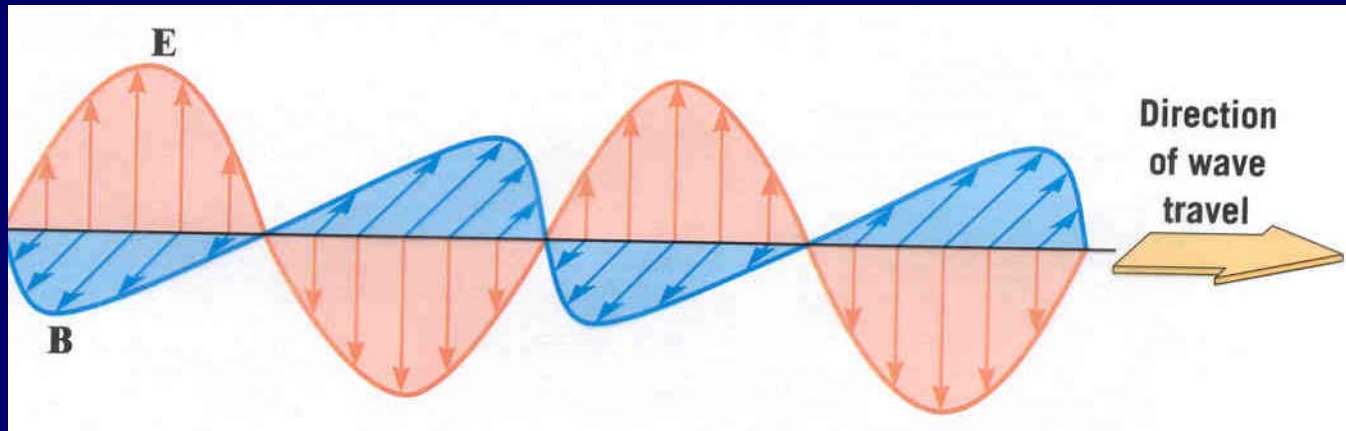


# Electromagnetic Waves



- **Transverse** (vs. sound waves – longitudinal)
- **E perpendicular to B and always in phase**  
E & B increase and decrease at same times
- **Can travel in empty space (sound waves can't!)**
- **Speed of light in vacuum:  $v = c = 3 \times 10^8$  m/s (186,000 miles/second!)**
- **Frequency:  $f = v/\lambda = c/\lambda$     Period:  $T = 1/f$**