



A Focus on Middle School Science:

A Phenomenological Approach to Teaching Science in Grades 6-8

Workshop with Gary Banks, February 19-21, 2021

Materials each participant will need:

1. Taper candle
2. Matches or lighter
3. Candle holder base
4. Tea candles, approximately 12 as a minimum, more if available
5. Black paper for candle drawing
6. Blank white drawing paper (printer paper will do)
7. Colored pencils or crayons in several different colors
8. Mirror - could be a wall-mounted mirror, but would be better to have a small freestanding mirror that can be moved around and propped up vertically
9. About 20' of string and a bit of tape
10. Several magnets - these could be simple refrigerator magnets, but somewhat stronger magnets would be better

Optional: The science of electromagnetism will be shown in class. The following materials for making an electromagnet for 8th grade include:

- A. Large steel nail (at least 3" long)
- B. Copper wire - must be coated. This is done either with "magnet wire," which is very thin wire coated with varnish, or other electrical wire covered with plastic insulation. Most science supply closets would have some magnet wire if electric motors have been made.
- C. Two alligator clips of the type used in science experiments
- D. Battery - large 6 volt battery or 9 volt battery would work best
- E. Magnetic directional compass, such as those used for orienteering or science experiments
- F. Small steel objects to pick up, such as paperclips, small nails, or iron filings