



<b>School:</b>	<b>WAMPEEWO</b>	<b>Date:</b>	<b>08 /AUGUST / 2022</b>
<b>Subject:</b>	<b>CHEMISTRY</b>	<b>Time:</b>	<b>08:00AM – 9:45AM</b>
<b>Teacher:</b>	<b>MUWANGA WILLY</b>	<b>Duration:</b>	<b>1hr 45mins</b>
<b>Class:</b>	<b>S.5</b>	<b>Number of pupils:</b>	<b>Boys: 18</b>
<b>Term:</b>	<b>THREE</b>		<b>Girls: 9</b>

Theme:	<b>EXTRACTION OF ESSENTIAL OILS FROM PLANT LEAVES</b>
Topic:	<b>STEAM DISTILLATION</b>
Competency:	<b>The learner applies the principles of steam distillation and extracts the essential oils from plant leaves.</b>
Learning Outcome(s):	<b>The learner should be able to describe the principles of steam distillation and apply them in extracting essential oils from plants in accordance to “STEAM”.</b>
Generic skill(s):	<b>Critical thinking, Creativity and Innovation, Communication.</b>
Value(s):	<b>Uses of essential oils from different plants, eg eucalyptus, lemon grass, mint, perilla, basil, rose mary, etc</b>
Cross cutting issue(s):	<b>Environmental awareness, Health awareness, Citizenship</b>
Key Learning Outcome(s):	<b>The learners should be able to extract essential oils from plant leaves and use the oils to solve real life problems.</b>

**Pre- Requisite Knowledge:**

Learners already have knowledge of: Simple distillation, separation of immiscible liquids, measurements, use of laboratory equipment, Uses of essential oils and their limitations, heat transfer, simple algebraic skills of addition, subtraction, multiplication and division.

**References:** Physical chemistry by A. Holdernes, Physical chemistry by Heys, Physical chemistry by Peter Atkins



Time per phase <sup>2</sup>	Teacher Activity	Learners' Activity
10 minutes	<b>Roll call of learners and introduces them to the requirements for the extraction of the oil.</b> <b>Divides the class into two groups, one to look for plant leaves from which oils are to be extracted, and the other to mobilize the equipment to be used for the steam distillation</b>	<b>Learners listen attentively and respond present if learner is present or absent if learner is absent.</b>
40 minutes	<b>Instructs learners to move out in their groups and work as instructed</b>	<b>Learners look for leaves and apparatus</b>
40 minutes	<b>Tells learners to set up the apparatus</b>	<b>Learners set up the apparatus and start the extraction process</b>
10 minutes	<b>Tells learners to separate the distillate</b>	<b>Learners separate the oil from the water using a separating funnel and keep the oil in air tight reagent bottles.</b>
5 minutes	<b>Teacher summarises by asking learners to give their experiences from the experiment.</b>	<b>Learners give comments, observations, limitations and summarise the whole process.</b>

**Teacher Self-Assessment:**

The lesson was successfully conducted since the learners had a hands on production of the essential oil from eucalyptus leaves, though the extract was small, i.e, for every 1kg of leaves the oil produced was 5.8g.