Beeswax Lip Balm

**Age group:** This activity is best suited for children ages 10+

**Timeframe:** 20-30 min, plus 20 min for set up

**Nutshell:** Students learn about bee products while making their own balm from beeswax and other natural ingredients

**Supplies:**
- Empty hive box with frames
- Example lip balm for sampling
- Lip balm ingredients (see recipe below)
- Tins or dixie cups for finished balm (bulkapothecary.com has great tins)
- Blank labels for tins (optional), plus markers for drawing designs
- Electric hot plate or solar wax melter
- Double boiler (pot with stainless steel bowl that nests above it), if using electric hot plate
- Stainless steel tablespoon, for stirring and scooping hot lip balm
- Disposable gloves (optional)
- Copies of recipe and instructions or large poster/whiteboard

**Set-up:**
- Organize materials and cover work surface.
- Make sure there is a designated area for students to stand that is separate from the hot plate/melting wax, but ideally close enough that they can see what is going on.
- Set up bee box in a separate area from the wax melting station.
- Set up heating equipment in instructor’s area. Begin heating water before students arrive.

**Activity Description:** Begin by gathering students around an empty hive box. Show them the wax comb and describe how bees make the wax and comb structure. Allow students to touch and smell the comb. Discuss uses of beeswax with students, ending with the lip balm you will be making today – show them a sample. Before allowing students to enter the lip balm making area, discuss behavior expectations: students are expected to follow directions and only touch materials/move around when directed, due to hot wax being melted. Students that cannot follow directions will be directed to a different activity. Once students have entered the lip balm area, introduce each ingredient you will be using in the recipe. Then choose a student to come to the front to add that ingredient. The wax will now need 3-5 minutes to melt. While wax is melting, distribute tins (1 per student, or one per small group). Help students add 1-2 drops of essential oil to their tin. Once wax is melted, assist students in filling tins. Instruct students to watch

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the liquid carefully as it changes to a solid (1-2 minutes). Once cool, cap the tins and have students create labels, if you wish.

Questions and Teachable Moments:

• What kinds of products use beeswax? Refer to “uses of beeswax” sheet.
• Wax making bees must consume about eight times as much honey.
• To secrete wax the temperature in the hive must be within a few degrees of 200°F
• Beeswax has been found in the tombs of Egypt, in wrecked Viking ships, and in Roman ruins.
• Beeswax never goes bad and can be heated and reused.
• What properties of bees wax makes it a good salve (lip balm)?

Tips and Tricks:

• Older students may fill their own tins with the melted lip balm, while instructors may choose to fill tins for younger students to avoid hot wax spills. The final call is left to the discretion of the instructor, based on student behavior and number of student participating.
• A test run of the recipe and heating equipment is a good idea.
• Cover work surface with paper to catch drips of wax.
• Use only an electric heat source (or solar wax melter), as beeswax is flammable.
• For cleaning up wax left on dishes, either use boiling hot water to melt off the majority of the wax, or freeze the dishes and scrape out frozen wax with a spoon. Remove remainder of wax with a steel wool scrubby. It is a good idea to have a bowl/ spoon that are dedicated to beeswax melting, as they do get very messy.
• This activity has relatively high input costs for the ingredients, but the end product makes a great fundraiser if you make extra lip balm!

Beeswax Lip Balm Recipe

1 tablespoon grated beeswax (see steps for rendering beeswax from a hive below)
1 tablespoon virgin coconut oil and/or olive oil
A dash of organic raw honey (1 tsp or less – optional)
2 vitamin e capsules (cut gel cap and squeeze out the liquid)
Several drops of essential oil (1-2 per tin)

Directions

In a double boiler, melt down the beeswax, adding in the coconut oil and honey when about half of the beeswax is no longer solid. After it’s all melted and blended together, stir in the contents of 2 vitamin E capsules. Put essential oil drops directly into tin, then pour in hot wax mixture, carefully. Do not overfill, or cap will not go on properly. Let
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cool. Apply as needed—but not in excess. Resist! There can always be too much of a good thing.

Notes:

• This recipe makes enough lip balm for approximately three ½ oz tins. It is ok to multiply the recipe by any number to get the desired number of tins.
• If you do not measure the wax or honey too exactly, this is ok—the lip balm will still turn out fine, but may be of varying consistency—harder for more wax, etc.
• Grating a block of beeswax can be difficult. Do this in advance, or try cutting into small chunks for students. Any grater you use will likely be permanently covered in wax, so keep that in mind. You can also use small chunks in the recipe, they will just take a few extra minutes to melt.
• If you do not have enough beeswax from your hive, you can supplement with beeswax blocks (or even better, beaded beeswax) from a store.

Rendering Beeswax from a hive

This needs to be done in advance of making your lip balm—at least 24 hours, to allow wax to cool completely.

The best wax to use is lighter in color, such as honey cappings, burr comb, etc. Using old, darkly-colored brood comb is possible, but more difficult. As the bees use the comb, they leave behind casings and other “waste” that will reduce the amount of wax you will be able to retrieve per volume of comb.

There are multiple ways to render wax. Make sure you always use an electric or solar heat source—not an open flame—as wax is highly flammable. Here are some options:

• Use a solar wax melter
• Over a double boiler, heat collected wax in a stainless steel bowl. Set up a temporary filter by cutting the top off of a ½-gallon paper milk container, covered by a double layer of cheese cloth—secure cheese cloth with a rubber band. Slowly pour melted wax into your filter. Let cool 24 hours, then open your box. You should discover a small block of wax floating on top of extra honey! (Honey is edible!) This is good for a small amount of wax—large amounts will gum up the filter.
• Use the same double boiler set up as above, but line the steel bowl with a layer of nylon curtain fabric. Don’t worry—the nylon won’t melt, but the wax will. The wax should slowly melt and seep through the nylon into your bowl. The “gunk” will be left in the nylon. Once all the wax has melted out, pour the liquid wax into a paper milk carton or similar container to cool, as above.
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Beeswax Facts

How do bees make wax?
(Adapted from http://galwaybeekeepers.com/bees-wax/)

- When honey bees are 2-3 weeks old, they develop a special wax-producing gland. This gland converts sugar from the honey into flakes of wax in their abdomen (middle section of the body).
- The small flakes of wax are collected by the other bees and chewed in their mouths. The bees then use these pieces of wax to create the hexagonal-shaped comb. Comb is used for storing honey (honeycomb), pollen, or raising baby bees.
- Bees keep the inside of the hive at a constant temperature which makes the wax easy build with. If the hive gets too hot the wax drips and if it gets too cold it becomes brittle.
- It takes about 6lb of honey for bees to make 1lb of wax.

Benefits of Beeswax

- Beeswax candles burn brighter, hotter, and cleaner than ordinary (paraffin) wax candles. Beeswax burns slower, so candles last longer.
- Can be helpful to people with allergies by “cleaning” the air: Emits negative ions when burned, which help neutralize positively charged ions from dust and other allergens.
- Can help with wound healing: anti-inflammatory and anti-bacterial properties.
- Sweet, unique smell

Uses of Beeswax

- Candles
- Lip balm and other cosmetics (hand cream, eye shadow, moustache/hair wax)
- Coating for cheese or fruits (shiny apples...)
- Gel capsules (vitamins or medicines)
- Natural chewing gums
- Shoe polish – helps waterproof leather shoes
- Archery bow strings
- Surfboard/ski wax
- Beeswax crayons allow more detail in drawing pictures (most are made of soy)
- Musical instruments: coating for tambourines

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