FUN FACT #5: Heat Transfer

Target age group

- Grade 4 – High School

Some wildfire terminology

- Oxidation: process during which oxygen combines with another substance.
- Combustion: the rapid oxidation of fuel in which heat and flames are usually produced.
- Fuel: any combustible material, especially petroleum-based products and wildland fuels.

Information

- Heat transfer is the movement of heat from one object to another.
- Once the heat source has created fire, the heat must transfer to another fuel in order for the fire to advance or spread.
- This is done by:
  1. **Convection** ➔ heat transfer by circulating *upward*
     a. movement in a gas or a liquid because heated air rises;
     b. a ***very dangerous*** form of heat transfer for wildfires – it dries out the forest fuels and makes combustion occur more quickly and easily;
     c. examples are a boiling teapot or a chimney.

  2. **Radiation** ➔ heat transfer through air in any direction
     a. a ***very dangerous*** form of heat transfer for forest fires;
     b. examples are sun rays or a radiant heater.

3. **Conduction ➔** heat transfer by direct contact or through a conductor
    a. a slower form of heat transfer;
    b. the ***danger*** for forest fires is ***not as great*** with this form of heat transfer;
    c. examples are a frying pan on a campfire (what other type heat transfer is occurring here?)

Activity

- Q1: What are some other examples of heat transfer by convection?
- Q2: What are some other examples of heat transfer by radiation?
- Q3: What are some other examples of heat transfer by conduction?