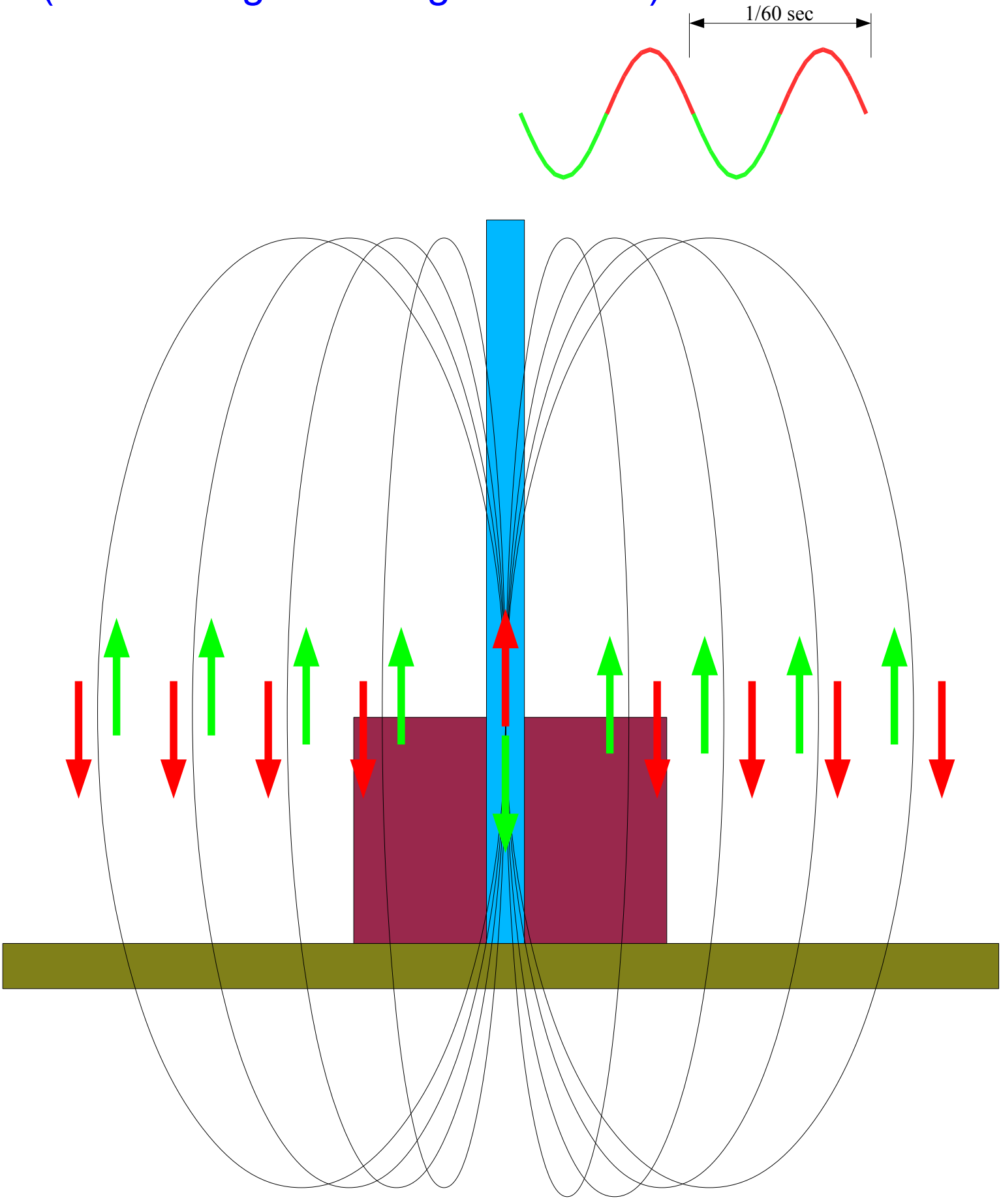
Alternating Magnetic Field Generator (Electromagnetic Ring Launcher):



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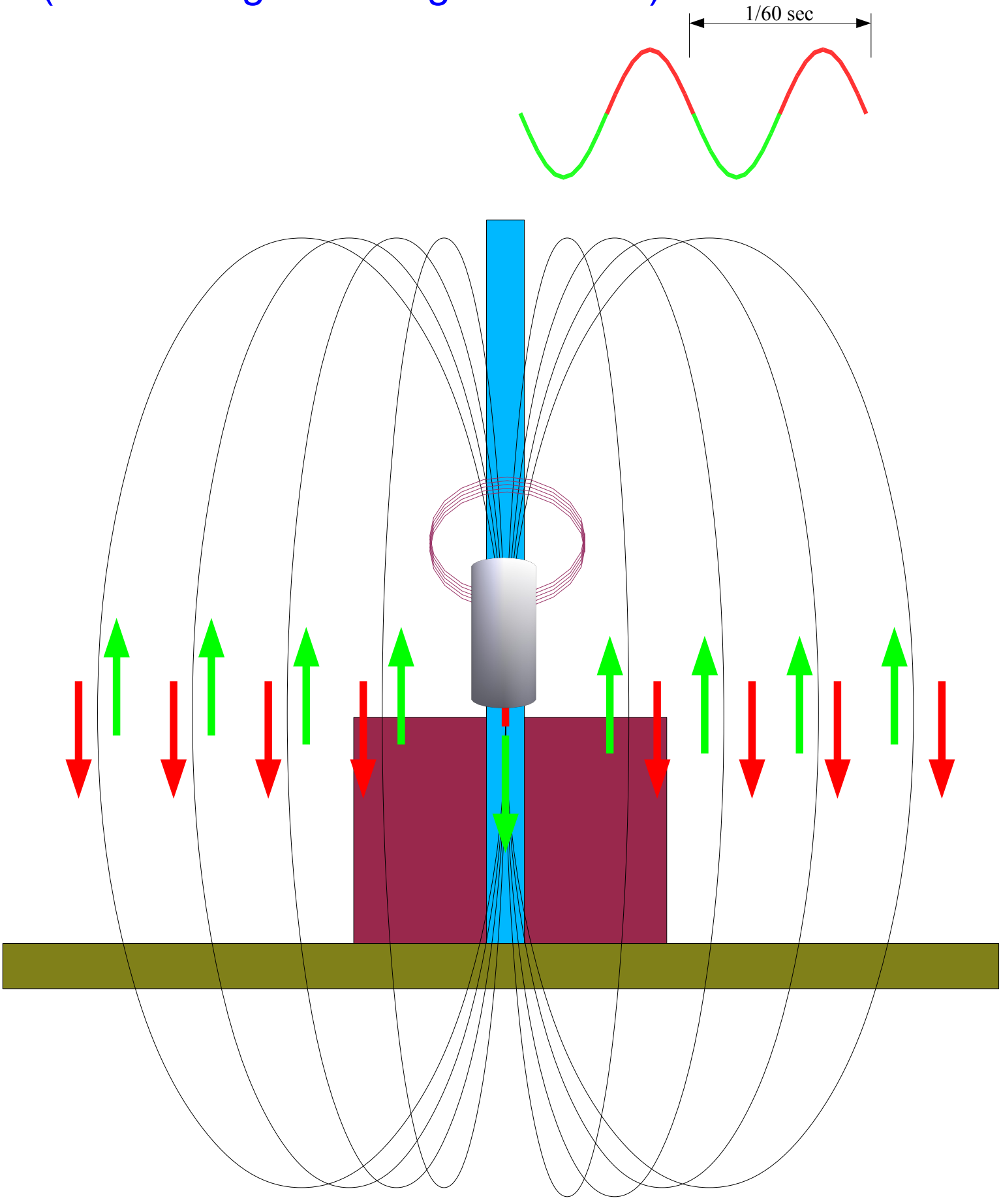
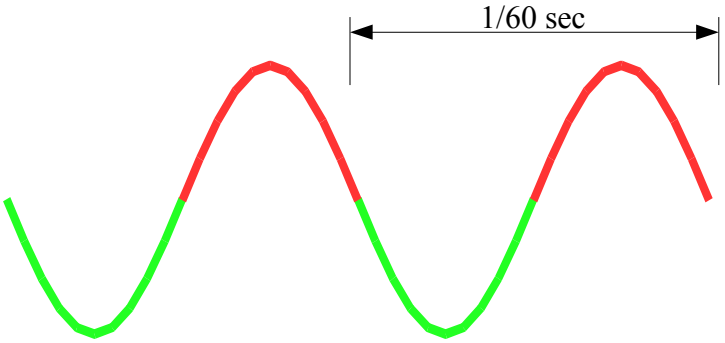


Alternating Magnetic Field Generator (Electromagnetic Ring Launcher):

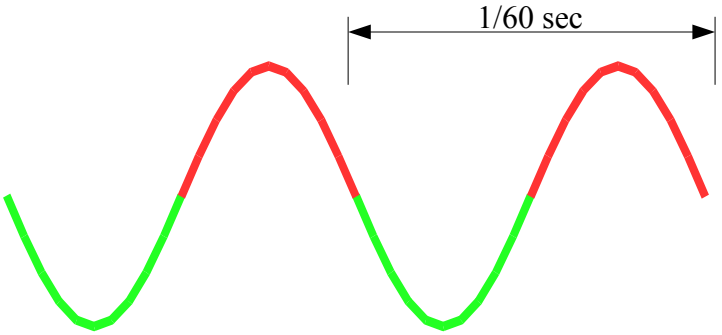
1. Do magnetic fields attract or repel aluminum? Why were you taught otherwise?
2. What could be done to the aluminum tube to make to stop the magnetic field from repelling it?
3. What powers the light?
4. Why does the light get brighter as it is moves toward the coil?
5. What are the two primary colors that make up yellow? Why is this *not* what your art teacher taught you?

It all about *Change*



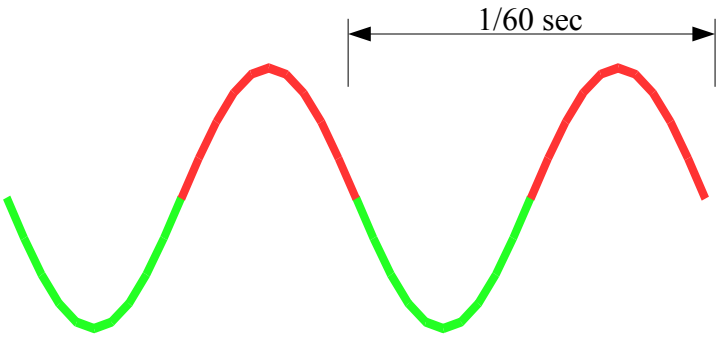
1. The voltage (electromotive force) out of the wall changes alternating between the **green** and the **red** directions.
2. The changing voltage creates a changing current (A flow of electric charge. Think flow of water.) between the **green** and the **red** directions in the coil. I.E., the current moves back and forth
3. The changing current in the coil creates a changing magnetic field that changes between the **green** and **red** directions in and around the rod.
4. Here is where change is really needed. The changing magnetic field creates a changing voltage in anything it touches (including you and me).
5. When a coil is place so that the changing magnetic field runs through it, enough voltage is created in it to force a current through the LED (light).
6. When the current flows in one direction the LED lights **green**.

It all about *Change*



7. When the current flows in the other direction the LED lights **red**.
8. Here is where change is really needed. When the aluminum tube is placed so that the changing magnetic field goes through it, a changing voltage (electrical force) is created.
9. This changing voltage then creates a changing current in the conducting aluminum tube wall.
10. This changing current then creates a changing magnetic field.
11. The direction of this field is such that the the direction of this field toward the coil is always the same as the direction of the magnetic field produced by the coil toward it.
12. Thus magnetic fields of like direction always face one another.
13. As you were taught in 6^{th} grade science, like poles repel.

It all about *Change*



What is **Yellow** made out of?

1. This LED actually has two LED's in it. A **red** and a **green**. No **Yellow**.
2. When the current flows in one direction, the **green** LED lights.
3. When the current flows in the other direction, the **red** LED lights.
4. The LED's never light simultaneously.
5. The eye has memory and averages them together and there is **Yellow**.

Why is this different then taught in art class?

1. In art, you start with white (all colors) and subtract what you don't want.
2. In our example (and TV) you start with black and add what you want.