## D is for Donut

## A Quality Control Experiment for K-2

## Overview

Primary learners will experience a "taste" of the manufacturing world by creating, filling, and packaging their own playdough donut orders. They will also gain insight and inspiration for their own creations, from the manufacturing processes of NB's own donut experts, Mrs. Dunster's.

## NB Curricular Connections

## K-2 Learning Areas

English Language Arts:

- Strand: Reading - Big Idea: Reading Comprehension - Skill Descriptor: Construct meaning from oral stories, read-alouds, and text.
Mathematics:
- Strand: Number - Big Idea: Number Sense

Explore Your World:

- Strand: Playfulness - Big Idea: Imagination and Creativity - Skill Descriptors: Examine new activities, interests, and possibilities.
- Strand: Playfulness - Big Idea: Exploration and Problem Solving - Skill Descriptors: Invent approaches to practical problems.


## What You'll Need

- Book - D is for Donut (by: Rachel Tiechman)
- PowerPoint Presentation - D is for Donut (see attached)
- Chart paper \& marker
- Playdough (2-3 containers per group)
- Brown paper bags (20)
- Assorted playdough tools: cutters, rollers, cookie cutters, etc.
- Donut Order printable cards (see below)
- Placemats (Optional)


## Instructions

1. Read Aloud - D is for Donut: Before reading, ask: "What is your favorite donut?" and allow learners to share. Write down their responses on chart paper. During reading, encourage learners to read the alphabet letters with you on each page. After reading, have learners think about their favorite donut mentioned in the story and describe it to an elbow partner.

2. Donut Order \#1: Divide learners into small groups of 3-4. Begin with, "Ordinarily, this is our classroom. Right now, however, it is going to transform into a Donut Factory. We are now "manufacturers" of donuts. What would that term mean - manufacturer?" Use slide 2 of the PPT and allow learners to share their thinking. Click again for the definition to appear.

A manufacturer is a person or company that creates lots of goods, by hand or by machine, to sell. (Miriam-Webster, 2024.)

Use slide 3 and instruct: We are going to create, with our hands, donuts for customers wanting to buy our delicious recipe. I am going to give each group a couple of containers of playdough, a donut order, and a brown paper bag. You are to read your donut order, make the donuts, and then bag them for your customer to pick-up. Each donut order tells how many donuts the customer wants. After the supplies and orders have been handed out, get groups to start making and bagging their order.

Once groups have completed their orders, have groups switch their bags with a group to do a quick check - do they have the right number of donuts, do they have the right kind? Return the brown paper bags and have learners consider: Let's think about the size and shapes of our donuts, what do you notice about the donuts that we made? When we buy donuts from a real-life manufacturer, what is the size and shape like?

3. Mrs. Dunster's Manufacturing Process: Using slides $4-10$ of the PPT, take a little tour through New Brunswick's own donut manufacturing experts, Mrs.Dunster's, and see how they create, package, and fill orders of thousands and thousands of donuts each day.

Slide 4-Ordering the Donuts: Lynn ensures that every order is put into the computer system so that it can be made and delivered. She can take orders for a couple of bags or boxes or she may take an order for thousands of donuts!
Slide 5 - Making the Donuts: Big orders need big amounts of ingredients! There is a specific recipe that must be followed and all ingredients are weighed to have just the right amount in the batter.
Slide 6 - Mixing the Donuts: Big mixers make sure the ingredients are well stirred and ready to be put into a "pincher" machine - this machine will pinch out the shape of the donuts being made (crescent, ring, nugget, etc.)

Slide 7 - Frying the Donuts \& Quality Control: The pinched donuts go into a 16 feet fryer to be cooked. Halfway through the journey, the donuts are flipped onto their other side so both sides are cooked. Then, special workers are checking for quality control - this means, they are examining every donut very carefully so that they look the same, they are the same size, and that they are the best as possible for customers. They will pick out donuts that may have gotten a weird shape or cooked too long - these will not go to customers. They may be put into special packages as " 2 nd best" and discounted, or they may be put into the garbage.
Slide 8 - Packing the Donuts: If the donuts need sugar or spices, they conveyer belt leads them through a shaker that will dust all sides of them with what's needed. Then, they are carried to workers who will count the exact amount needed for the packages they are using.
Slide 9-Labeling \& Storing the Donuts: A special machine labels the donuts correctly and then the donuts are stored for shipping.
Slide 10 - Box and Deliver: Workers put the order into boxes and then truck drivers deliver the donuts across Canada! Mrs.Dunster's makes around 13,000 donuts every hour!

Invite learners to point out tools, machines, and processes that allow Mrs.Dunster's to provide excellent donuts. Using slide 10, ask learners: How many different people does it take to make tasty and delicious donuts at Mrs.Dunster's? (Have learners list the different tasks and jobs that they noticed throughout the process. Also have learners think about even more people that we didn't see but are just as important - janitorial and maintenance crew, managers, graphic designers, accountants, etc.)
4. Donut Order \#2: Have learners re-use the same playdough BUT this time adding two elements when creating and filling their donut orders:

- playdough tools (for accurate measuring and size)
- dividing up tasks (who will roll out, who will cookie cutter, who will decorate, and who will inspect for quality control \& then bag)


Pass out NEW donut order cards (see below), brown paper bags, and playdough tools. After the orders are complete, switch bags with a group to ensure the correct quantity and quality. Feel free to repeat if time permits, exchanging donut orders, so learners can experience different tasks.
5. Wrap-Up \& Discussion: Ask learners: Why does Quality Control matter? What is different about the donuts we created with Donut Order \#1 and Donut Order \#2? (Possible responses: the $2^{\text {nd }}$ order: same size, better quality, faster time, better product, etc.) How did it feel to be a manufacturer? What did you learn from today's quality control experiment?

## Extension Ideas

- Using the playdough donuts, review 2D shapes and 3D objects. What different shapes are donuts? Can you come up with a brand-NEW donut shape? Create a donut shape museum and invite another class to examine the playdough donuts that you created.
- Donut Factory Center - keep the donut creation going! Place the playdough and tools in a center and allow learners to create and re-create orders.
- Donut Art - Have learners choose their favorite donut and paint it, using the same background as the cover for D is for Donuts. Display on a bulletin board.
- Have a donut-making PARTY: Try one of the donut recipes in the back of the book. Divide up tasks, like real manufacturers! Surprise some "school customers" with a tasty treat and a kind note of appreciation.
- Reach out to a local baker for a tour - observe how they handle large orders firsthand!
- Purchase a bag or box of donuts - have learners do a full quality control inspection. What do we notice? Are they the same size, shape, quality? (Be sure to taste for quality, too!)


## Reflection Activity

Please see the attached PDF for several choices on how you and your learners can reflect upon today's activity.

## Acknowledgements

1. Miriam-Webster, Manufacturer definition: https://www.merriam-
webster.com/dictionary/manufacture, 2024.

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