



Herbal Hand Sanitizer



| OBJECTIVE | CATEGORY | DIFFICULTY | Number of People | TIME |
|--|---------------------------|---------------------|------------------|--------------|
| Create an alternative to drugstore hand sanitizer. | Hygiene and health safety | Easy - kid friendly | 1-3 | 1 hr. 15 min |

| MATERIAL LIST | TOOLS & EQUIPMENT |
|---|------------------------------------|
| 1 aloe vera leaf, at least 6" in length OR aloe vera gel, 16 oz. bottle | Blender or mortar and pestle |
| Witch hazel (86% pure), 16 oz. bottle | Small cutting board |
| Lavender and/or tea tree oil, 1 oz. bottle (with dropper) | Knife |
| Vitamin E capsules (400mg), Vitamin C capsule (400 mg) | Tablespoon (for measuring) |
| 2 oz refillable squeeze bottle | Bowl for blended aloe vera gel |
| 1" x 2" adhesive labels | Pens/markers for labeling |
| Optional for scent and additional antibacterial properties: Orange, Grapefruit, Rosemary essential oil, 1 oz. bottle | Electrical hook up/extension cords |
| | Rags for clean up |

| ACTIVITY FLOW |
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| <ol style="list-style-type: none"> 1. Prepare the fresh aloe vera <ol style="list-style-type: none"> a. Cut spines off of side of the leaf b. Peel off top side of leaf c. Using the side of a knife and/or spoon, scrape out the gel and place in the blender d. Blend gel until frothy 2. Add remaining ingredients into blender <ol style="list-style-type: none"> a. 1 tbsp aloe vera gel b. 1 ½ tbsp witch hazel c. 1 vitamin E capsule (pierce using knife and pour liquid into bowl) and crush Vitamin C d. Add 10-15 drops of essential oil of your choice 3. Mix ingredients using blender 4. Decant into a 2 oz. bottle 5. Write ingredients and date of preparation on your label, place sticker on bottle |

| TALKING POINTS/ FUN FACTS | |
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| WHY? | Plain old soap and water are best for cleaning your hands but there are times when that isn't convenient or possible to do. We're making hand sanitizers today with easy-to-find ingredients that are naturally antibacterial, antimicrobial, antifungal, and moisturizing as well. Also, the alcohol (ethyl) in commercial hand sanitizer can be drying to the skin. |
| WITCH HAZEL | Witch hazel is a natural astringent (often used as a facial toner) because it contains tannins. We have a witch hazel tree at Earth Matter that we use to make a tincture. We use vodka to preserve leaves, and branches for tincture. You can alternatively make a decoction (tea) by steeping materials for 20 minutes after the water boils. Use the decoction within 3 days. These preparations are not as potent as the drugstore kind which is steam distilled. The process was perfected by Dr. Thomas Newton Dickinson, Sr. in Connecticut. Generic witch hazel has the same potency/uses. |
| ALOE VERA | Aloe Vera is a succulent and common ornamental houseplant (will not live outside in winter) that is widely cultivated throughout the world. It is native to the southwest Arabian Peninsula. It is used medicinally as it has anti-bacterial, antiviral, and anti-inflammatory properties. It is used to treat fungal diseases, soothe burns, insect bites and other skin irritations. If taken internally, it can soothe canker sores, relieve constipation, colic, and help with digestive health. Anecdotally, my mother and grandmother would treat burns and bites with aloe when I was a child. It made burns not hurt so much and made bites not so itchy. |
| ESSENTIAL OILS | Aromatherapy is the use of organic compounds and oils extracted in plants for therapeutic purposes. The compounds can be taken from the bark, flower, fruit, leaf, seed, or root and made into oils through the process of distillation, which separates the oil and water-based compounds of the plant. The oils are highly concentrated. By concentrating the oils, you separate the most powerful compounds of the plant into one single oil. Oils are made up of small molecules that more readily penetrate your skin. Tea Tree Oil (aka melaleuca oil) (native to Australia) has antiseptic, antibacterial, antifungal, and antimicrobial properties. It has a strong, camphorous, medicinal scent. Lavender Oil has calming properties and it is also helpful in soothing skin irritations. It has a floral scent. It contains antiseptic antibacterial and antimicrobial properties. Citrus Oils (e.g. wild orange, grapefruit) are purifying scents, and support the immune system. |
| VITAMIN E and/or C | Vitamin E - acts as a preservative. It's moisturizing and soothing to the skin. Vitamin E can also help reduce the appearance of scars. Vitamin C - acts as a preservative. It also boosts collagen production, brightens skin, and is full of antioxidants. However, this powder does not mix well with other ingredients. |

| FREQUENTLY ASKED QUESTIONS | ANSWERS |
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| Antiseptic, antifungal, antibacterial, antimicrobial? What is the difference? | Antibiotic = kills or prevents pathogens from growing. Antimicrobial = compounds that kill microbes like bacteria and fungi. Antiseptic = deters bacterial growth (e.g. hydrogen peroxide). Antifungal = counters fungal growth, used to treat fungal infections such as ringworm, athlete's foot, and candida. |
| Can I dilute the recipe? | Yes, you can dilute with water (or lavender hydrosol) to a thinner consistency but remember that potency is diluted as well. This recipe may be good for younger children. |
| Vodka vs. Isopropyl alcohol | You can use ethyl alcohol (vodka) is obtained from the fermentation of grains. Isopropyl alcohol is obtained from chemical processes involving petrochemicals such as propene. Vodka is also 40-50% alcohol by volume as opposed to isopropyl which is about 70% alcohol by volume. Alcohol is a preservative |
| Alternatives to blending my own aloe vera? | You can purchase aloe vera gel at a health food store. Make sure it's pure without any additional ingredients. |
| How long does it last | Best if used up in 1 season (3 months). |