the alphabet.

Sidebar
A = Alfa  G = Golf  M = Mike  S = Sierra  Y = Yankee
B = Bravo  H = Hotel  N = November  T = Tango  Z = Zulu
C = Charlie  I = India  O = Oscar  U = Uniform
D = Delta  J – Juliet  P = Papa  V = Victor
E = Echo  K = Kilo  Q = Quebec  W = Whiskey
F = Foxtrot  L – Lima  R = Romeo  X = X-ray

Materials
FRS radio set
Paper and pencil

Procedure
Write your name down the left margin of a sheet of paper (see example). Write in the correct phonetic word next to each letter along side the letter. Now practice saying the phonetic word for each letter.
Example:
J = Juliet
O = Oscar
H = Hotel
N = November
Activity Sheet #1.2
Communication Practice
The Phonetic Alphabet

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yourself? Why? Most likely it was because others could not understand what you were saying.
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when using a telephone or radio. In an emergency, for example, speaking clearly could mean the
difference between life and death. If you were injured and a friend called 911 for you, would you
want them to speak clearly so the operator could understand them? You get the picture?

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Materials
FRS radio set
Paper and pencil

Procedure
Have the students write their name down the left margin of a sheet of paper (see
example). Instruct them to write in the correct phonetic word next to each letter along side the
letter. Then have them practice saying the phonetic word for each letter.
Example:
J = Juliet
O = Oscar
H = Hotel
N = November
Other examples: School name, name of the city, name of the county or state. Now practice using
the phonetic alphabet

One suggestion is to have a “Spelling Bee” using the phonetic alphabet.