



## No-Bake Granola Bar

### PUZZLE: CREATE A NO-BAKE HEALTHY GRANOLA BAR

**STANDARDS & CONNECTIONS:** NGSS.3-5-ETSI, NGSS.MS-ETSI

**SUGGESTED MATERIALS:** Wax paper, quick oats, honey, nut butter, seeds, dried fruit, nuts, spices

**BACKGROUND:** Oats are considered a whole grain because they still have their entire grain kernel – the bran, germ, and endosperm.<sup>i</sup> Horses eat oats whole, but most oats you buy at the grocery store have been steamed and flattened to make them easier to for people to eat. Oats are used in a variety of goods including cereals and granola bars. Eating oats and oatmeal can lower our “bad” cholesterol and may help lower our risk of heart disease.<sup>ii</sup>

**1. IDENTIFY:** Share the background information with the students, then share the puzzle to be solved. Determine constraints (e.g., time allotted, space, materials provided, etc.) and divide students into small groups.

**2. IMAGINE:** Ask a series of questions to help students brainstorm solutions to the puzzle. Encourage students to list all ideas – don’t hold back! Before moving on, make sure each group selects a solution that fits within the constraints.

- Ask: *How can you can solve this puzzle? Which of your ideas can you build a prototype for given the constraints?*

**3. DESIGN:** Students diagram the prototype, identify the materials needed to build the prototype, and write out the steps to take. Students describe the expected outcomes.

- Ask: *What steps will you take to create your solution? What do you expect your solution to look like and be able to do?*

**4. CREATE:** Students follow their design plan and build their prototypes. Monitor their progress and remind them about how much time they have.

**5. TEST & IMPROVE:** Students evaluate their creation and compare it with the expected outcomes. Students seek areas of improvement and make changes where needed.

**6. SHARE:** Students share their solution to the puzzle and communicate lessons learned.

- Ask: *What was your biggest takeaway? What would you do differently?*

**ADDITIONAL RESOURCES:** For more background information on this topic, please visit [www.purpleplow.org](http://www.purpleplow.org).



Have a taste test! See which students made the tastiest granola bars. Be sure to check if any of the students have allergies before starting this Puzzler.

<sup>i</sup> U.S. Department of Agriculture. (2018, April 6). *All about the grains group*. Retrieved from <https://www.choosemyplate.gov/grains>

<sup>ii</sup> Whole Grains Council. (n.d.). *Oats - January grain of the month*. Retrieved from <https://wholegrainscouncil.org/whole-grains-101/easy-ways-enjoy-whole-grains/grain-month-calendar/oats-%E2%80%93-january-grain-month>