# LEARNING AS ONE NATION

*Expanded Project*

## SHS LEARNING ACTIVITY

**Name:** _____ **Score/Mark:** _____

**Grade and Section:** _____ **Date:** _____

**Strand:** ☐ STEM ☐ ABM ☐ HUMSS ☐ ICT (*TVL Track*)

**Subject:** *Physical Science (Chemistry)*

**Type of Activity:** ☑ Concept Notes ☐ Skills: Exercise/Drill ☐ Illustration ☐ Performance Task ☐ Essay/Report ☐ Others: _____

**Activity Title:** **LA15: Key Ingredients in Cosmetic Products**

**Learning Target:** To describe and identify the common key ingredients in cosmetic products.

**Reference:** *(Author, Title, Pages)* (Web) Australian Academy of Science. *The chemistry of cosmetics* | science.org.au

**Cosmetics** are products formulated to cleanse, protect, and alter the appearance of external parts of a person's body. Summarized below are some of the key active ingredients in cosmetic products.

| Key Ingredients | Uses and Examples |
|---|---|
| Water | Used as a solvent to dissolve the other ingredients and used to form emulsions for consistency. |
| Emulsifiers | Used to dissolve both oil-soluble and water-soluble ingredients.<br>**Examples**: polysorbates, laureth-4, potassium cetyl sulfate |
| Preservatives | Added to extend shelf life of cosmetic products and prevent microbial growth.<br>**Examples**: parabens, benzyl alcohol, salicylic acid, $Na_4EDTA$ |
| Thickeners | Work to give cosmetic products an appealing consistency.<br>1) **Lipid thickeners** – solid at room temperature but can be liquified.<br>**Examples**: cetyl alcohol, stearic acid, carnauba wax<br>2) **Naturally-derived thickeners** – absorb water and increase the viscosity of the product.<br>**Examples**: hydroxyethyl cellulose, xantan gum, gelatin<br>3) **Mineral thickeners** – act similar to naturally-derived thickeners but give a different final emulsion.<br>**Examples**: magnesium aluminum silicate, silica, bentonite<br>4) **Synthetic thickeners** – often used in lotion and cream products.<br>**Examples**: carbomer, cetyl palmitate |
| Emollients | Soften the skin by preventing water loss.<br>**Examples**: beeswax, olive oil, coconut oil, zinc oxide, glycerine |
| Coloring agents | Used to accentuate or alter a person's natural coloring.<br>**Examples**: iron oxide, mica flakes, chromium oxide, carmine |
| Glimmer and shine agents | Used to create shimmering effects.<br>**Examples**: muscovite, bismuth oxychloride |
| Fragrances | Mask the unpleasant smell of the resulting product, so that it is more appealing to smell.<br>**Examples**: essential oils, phthalates |