

HIROSAKI
MINAMI
HIGH
SCHOOL

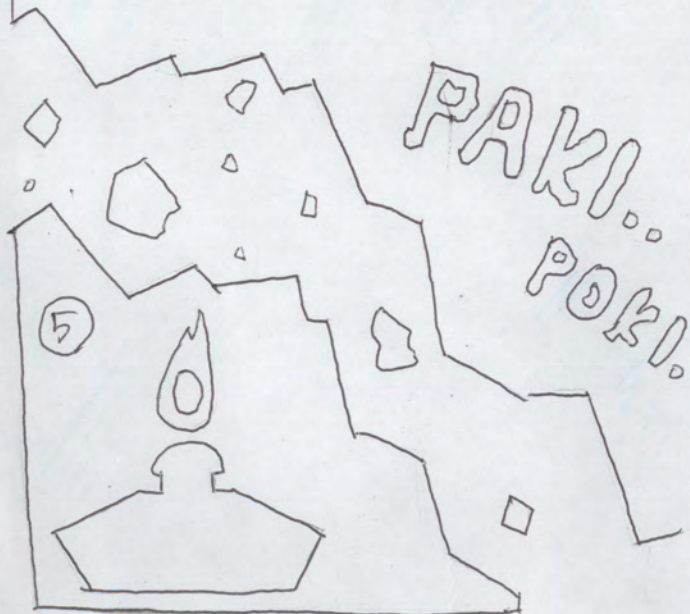
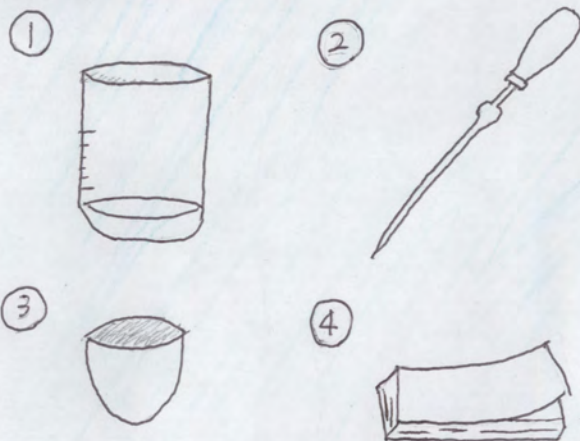
11_{HR}

~5 GROUP~

UNKNOWN FUEL

Used instrument

- ① beaker
- ② pipette
- ③ crucible
- ④ tag
- ⑤ lighter



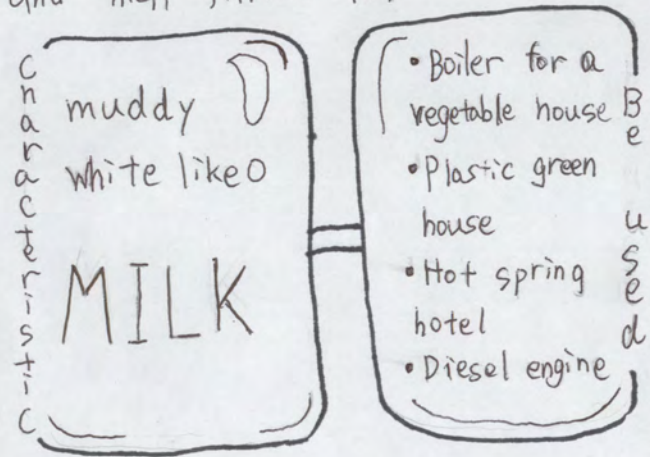
~ Conclusion ~

- ☆ With surfactants, any oil can mix with water.
- ☆ Water mixed with kerosene is easiest to use as fuel.
- ☆ Even when mixing kerosene with water it burned well.
- ☆ We used fire, We are glad that no accident happened.

What is an

Emulsion Fuel?

The emulsion fuel mixes water and a surfactant with oil such as heavy oil and kerosene, waste oil and then stirred it.



Merit

- combustion efficiency improves
- quantity of excessive air decreases

Demerit

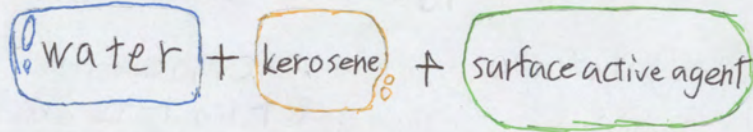
- the ignition point becomes higher
- emulsion fuel is easier to freeze than normal fuel. This is

because water freezes at zero degrees when time passes, emulsion fuel separates.

Purpose

Think of good points and bad points and improve these. We want many people to know about Emulsion fuel. So we try to do these experiments.

Experiment ①



Result ① kerosene: water

3:7 5:5 7:3

Burn Burn Burn

able to light it directly

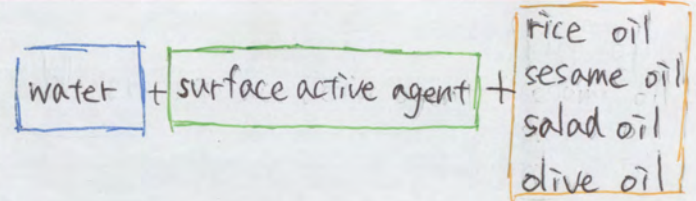
Consideration ①

if we change surfactant for special something it may be able

to make a better fuel.

Experiment ②

We mixed household oil with water and surface active agent.



Result ②

All of liquid were mixed, but then separated.

Dip kitchen paper in mixture

→ This burned weakly.

It is impossible to burn these liquids and create a flame.

Analysis

Water and oil can be mixed, but don't have power as a fuel.