ROTD 4/25/06

1) In an externally applied magnetic field, radio frequency E.M. radiation can be absorbed by spinning nuclei, and the spin state will "flip" from low energy (aligned with the field) to high energy (aligned against the field).

2) The strength of the applied magnetic field affects the difference in energy between the spin states. The magnetic field induced by other spinning nuclei (and electrons) can change the "effective" strength of the magnetic field.

3) In short, different nuclei in a molecule will feel different magnetic fields depending upon their environment. This lets us see each different type of nucleus.