

Pictou County Forest School - Grade 5 Lesson Plans
Physical Science: Chemical and Physical Properties

Activity: Fire starting / Charcoal Making (suggested time 90+ minutes)

Overall Curriculum Outcome: Learners will construct effective simple and compound machines.

Specific Curriculum connections:

Physical and chemical properties of matter

- How do chemical and physical properties of a substance compare?
- How can physical and chemical properties be tested?

Physical and chemical changes

- How do physical and chemical changes compare?

Conservation of mass during physical and chemical changes

- How do chemical changes affect mass? Physical changes?

Materials:

- Flint and steel
- Fire making buckets
- Fire starting materials (dryer lint, tinder etc)
- Restaurant pans/lids to act as a kilns for charcoal making
- Water jugs

Instructions:

Fire Starting:

- Brief lesson on fire starting
- Brief discussion on the changes of state that occur when things are burnt
- Allow students to gather fire starting materials
- Allow students to experiment with fire making

Charcoal making:

Beautiful Charcoal <https://www.youtube.com/watch?v=gAO2GV-lagw>

Home Charcoal making <https://www.youtube.com/watch?v=L31iFcyzmJg>

- Briefly explain charcoal making (pyrolysis)
- Show some beautiful examples of finished charcoal (leaves, nuts, bones, sticks)
- Allow students to gather interesting items to place in their kilns to turn into carbon.
- Adults facilitate the safe making of charcoal on the main fire (kids fill kilns, adults place kilns in fire pit)
- Students can take their finished charcoal home and/or experiment with making art

These two activities can run concurrently or consecutively depending on numbers etc.