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REDG 600

STEM Module Makeover

Cook-A-Doodle-Doo STEM Lesson

Standards:

* Math:
  + 1.3.2.1 Measure the length of an object in terms of multiple copies of another object.
  + 2.1.2.5 Solve real-world and mathematical addition and subtraction problems involving whole numbers with up to 2 digits.
  + 2.3.2.1 Understand the relationship between the size of the unit of measurement and the number of units needed to measure the length of an object.

Essential Question:

* How can we use math to help us when we are cooking/baking?

Content Objectives:

* Students will measure the length of a shortcake using multiple blocks.
* Students will solve the baking problems using addition.
* Students will understand that the block is not the same size of the shortcake and that more than one block is needed to measure the shortcake.

Language Objectives:

* I can measure the length of a shortcake using the blocks.
* I can write my responses in my cookbook.
* I can use addition to help with my estimation.
* I can understand that I will need more than one block to measure the size of the shortcake.

Academic Language:

* Measure
* Recipe
* Ingredients
* Estimate
* Delicious
* Magnificent
* Chef
* Tasty
* Masterpiece
* Strawberry Shortcake
* Mix
* Measuring cup

Assessments:

* Pre-assessment: On Day 1, students will be writing and discussing how math is used in cooking. This will tell us what the kids know about math in cooking as well as the level of knowledge on cooking the students are coming in with.
* Formative:
  + Day 1: Discussion questions with read aloud
  + Day 2: Discussion on estimating; Student work with estimation challenge; Teachers asking students questions while working
  + Day 3: Talking about components of recipes
* Summative: Student cookbook will show work from all 4 days; Students following shortcake recipe/directions/making the shortcake

Accommodations:

* Teachers help with writing, especially for younger students
* Help students open bags of food
* Use of sentence stems for less writing for students
* Break up instruction more
* Use simple language to introduce new concepts or vocabulary, so all students are able to understand

Time filler ideas:

* Recipe Task: students make their own recipe card
* Character: Pick your favorite character from the book and draw them.
* Pass around cooking tools for students to look at and hold
* Explore more with measuring cups
* Estimate how many of different objects will fit into measuring cups

**Day 1**

Materials:

* Pencils
* Colored pencils or markers
* Book: *Cook-A-Doodle-Doo!* By: Janet Stevens
* Chef hats
* Powerpoint with Morning Message
* Aprons

Procedure:

* Introduction:
  + Greeting
    - Student: “Good morning/afternoon, my name is \_\_\_\_\_\_\_. My favorite food is \_\_\_\_\_\_\_.”
    - Everyone: “Good morning/afternoon \_\_\_\_\_\_!”
  + Attendance and pass out shirts
  + Chefs’ Message

Good Morning Gage Chefs,

We are so happy you are here for our Cook-a-Doodle-Doo cooking class!

Have you ever mixed **ingredients** together and followed a **recipe** to cook up something good to eat? What did you have to do to make your cooking turn out to be **delicious** rather than yucky?

Today we will read a funny story about some animals that work together to make a **magnificent** dessert! As we read, think about the silly mistakes they make. Also, think about all the ways they use math to help them cook.

On Thursday, we will cook up our own **tasty masterpiece**!

Sweetly yours,

Miss Schallock and Mr. Gowlland

Master Chefs

* Pre-Reading Discussion:
  + Raise your hand if you have cooked or baked anything before. What was it? How was it? What was the most important thing you did to make your recipe turn out right?
* Pass out cookbooks and pencils
  + Students put name on it
  + Students draw or write response to: When do you think we use math when we cook and bake? **(Independent Learning)**
    - Teachers help with writing; go around to ask kids what their answer is
* Read Story **(Focused Instruction)**
  + Read Aloud/Think Aloud (don’t read margins)
* Post-Reading Discussion **(Focused/Guided Instruction)**
  + Discuss silly parts of story- What were some problems the characters had?
    - Wrong meanings of words that sound the same: flour/flower, stick/stick of butter- Homonyms
    - Cut the butter (pastry blender, not with scissors)
    - Beat the egg (with egg beater or mixer, not with bat)
    - Ruler for flour
    - Fraction of a cup, counting seconds
  + Discuss cooking tools used
  + Discuss pages with math
    - Pg. 12- measure temperature- what do we use? Show oven thermometer and picture of oven setting. Could we set the oven to any temperature when we are making something? What would happen?
    - Pg. 18-19- measuring how much- What do we use to measure flour? What do we want to know- how tall the flour is or how much to add? (how much) What do we use to measure how much? (measuring cup) Show both liquid and dry measuring cups. What if we add too much or too little? (messes up the recipe)
    - Pg. 20- What do we use to measure small amounts? Show teaspoons and tablespoons
    - Pg. 30-31- measure time- What do we use?
    - What did the characters learn in this story? If you mess up, try again; teamwork
* Decorate hats and discuss book/cooking with table members **(Independent/Collaborative Learning)**
* Closing/ Dismissal **(Guided Instruction)**
  + Ask/review how we use math in cooking- measuring, counting and fill out cookbook
  + Clean up/ collect materials

**Day 2**

Procedure:

* Morning Message

Good Morning Excellent Estimators,

Today we will have a fun challenge for you that involves **estimating**! You will be working in teams. Are you up for the Cook-A-Doodle-Doo Challenge?

Tastefully yours,

Miss Schallock and Mr. Gowlland

Master Chefs

* Greeting/Attendance
  + Give the person next to you a fist bump, introduce yourself, and ask what your partner’s favorite dessert is.
  + Model for students
* Discussion **(Guided Instruction)**
  + “We called you ‘excellent estimators’ in today’s message.
    - What does it mean to estimate?
    - What kind of things do you need to think about when you make an estimate?
    - What kind of tools could you use to help you make a good estimate?
    - How will you know if you estimated correctly?”
* Challenge- Find out how many shortcakes fit on the tray
  + Review what estimating means **(Focused Instruction)**
  + Explain challenge to students **(Focused Instruction)**
* Show supply table
* Assign Roles
  + Groups of 3
  + Jobs:
    - Recorder- whiteboard writer- write down estimate and actual number on board
    - Supply Manager- get materials for group (tray, pencils, whiteboard marker,
    - Spokesperson- tells the class what their group findings were
* Students estimate how many shortcakes will cover the tray on their own **(Independent Learning)**
  + Guess how many will fit on the tray before using tools
* Figure out how much shortcake covers the tray with table team **(Collaborative Learning)**
  + Use cubes, paper and pencil, rulers, etc. to help you make a better estimate
  + What tools did you use to help your estimate?
  + How did those tools help you make a better estimate?
* Whole class- find out how many will be on tray
  + Teachers put shortcakes on tray to find out and demonstrate estimating, asking students addition questions **(Guided Instruction)**
* Clean up
  + Put away materials
* Discussion
  + Groups talk about questions before Spokesperson from each group shares with class
    - What was your estimate?
    - How did you estimate?
    - What is similar about each group’s estimate?
* Closing
  + “Tomorrow we will be practicing our measuring skills and practice following a recipe”
* Dismissal

**Day 3**

Procedure:

* Morning Message

Dear Chefs,

Today you will work together in teams to practice **measuring**! What do you know about **measuring**? You will also be creating and following your own **recipe** for Trail Mix! Are you up for the “Cook-a-Doodle-Doo Challenge”?

Tastefully yours,

Miss Schallock and Mr. Gowlland

Master Chefs

* Greeting and Attendance
  + Think about who your favorite character in the book is and why they are your favorite character.
  + Greet someone new:
    - Student 1: Good morning! Who is your favorite character in Cook-a-Doodle-Doo?
    - Student 2: Good morning! My favorite character is \_\_\_\_ because \_\_\_\_\_\_\_. Who is your favorite character?
    - Student 1: My favorite character is \_\_\_\_\_\_ because \_\_\_\_.
* Talk about measuring cups **(Guided Instruction)**
  + What do you notice about the measuring cups?
  + Difference between liquid and dry measuring cups
  + Show different measuring cup sizes
* Look at banana bread recipe
  + What do you notice about the recipe? Think about it and share with a partner **(Collaborative Learning)**
  + Talk more about different components of recipe and why they are important **(Focused Instruction)**
  + Discuss why it’s important to follow a recipe- so your food turns out right **(Guided Instruction)**
  + Some food like trail mix is okay if you do not follow the recipe exactly, but with other food like banana bread/other food you bake it is important to follow the recipe, otherwise it will not be very good
* Make recipe card for trail mix **(Guided Instruction)**
  + Students pick 3 ingredients to have in their trail mix
    - 1 cup cereal
    - 1 bag teddy grahams
    - 1 bag goldfish
    - ½ cup mini marshmallows
    - 1 bag M&Ms
  + Teachers help students with writing recipes
* Make Trail Mix **(Independent Learning)**
  + Students will get ingredients with help of teachers
  + Students measure and put their ingredients into their bowl
  + Mix ingredients
  + Write student names on their bags to take trail mix with them
* Clean up
* Discussion/ Eat trail mix! **(Guided Instruction)**
  + Thumbs up if you were able to follow your recipe, thumbs down if you weren’t
  + Why is it important to follow a recipe?
* Closing
  + We are going to be practicing following another recipe tomorrow when we make our strawberry shortcakes!

**Day 4**

* Morning Message

Dear Chefs,

Today is our final day together. We have one more task to complete before we can make our magnificent strawberry shortcake. We need to find our recipe! We will follow the steps in our new recipe to make our delicious strawberry shortcake!

Are you ready for a great dessert?

Tastefully yours,

Miss Schallock and Mr. Gowlland

Master Chefs

* Greeting
  + Shake hands with the person next to you.
    - What has been your favorite part of Cook-a-Doodle-Doo?
    - What part of the trail mix was your favorite?
* Discussion **(Guided Instruction)**
  + Think back on what dessert the characters made in the story.
  + We are going to make our own personal strawberry shortcake today!
  + What struggles did the characters face in the story?
  + What will we have to do to make sure our dessert turns out well?
* Hand out Strawberry Shortcake Recipe page
  + Materials/Ingredients:
    - 1 paper plate
    - 1 individual shortcake
    - ½ cup whipped cream
    - ⅓ cup strawberries
    - 1 spoon
* Teachers demonstrate how to get materials and measure the whipped cream and strawberries. **(Focused Instruction)**
* Finish recipe page: Use pictures or words to describe **(Guided Instruction)**
  + Emphasize importance of following the directions in order.
    - First: Get plate
    - Then: Get shortcake
    - Next: Get whipped cream
    - Finally: Get strawberries
* Get materials and make shortcakes **(Independent Learning)**
  + Students get materials and follow the recipe
  + Teachers set up two stations to help with measuring
  + Students take shortcake back to their desk to enjoy!
* Master Chef Jr. Strawberry Shortcake Cupcakes on YouTube while students eat
* Clean up
  + Throw all trash in garbage
  + Wipe down desks
* Evaluation/discussion- Connect to how different measuring cups represent different amounts, talk about math in cooking
  + How did you use math when you were cooking? Talk with partner **(Collaborative Learning)**
    - Measuring
    - Counting how many things we needed
    - Estimating
* Closing
  + How were your desserts???
  + Make sure everything is cleaned up
  + Ask students if they had fun and what their favorite part was