Speech

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All around the world, using metal detectors was fun for millions of people to expose valuable remnants buried underground. Bleep, Bleep! Is there another thing more exciting for you than discovering treasure? By exposing guns and knives, military and security services are helping people by working in collaboration with technology.

Metal detection works on the principles of electromagnetism. Exposing metals utilizes advanced technology of electromagnetism. For example, if a magnet is wrapped in a coil around a nail and it is hooked up with a battery, electricity and magnetism would work as they will find the way to reach each other. The science of magnetism is very interesting as it produces electricity and electricity produces magnetism (Schmidt et al., 2019). When there is a changing electric field, the magnetic field would also change. This is how metal detection works.

The science behind metal detectors is very simple. A coil of wire is wrapped around a rounded head of the handle of a metal detector. This coil is termed as a transmitter coil. Through electricity, a magnetic field is produced around it. When we sweep the detector over the ground or a surface, then the magnetic field moves around it which affects the atoms inside it. The interesting phenomenon is that when this magnetic field is produced, it attracts and detects the magnetic field of others. The metal detector has another coil which is called a receiver coil that contains a loudspeaker (Shao, 2019). This beeps when the magnetic field of the detector detects another magnetic or electric field. The buzz of the loudspeaker indicates that you have detected a metal.

Another important point is that metal detectors work best at a maximum depth of 8 to 20 inches (Bhattacharyya, 2017). Any buried metal can be detected through this phenomenon of magnetism and electricity. All types of Bluetooth metal detectors also work on the same principle of electromagnetism.

# References

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