

5E Lesson Plan

Teacher:

Date: 4 day period

Subject / grade level: 3rd grade Science "All Mixed Up"

Book: "Walter the Baker" by Eric Carle: [Click here to buy book](#)

Materials:

- **Checklist (with student names)**

- (3) 12oz bags of semi-sweet chocolate chips
- 2.5 Cups peanut butter
- 2.5 sticks of unsalted butter
- (3) 12 oz boxes of Rice Chex Cereal
- 6 lbs. of powdered sugar
- (5) 1 gallon Ziploc Bags
- 5 Microwave safe bowls
- Microwave
- 5 Spoons
- Observation paper
- Pencil
- Paper plates
- (1) ¼ cup measuring cup
- Quart sized Ziploc bags for day 4
- Note cards
- *** It might help to have quart sized Ziploc bags or styrofoam bowls on hand for measuring out ingredients.

Standards (National and State)

- **MLS Science 3.ETS1.B.1** Generate and compare multiple possible solutions to a problem based on how well each is likely to meet the criteria and constraints of the problem.
- **SS.ELA-Literacy.W.3.8** Recall information from experiences or gather information from print and digital sources; take brief notes on sources and sort evidence into provided categories

Lesson objective(s) and DOK:

- The 3rd grade students will write their own recipe for puppy chow that fits the criteria and constraints given to them in class with 80% accuracy. DOK 2

"I will..."statement/Target statement:

- **I will develop and test a puppy chow recipe to best fit a set of criteria and constraints.**

Essential Question(s):

- How are recipes perfected?
- How can we define "good" puppy chow?
- How can we narrow down which baking strategies will fit our criteria the best?

5E Lesson Plan

- How is a recipe scientific?

Lesson Title:
ALL MIXED UP

ENGAGEMENT

- The teacher will call the students up to the carpet in the front of the room and set expectations by saying “Class, class” and the students will respond with “yes, yes” Then the teacher will say, “Please clear your desks and make your way to the carpet. I expect you to remain at a level zero during the read aloud today.”
- The teacher will activate prior knowledge by asking the students if they have ever read *The Very Hungry Caterpillar*. She will then tell the students that this book is similar to that book because it is written by the same author and the students might notice the same writing style between the two books.
- The teacher will do a read aloud of *Walter the Baker* by Eric Carle
- During the read aloud ask the following questions:
 - Stop reading after Walter uses water instead of milk and ask: “Do you think adding water instead of milk will make a difference in the sweet rolls?”
 - Stop reading after the King says Walter gets one more chance and ask: “What do you think Walter will do to please the king?”
 - Stop reading after Walter tries many different things and ask: “What is it called when someone tries something over and over again until they get it right?”
 - Stop reading after Walter’s wife makes the roll and ask: “Why can asking others for help be beneficial?”
 - After finishing reading the book ask: “Were you expecting it to be a pretzel?”
- Teacher will take roll of the students and gather them to leave for the field trip.
- On the way to the bakery the teacher will set expectations by saying, “While at the museum I expect everyone to be respectful of each other and the museum. We will stay together as a group. Remember this is for a lesson we will be doing over the next few days, so even though I want you to play and have fun, there is a purpose to why we are here.”
- Students take a field trip to the Museum and are directed to play in the Bakery. The teacher will ask them to look at the recipe book and choose a recipe of their choice and create this bakery dish through play.
- The teacher will tell the students to take note of the specifications of the recipe.
- Teacher will make sure that each student gets time in the bakery. The students will be divided into groups of three. Each group will get 15 minutes in the kitchen to work through a recipe.
- After the students have all had a chance to play in the kitchen and make a dessert the teacher will ask the students the following questions. The students will first turn to their neighbor and talk and then the teacher will call on a few students to share what they discussed. This way all the students get a chance to ponder the questions asked.
 - How specific were the instructions in the recipe?
 - What do you think would happen if you put in the wrong amount of an ingredient?
 - How do you think chefs come up with the right mixtures to create these desserts?
 - How can science be applied to these recipes?
- Then the teacher will take roll and the students will head back to the school

EXPLORATION

On day 1: Students will explore the bakery using their imagination and free play while having a checklist on what to look for and/or do. (In groups of three- four)

5E Lesson Plan

- The students checklist will include:
- Look at the different measurement tools used around the bakery. What are they?
- What equipment is used to make coffee?
- How do you identify a bakery item that is for sale?
- Bowls? Measurement cups? Utensils? What do you see around the bakery?
- Are there any uncommon tools in the bakery?
- As a group, they will choose a recipe from the recipe book and make a coffee, and sell it to a customer. Write down the final cost of the sale as well as what they made and how they made it.

Day 2: The students will:

- The students will eat puppy chow. As they are eating puppy chow, they have to consider what makes the puppy chow “good”.
- Questions to consider asking would be:
 - What is the texture of the puppy chow?
 - Define which part of the puppy chow makes it crunchy? soft? messy? etc
 - What are the parts/ingredients of the puppy chow?

The students will then create their own puppy chow recipe on a notecard.

- The recipe card must include steps, ingredients, time, and materials needed.
The students will be encouraged to create a recipe that is similar in taste to the real puppy chow recipe that was in the recipe binder at the Discovery Playhouse.

****See Differentiation as needed****

EXPLANATION -

****Preparation****

1. Instructor should measure out the ingredients for each group:

- Half a bag of chocolate chips each
- ½ cup of peanut butter each
- ½ a stick of butter each
- 5 cups of Rice chex each
- 1 lb of powdered sugar (half of a 2lb bag) each
- 1 gallon Ziploc bag
- 1 spoon
- 1 microwave safe bowl

- Pass out pre-measured materials to students:
 - (See above) As well as a piece of paper to take notes, a pencil, and their recipes.

Content

- *“I’ve passed out your materials for your puppy chow. Please take the next two minutes to look at your materials and make any changes you’d like to your recipes.”*
- After two minutes has passed: *“Okay, your time is up. Please set down all of your materials and give me your full attention. Your group will need to assign a timekeeper, two bakers, and a recorder. Do that now... CLASS CLASS... give me a big thumbs up if you have assigned your roles. Great!”*
- Students will be given the next 20 minutes to make their puppy chow. Remind recorders to take down notes about their process, what works well, what gave them a hard time, and any other comments they make while making their puppy chow. Remind bakers that their final product needs to go in the Ziploc bag.

5E Lesson Plan

★ Walk around and observe the groups' processes. Be careful not to give too much guidance, but encourage students to problem solve.

- Give students a 5 minute warning. For early finishers, instruct them to discuss amongst themselves what they think about their plan. Would they change anything? How could their process be improved next time? Have groups wipe down tables when they are finished.
- *"Your 20 minutes is up. Please place your product in your Ziploc bag and label it with your group's number. Bags need to go to the back table."*
- With the time that is left, discuss as a class what worked for each group and what did not. Allow for discussion and for groups to compare strategies.
- *"We will taste our puppy chow recipes tomorrow in class and determine which process worked the best. Recorders will hold on to the recipes and the group's notes."*

ELABORATION

Taste Testing

- *"I need the recorder to grab their group's notes and recipes. I need one person from each group to come to the back table and pick up paper plates for your group. You need one per person. Once you have your plate, use a pen to write numbers 1-5 spread out on the raised edge of your plate." **Have an example plate***
- When everyone is seated with a labeled plate, call groups back to the back table to receive their puppy chow samples. Measure with the measuring cup. *"Please do not eat your puppy chow until I instruct you to do so."*
 - *"We will taste each group's puppy chow at the same time so that we can write down our observations as a class."* On the whiteboard, create a box for each group. As you taste a group's puppy chow, have the class make observations.
 - ★ *"How well does this puppy chow meet our criteria and constraints?"*
 - After each group has been evaluated, give the puppy chow recipes a score. 1 being the most fitting to the **constraints and criteria**, and 5 being the least fitting.
- Students will develop a more thorough understanding of the concept by seeing each others' recipes side by side and tasting them. Not all puppy chow is created equal. **Trials** are required to find the best **solution**.

Closure

- ★ *"How can we narrow down which recipe and process will fit our needs the best?"*
- ★ *"How are recipes perfected over time?"*
- ★ *"How is a recipe scientific?"*
- *"So recipes are scientific because it can take **trial and error** to improve a recipe and make it fit our needs the best. Can anyone raise their hand and give another example of something that requires multiple trials to improve it? My own example (Pass out note cards while you talk): I have to use trial and error to figure out the fastest way to shop for my groceries. I have figured out that shopping randomly and walking all over the store takes forever. When I shop in one area at a time it doesn't take me as long."*
- *"For your exit ticket today, I want you to write one thing that your group could have done to make your recipe and solution fit the criteria and constraints of our puppy chow better."*
- When students turn in their note card, give them a Ziploc baggie to fill with puppy chow to take home. Instruct them to put the baggie in their backpack to take home.

EVALUATION Days 1-4 Marked with a ★

5E Lesson Plan

- Before the students make their puppy chow a discussion will be held about what the criteria of “perfect” puppy chow is. Teacher will lead the discussion by asking questions such as:
 - Should the puppy chow be sticky?
 - Can the puppy chow be too powdery?
 - What does good puppy chow taste like?
 - All in all, what makes “good” puppy chow?
- Together the class will set the parameters for what makes the best puppy chow and these parameters will be the deciding factor of who wins, as well as the standard when grading their recipes.
- At the end of the lesson the students will write a few sentences on how they could have improved their puppy chow and what they learned throughout the lesson.

Differentiation

- The recipe books that the students will choose their recipe from includes recipes from all around the world and all different cultures.
- Students are provided with prewritten recipes so they do not have to write one or find it on their own for those students who have lower writing abilities. (Product)
- Children with physical disabilities will have access to the bakery because it is on the first level, and is handicap accessible.
- Students/groups that excel and complete the recipe early on day 2 will brainstorm on a piece of paper how they think their puppy chow will turn out: texture, wetness, flavor, etc.

Three Tiers of Vocab

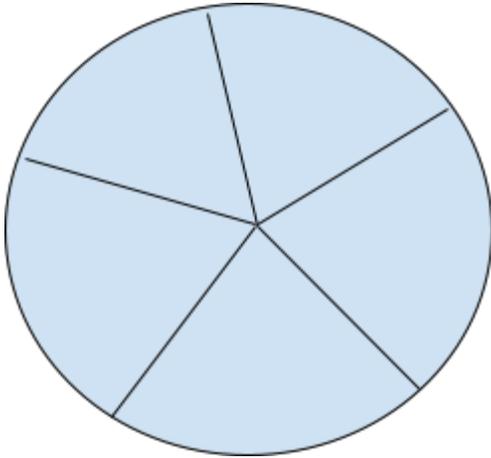
Tier One	Tier Two	Tier Three
<ul style="list-style-type: none"> ● <u>Bake</u>: cook food with heat in an oven ● <u>Coffee</u>: a brewed drink made from coffee beans ● <u>Cook</u>: prepare food, a dish, or a meal by combining and heating the ingredients in various ways ● <u>Refrigerator</u>: An appliance od compartment artificially made cool to store various food items ● <u>Oven</u>: A closed compartment used to cook food with heat ● <u>Apron</u>: A garment worn to cover the front of a person's clothes while cooking ● <u>Bowl</u>: a deep dish used for food or liquid when cooking ● <u>Mix</u>: combining ingredients 	<ul style="list-style-type: none"> ● <u>Recipe</u>: a set of instructions for preparing a particular dish, including a list of the ingredients required. ● <u>Puppy Chow</u>: homemade american candy that consist of chocolate, peanut butter, cereal, and powdered sugar ● <u>Pretzel</u>: a crisp biscuit baked in the form of a knot or stick and flavored with salt. ● <u>Combine</u>: to merge together ingredients for a recipe ● <u>Sprinkle</u>: A small sugar candy that often is put on pastries 	<ul style="list-style-type: none"> ● <u>Espresso</u>: strong black coffee made by forcing steam through ground coffee beans. ● <u>Cold Brew</u>: chilled coffee made from grounds that have been steeped in room-temperature or cold water for several hours. ● <u>Scone</u>: a small unsweetened or lightly sweetened biscuit-like cake made from flour, fat, and milk ● <u>Knead</u>: make bread by working flour and water into a dough

5E Lesson Plan

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Resources:

- <https://joyfoodsunshine.com/puppy-chow-recipe/>
- [Walter the Baker - Eric Carle](#)



Example plate segmentation