Ionizing Radiation Fact Sheet

Facts About Ionizing Radiation
- It cannot be discerned by human senses.
- Radiation and radioactive materials are natural phenomena present in soil, water, food, plants and animals.
- Radiation can be useful. X-rays for broken bones or nuclear medicine scans of heart.
- Radiation can be harmful. The probability of a harmful consequence (cancer) is related directly to how much and where radiation interacts with the body.
- For this reason annual **LIMITS** are placed on the amount of radiation dose for radiation **workers**.

Where Does Radiation Come From?
- Outer space
- Building materials
- Soil
- Water
- Food
- Human Body

Radiation Protection Principles
- Time
  - The less time spent in a radiation area, the lower the total dose due to radiation
  - You personally control the amount of time spent in a radiation field
- Distance
  - Double the distance from a radiation source to reduce the exposure rate by one quarter
  - Most of the radiation used in the laboratories causes little exposure 3 feet from the bench
- Shielding
  - Shielding is not practical if it increases the time to perform an experiment
  - Some materials can cause an increase in radiation exposure

Contamination
- Radioactive contamination on the skin can be washed off like normal dirt
  - Check the area with a survey meter after washing
- Prevention of internal contamination is the primary concern
  - No eating, drinking, using cosmetics (Chapstick®, skin creams) in the laboratory