SIMPLY EARTH

HOMESCHOOL

Mango Butter Hand Cream

A Free Lesson from Simply Earth Homeschool



🦉 MASTERY · AGES 12+

THIS BOOK BELONGS TO: _____



a note from Katie

A Note to the Student

Hi Maker,

Today you're making a Mango Butter Hand Cream, not from a kit someone else figured out. You're doing the chemistry.

Five ingredients. One recipe. The result depends entirely on timing, temperature, and what happens when fat molecules trap air.

You'll read the science first, formulate a hypothesis, make the cream, then explain with real terms and real observations exactly what happened and why. That's the loop.

Some lessons carry a marked High School Extension. Attempt them if you're ready — they're optional, not required to finish this lesson.

As always: get a parent's OK before you use the stove or anything hot. That's a kitchen ground rule, not a chemistry one — you'll do the real thinking here.

Katie

SIMPLY EARTH HOMESCHOOL



What Is an Entrepreneur?

🏃 WARM-UP

The Professional Handshake. Before any deal, there's a handshake. Shake hands with everyone in the room: a firm (not crushing) grip, palm to palm, two or three pumps, eye contact, and a smile — then introduce yourself by name. A good handshake tells someone you're confident and trustworthy before you've said a single word about your product.

SUPPLY CHAIN RISK ASSESSMENT — Q4 RAW MATERIALS REVIEW

Before the review — what is an entrepreneur? An entrepreneur is a person who starts a business and takes on the risk of running it (from the French entreprendre, "to undertake"). In the 1730s, economist Richard Cantillon pinned down what that risk is: an entrepreneur buys or makes at a known cost and sells at an uncertain price. Every raw material you commit to below is a cost you pay before a single customer orders — which is exactly why owners assess supply risk first.

This assessment covers six accounts — four raw materials and two proprietary formulas. Risk classes: 1 single-source (comes from one place) · 2 widely grown, low risk · 3 simple processing, no distillation · 4 dependency (relies on a formula or on another product).

RISK CLASS 1 — SINGLE-SOURCE EXPOSURE

Its oil steam-distilled from the seed, nutmeg (*Myristica fragrans*) originally grew only on Indonesia's Banda Islands. Trade competition was so intense that in the 1667 Treaty of Breda, the Dutch famously traded Manhattan to the English just to keep control of one nutmeg-producing island!

RISK CLASS 2 — LOW RISK, HIGH VOLUME

Sweet Orange (*Citrus sinensis*), cold-pressed from the peel — widely grown and simple to extract. Simply Earth sources its orange oil from Italy. Your highest-volume account this month.

RISK CLASS 3 — NO DISTILLATION EXPOSURE

Pressed from South Asian mango kernels, mango butter comes from a fruit cultivated in India for 4,000 years. It pairs with dried, ground North American cranberry seeds, native to Simply Earth's home state of Wisconsin—which produces over half the world’s cranberries and is home to many of the 700+ farm families who own Ocean Spray today!

RISK CLASS 4 — FORMULA DEPENDENCY

Candy Cane Blend (Sweet Orange, Lemon, Spearmint, Frankincense — built for versatility) and Mistletoe Mint Blend (Peppermint, Spearmint, Wintergreen, Cinnamon Leaf, Peru Balsam, Clove, Cassia — built for intensity). The risk is formula consistency, plus, for Mistletoe Mint, regulatory exposure from its restricted 10+ status.

The Disruption Drill

PART A - SUPPLY SNAPSHOT

Assign each supply a Risk Class (1–4) using the classes on page 5.

Supply	Where it comes from	How it's made	Risk Class
Almond Oil	Almond trees — about 80% of the world's almonds grow in California	Pressed from the nut	
Coconut Oil	Coconut palms grown in many tropical countries, like the Philippines, Indonesia, and India	Pressed from dried coconut meat	
Beeswax	Honeybee hives all over the world	Melted and filtered from honeycomb	
Fractionated Coconut Oil	Made from regular coconut oil	Coconut oil is split into parts, and only the part that stays liquid is kept	

PART B — ROLL THE DIE

Roll twice. (No die? Close your eyes and point at the list.) For each roll, circle how your shop responds, then explain why in one sentence.

1 — Drought in California: almond oil prices double.
2 — A typhoon in the Philippines: coconut oil shipments arrive six weeks late.
3 — Your fractionated coconut oil supplier runs out — it's made from coconut oil, and that's delayed too.
4 — A hard winter for honeybees: beeswax now costs 50% more.
5 — A shipping-port strike: every imported supply arrives three weeks late.
6 — Your beeswax supplier is closing for good. You have enough beeswax left for two more batches.

Roll #1: _____ → Switch suppliers / Raise my price / Change my recipe / Wait it out / Stock up. Why? _____
_____

Roll #2: _____ → Switch suppliers / Raise my price / Change my recipe / Wait it out / Stock up. Why? _____
_____

Mango Butter Hand Cream



🏃 WARM-UP

Slogan Speed Round. Make up a three-word slogan for each product you've made so far — the scrub, the bar, and the spray. Example: "Scrub. Rinse. Glow." Then read your favorite out loud like a TV commercial announcer.

ONE SET OF INGREDIENTS, TWO PRODUCTS

This cream uses the same ingredients as Lesson 4's bar — mango butter, coconut oil, beeswax, and almond oil. The only difference is how you finish it. Whipping the partly cooled mixture traps tiny air bubbles inside the fat as it sets. Adding air like this is called aeration. The cream takes up more space and gets lighter for its size — its density, meaning how much weight is packed into a given amount of space, goes down — but its weight and ingredients stay exactly the same. That makes whipping a physical change: a change in how something looks or feels, not in what it's made of. (A fluffy cream like this is sometimes called an emulsion, but a true emulsion blends oil and water. This recipe has no water at all.)

Timing: just like the seeds in Lesson 4, viscosity decides the outcome. Whip while the mixture is still runny, and the air escapes before the fat sets. Whip once it has started to thicken, and the air stays trapped.

Why it matters for your shop: two products from one set of ingredients means more choices for your customers, without buying a single new supply.

⭐ DID YOU KNOW?

In high school, Estée Lauder sold her uncle's skin creams to her classmates — and to prove they worked, she gave them free makeovers. She was finding customers years before she was old enough to start her own company.

What Do You Think?

PART A - THINK IT THROUGH

Why is whipping a physical change instead of a chemical change?

_____

_____

A spoonful of whipped cream and a spoonful of poured cream: which weighs less, and why?

_____

_____

Why was giving free demonstrations such a smart way for Estée Lauder to sell her creams?

_____

_____

PART B - VOCAB POWER

Circle the letter of the correct definition:

1.) **Aeration** means:

A. Removing the air from a mixture so it packs down tight
B. Adding air to something
C. What happens to your brain during a Monday-morning math test

2.) **Density** means:

A. How much space something takes up, no matter how much it weighs
B. The number of group-chat notifications per minute after your aunt discovers emojis
C. How much weight is packed into a given amount of space

3.) a **Physical Change** is:

A. A change in how something looks or feels, but not in what it's made of
B. A change that creates a brand-new substance, like rust forming on a bike chain
C. The glow-up your profile picture gets after three filters

4.) an **Emulsion** is:

A. Any thick, fluffy cream, whether or not it contains water
B. A blend of oil and water
C. The emotional damage of the Wi-Fi going down five minutes before an assignment is due

PART C: FORMULATE A HYPOTHESIS

Using an If/Then/Because format, predict how the whipped cream will look and feel compared to the sample.

If: _____

Then: _____

Because: _____

Mango Butter Hand Cream

MATERIALS



- 1 Tbsp Mango Butter
- 1 Tbsp Coconut Oil (Solid)
- 1 tsp Beeswax
- 1 Tbsp Almond Oil
- 8 drops Candy Cane Essential Oil Blend
- 2oz Jar or Tin + Product Tag
- *Optional*: 5 drops Vitamin E (helps it stay fresh longer)

PROCEDURE

1. Melt mango butter, coconut oil, and beeswax (heat step — parent OK required)
2. Stir in almond oil
3. Cool until the edges turn slightly cloudy
4. Add essential oil (and Vitamin E, if using)
5. Spoon a little into a small dish to compare later, then whip the rest (or pour it smooth)
6. Put it in your jar; tie on a product tag.

Dilution rate: ~0.8% **Kid Safe:** Yes, 2+

Katie's tips: For a softer, lotion-like cream, use ½ tsp beeswax. For a firmer stick, double it. For a spiced citrus version, swap the Candy Cane Blend for 4 drops Sweet Orange + 2 drops Nutmeg.

Test Batch Results

STEP 1 — LOOK · FEEL · SNIFF

LOOK: ◯ White ◯ Cream ◯ Shiny ◯ Fluffy ◯ Smooth

FEEL (rub a pea-sized dab between your fingers): ◯ Light ◯ Rich ◯ Silky ◯ Greasy

SNIFF: ◯ Herbal ◯ Spicy ◯ Citrus ◯ Minty ◯ Sweet ◯ Fresh

STEP 2 — TEST IT LIKE A CUSTOMER

Wash and dry your hands. Scoop a pea-sized dab with a clean, dry spoon, warm it between your palms, and rub it into your hands. Wait 2 minutes.

◯ My hands feel soft ◯ Too greasy ◯ Soaked right in ◯ Too thick ◯ Just right

STEP 3 — MAKE IT YOURS

Circle anything you'd like to try in your next batch:

BUTTER

- Mango butter
- Shea butter
- Cocoa butter

SCENT

- Candy Cane
- Sweet Orange + Nutmeg (4 drops + 2 drops)
- Mix your own from your box: _____

TEXTURE

- Whipped and fluffy
- Poured and smooth
- Softer, like lotion (use ½ tsp beeswax)
- Firmer, like a stick (double the beeswax)

FRESHNESS

- Keep It
- Add Vitamin E so it stays fresh longer

CONTAINER

- Jar
- Tin

My favorite thing about my cream: _____

Analysis: Was your hypothesis from page 26 right? How did the whipped cream compare to the poured sample? Explain in one sentence using the word *aeration.*

Owner's call: Would you sell this batch as-is?
◯ Yes
◯ Not yet, because _____

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Lesson Done!

I am a Confident Maker!

✓ **IN THIS, I CAN...**

- ☐ Explain why whipping is a physical change, not a chemical one
- ☐ Define viscosity and describe how it changed during the process
- ☐ Explain what an emulsion is and whether this cream qualifies
- ☐ Analyze Estée Lauder's sampling strategy and why it worked

SIGNED _____ DATE _____

💪Want more? Ask your grown-up about the Simply Earth Homeschool Recipe Box!!

What's Next?

Did you love making your Mango Butter Hand Cream? There's a whole lot more where that came from!

Ask your grown-up about the **Simply Earth Homeschool Recipe Box** — every month you get a new recipe, new ingredients, and a new lesson just like this one.



TIP

Right now, homeschool families get **50% OFF** their **first Recipe Box**! Every month you get *6 new recipes and the main ingredients* delivered to your door. And if you have ESA funds, the Recipe Box is ESA-eligible in most states. Keep the making going!