

HAM Radio as a STEM activity



What is Ham Radio?

There are more than **5 times as many US “hams” today** as there were in the 1950’s. The number of Amateur Radio license holders in the US has gone from 144,000 back in 1955 to over 800,000 in 2017. Predictions that the internet, computers, cell phones and other digital systems would end Amateur Radio were mistaken. Instead, hams have incorporated digital systems into their wireless activities.

Technological Innovation

The Amateur Radio bands are the last remaining place in the radio spectrum where individuals can experiment with wireless communications. Radio amateurs can make, test, and design their own equipment – something you cannot do with your cell phone.

Hands-on Learning

Amateur Radio has been the place where thousands of today’s engineers got their first practical experience in electronics. The Amateur Radio Relay League (ARRL) began its initiatives in STEM education (Science, Technology, Engineering and Math) years before the STEM term was even coined. ARRL is a premier source of wireless electronics information and publications.

We Do That

Using satellites, bouncing signals off meteors and the moon, creating hybrid radio-internet systems that provide Internet capabilities where there is no Internet, voice and digital messaging, television, automatic positional reporting systems, medical inventions for cancer and neurosurgery – all these are part of today’s Amateur Radio activities.

Community Service

Amateur Radio operators are an integral part of every state’s emergency plans, involved with CERT team initiatives, FEMA, DHS, NOAA, ARC, and many local and regional response groups.

Just plain FUN

Radio *amateurs* are not paid. Countless hours and many dollars worth of their own equipment is used in service to their communities and because it simply is fun to do.

The skills needed to use amateur radio as a communication tool are applicable to a variety of technical careers, including engineering, emergency management services, aviation, nanotechnology, telecommunication and electrical trades.

One purpose of this activity is to expose students to STEM in a fun and meaningful way, and hopefully inspire some future scientists, mathematicians and engineers.