

RADIO FREQUENCIES

Objectives

- Help prepare the scout to fulfill the following merit badge requirements:
 - 3.a. Draw a chart of the electromagnetic spectrum covering 100 kHz to 1000 MHz.
 - 3.b. Label the MF, HF, VHF, UHF and microwave portions of the spectrum on your chart.
 - 3.c. Locate on your chart at least eight radio services, such as AM and FM commercial broadcast, citizens band (CB), television, amateur radio (at least four ham bands), and police.

Reference Materials

- Handouts: None
- Merit badge pamphlet pages: 16-19.
- Icom band chart.
- 11 X 17 paper for the scouts to use to draw their frequency charts.
- 8.5 X 11 blank paper for scouts to use.
- 20-ft rope and meter measuring stick

Suggested Activities

- Review the handout.
- Review the frequency chart on page 17 of the pamphlet
- Show and explain the Icom band chart.
- Have one scout hold one end of the rope and another scout move the other end slow then fast to create waves (if you have a slick floor, this can be done horizontally on the floor and the movement stopped so the scouts can see the waves and how they might be measured). Discuss frequencies, waves and wave lengths referring to meter stick and to the fact that radio signals travel at 300,000,000 meters per second.
- Go over Hz, KHz, MHz and GHz (this is on the middle of page 16 of the pamphlet).
- Provide the scout with a large piece of paper and ask them to prepare their frequency chart (requirements 3.a, 3.b and 3.c). They can use the reference material while doing this.

Verifying Scouts Have Met the Merit Badge Requirements

- Meet with each scout individually so they can present to you the information required to fulfill each of the above merit badge requirements.
- Sign the scout's record sheet in the spaces provided to indicate scout has fulfilled those requirements.
- If the scout is not able to meet any requirement, have them review the handout and referenced pages in the merit badge pamphlet and come back later to complete the requirement. Provide additional one-on-one mentoring if needed.