**Food Science Fridays… The Science of Chocolate Chip Cookies**

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| List one thing that you learned from the science of cookies video clip. |  |
| For each of the following ingredients, describe its purpose in the recipe  2 t soda 1 t salt  2 c flour 2 c chocolate chips  1 c sugar ½ c brown sugar  1 egg ½ c butter  ½ c shortening 1 T vanilla  1 t cream of tartar | |
| Why do you beat the eggs, sugar and butter? What does this process do for the recipe? |  |
| Brown sugar and White sugar are used in this recipe? What type of saccharides are these? |  |
| Looking at the ingredients, do you think that this food is acidic or basic? Use your litmus paper to figure it out for sure? |  |
| Why is baking soda used and not baking powder? |  |
| After examining this food, which of the six nutrient groups does this recipe represent? |  |
| Were the fats in this recipe solid or oils at room temperature? |  |
| Which function of sugar will result in a more delicate crumb in this baked good? |  |
| As sugar content increases in baked goods, browning increases. This is an example of which function of sugar? |  |
| What gives the tender, flaky texture of this? Which fat? Shortening or butter? |  |
| Which ingredient will cause the fat in this recipe to stabilize during processing? |  |
| Which function of lipids causes baked goods to rise during baking? |  |
| What is a way of knowing when your cookies are done without the use of a timer? What is this process called? |  |

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| **Chocolate Chip Cookie Lab and Recipe** |
| For each of the following ingredients, describe its purpose in the recipe  1 t soda ½ t salt  1 c flour 4 oz chocolate chips  ½ c sugar ¼ c brown sugar  ½ egg ¼ c butter  ¼ c shortening 5 mL vanilla  ½ t cream of tartar | |
| Directions:   1. Create an emulsion using sugar, egg, and shortening. Add vanilla. Mix. 2. Mix all dry ingredients, except chocolate chips, in a separate bowl. 3. Add leavening agents and substrate to emulsion. 4. Add sweetener to mixture. 5. Make a walnut sized ball and measure data. 6. Place on parchment paper and baking dish. 7. Bake at 350F for 11 minutes. 8. Take out of oven after Maillard Reaction. 9. Measure additional data. 10. Take a bite and enjoy. | |

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