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*ChemMatters* (ISSN 0736-4687) is published four times per year (Oct/Nov, Dec/Jan, Feb/March, and April/May) by the American Chemical Society at 1155 16th St., NW, Washington, DC 20036-4800. Periodicals postage paid at Washington, DC, and additional mailing offices. POSTMASTER: Send address changes to *ChemMatters* Magazine, ACS Office of Society Services, 1155 16th St., NW, Washington, DC 20036.

**Subscriber Information**  
Prices in the United States, Canada, and Mexico: \$16 per subscription. For more information, please contact ACS Member Services, P.O. Box 182426, Columbus, OH 43218-2426; tel.: 1-800-333-9511; fax: 1-614-447-3671. Information is also available online at: [www.acs.org/chemmatters](http://www.acs.org/chemmatters).

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Canadian GST Reg. No. 127571347  
Printed in the USA



# ACTIVITY

By Erica K. Jacobsen

## Sweets to the Sweet

Valentine's Day is prime time for doing something sweet for your sweetheart. Why not celebrate the holiday and make a luscious treat for someone close to you? At the same time, you can share some science knowledge, as you explain how chemistry makes it possible.

Have you ever eaten chocolate Magic Shell® ice cream topping? It has an interesting mix of properties—it is liquid as it comes from the container, solidifies on ice cream, and melts in your mouth as you eat it. The container also warns not to refrigerate the contents.

**Take a look at the recipe below, and make the chemistry connection!** What is the “secret” ingredient that makes the topping work this way? From the recipe, make your prediction, and then whip up a batch and enjoy it with someone special.



### Materials

- Refined coconut oil
- Chocolate chips (Recipe was tested with semi-sweet chocolate, but online recipes show success with dark chocolate, white chocolate, and butterscotch chips. Experiment!)
- Pure vanilla extract (optional)
- Measuring cup
- Spoon
- Pot and stovetop/hotplate, or microwaveable bowl and microwave
- Lidded jar

**Safety:** The results of this activity are meant to be eaten. The activity must be done in a food-safe environment, with clean equipment that has been used exclusively with food, rather than in a traditional chemistry lab.

### Instructions

1. In a pot (if using a stovetop or hotplate) or a microwaveable bowl (if using a microwave), measure 1/2 c. of refined coconut oil and 3/4 c. of chocolate chips.
2. Heat on low heat until the oil and chocolate chips melt completely, stirring frequently.
3. If desired, add a small amount (1/4 tsp. or less) of pure vanilla extract.
4. Pour into a lidded jar for storage in a cupboard. Do not place in the refrigerator.
5. To serve, shake contents. Spoon or pour liquid over ice cream. Wait briefly—what happens to the liquid as it sits on the cold ice cream? What happens to the topping after you spoon it into your mouth?

Which ingredient helps make the properties of this homemade chocolate ice cream topping possible? *Coconut oil!* The melting point of this oil has a range that is around room temperature. In the cupboard, it can remain liquefied. On ice cream, it quickly solidifies to make a tasty shell. In the higher temperature of our mouths, it melts into creamy deliciousness.



Looking for more activities to try? Don't forget the ChemClub Activities pages online. Each month, we highlight the chemistry of a new topic, with links to demos, experiments, videos, and more. Just head to: [www.acs.org/chemclub](http://www.acs.org/chemclub), then click on "Activities."