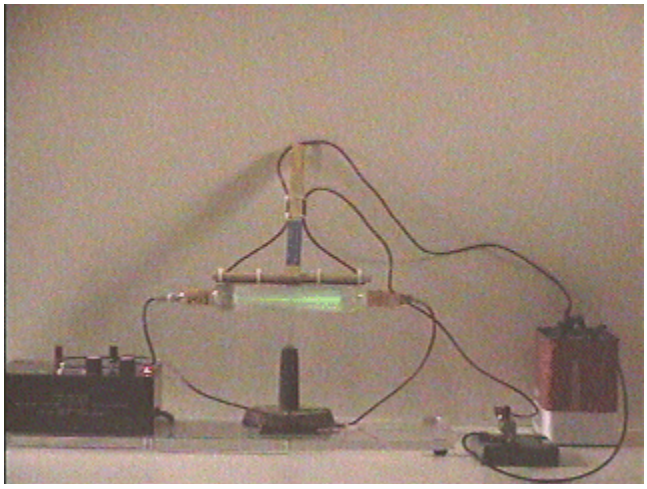
Answer #68

The answer is (b): the electron beam will be deflected downward, as seen in a series of pictures obtained by clicking on the photograph below.



When a *positive* current flows in a wire, if you point your thumb in the direction along which the current is flowing, your fingers will curl along the direction that the magnetic field points (going around in circles around the wire). Using this *right hand rule*, the direction of the magnetic field of the wire at the location of the CRT electron beam is **into** your video screen. Using the *left hand rule*, if you point your fingers in the direction that the electron beam is traveling (left to right, across your video screen) , then curl the fingers toward the direction of the magnetic field (into your monitor screen), your thumb will point in the direction that the electron beam will be deflected - downward.

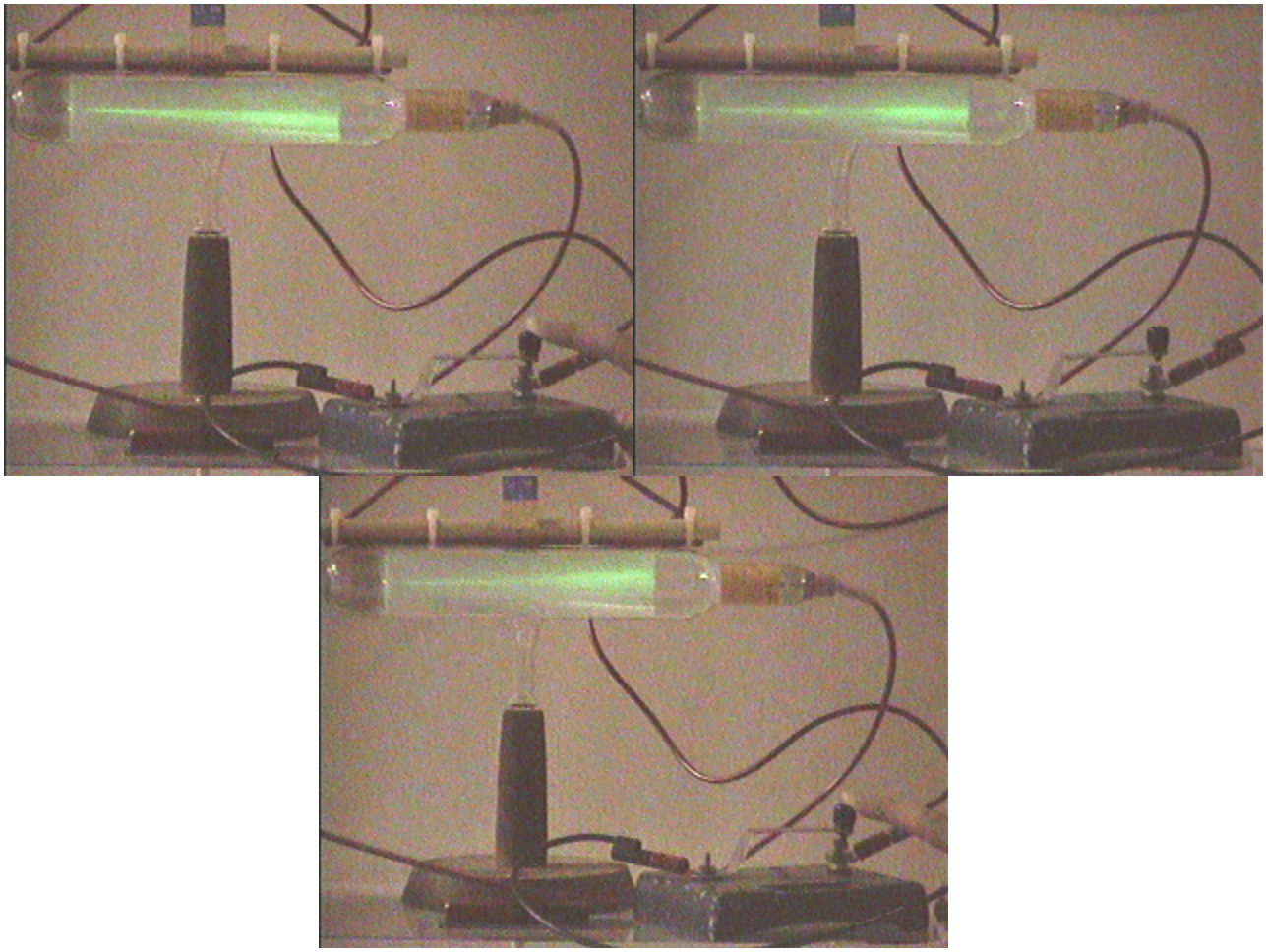
Archive 4

Question of the Week

Outreach Index Page

Lecture-Demonstration Home Page

For questions and comments regarding the *Question of the Week* contact
Dr. Richard E. Berg by e-mail or using phone number or regular mail address
given on the Lecture-Demonstration Home Page.



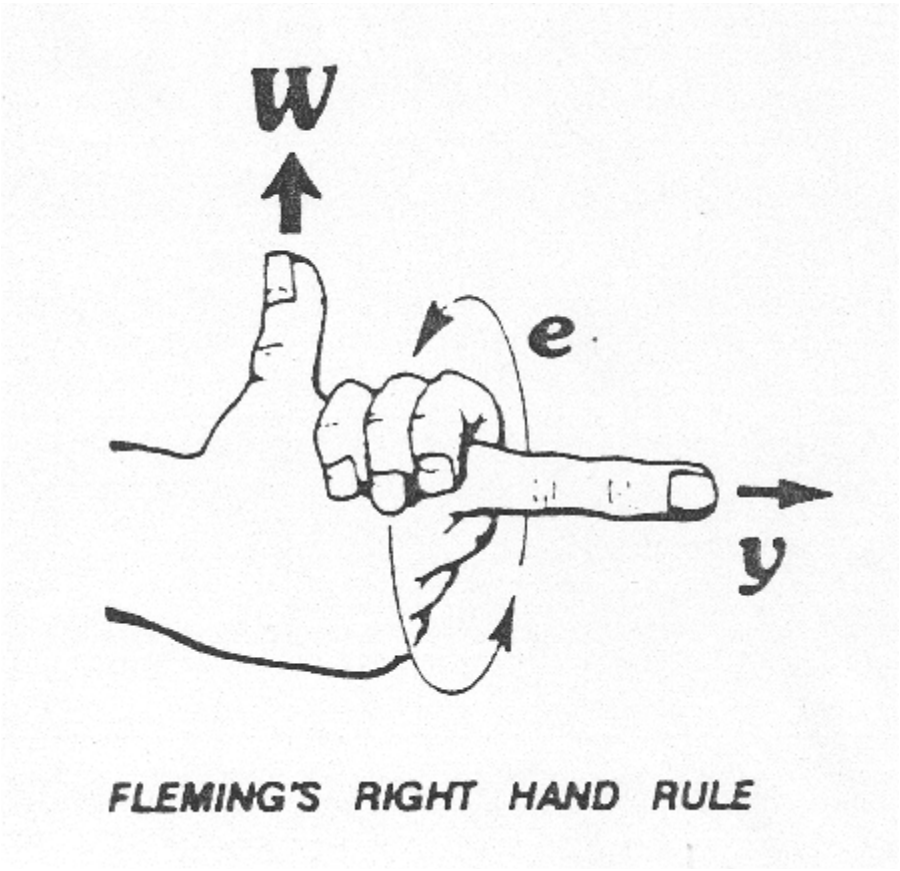
The photographs above show the displacement of the beam when the *positive* current in the wire is running (a) left-to-right, at left above, and (b) right-to-left, at right above. This is a small effect; a picture with no current in the wire is reproduced at the center above for reference. Using the switch to turn the current ON and OFF while watching the beam shows the effect VERY clearly.

Question of the Week

Outreach Index Page

Lecture-Demonstration Home Page

For questions and comments regarding the *Question of the Week* contact Dr. Richard E. Berg by e-mail or using phone number or regular mail address given on the Lecture-Demonstration Home Page.



FLEMING'S RIGHT HAND RULE

THE LEFT-HAND RULE.