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Resource ID#: 39628

Primary Type: Lesson Plan

Pricing The Twelve Days of Christmas

Students will discover how much the items in the classic song, "The Twelve Days of Christmas," would cost in the current year; and then they will update the list for modern times.

General Information

Subject(s): Mathematics

Grade Level(s): 6, 7, 8

Intended Audience: [Educators](#)

Suggested Technology: Basic Calculators

Instructional Time: 2 Hour(s)

Resource supports reading in content area: Yes

Freely Available: Yes

Keywords: christmas, tax, cost, price, decimals

Instructional Component Type(s): [Lesson Plan](#), [Worksheet](#)

Resource Collection: CPALMS Lesson Plan Development Initiative

Attachment

[12DaysBellworkRevised.docx](#)

[12DaysOfChristmasPosterActivitySheetRevised.docx](#)

[12DaysPosterAssignmentRevised.docx](#)

[TwelveDaysOfChristmasActivitySheetRevised.docx](#)

Lesson Content

Lesson Plan Template: General Lesson Plan

Learning Objectives: What should students know and be able to do as a result of this lesson?

The students will be able to solve problems involving multi-step multiplication and addition with decimals; as well as problems involving percents in the form of sales tax.

They will be able to apply these mathematical skills to a real-world situation given to them and then come up with their own interpretation of the situation.

Prior Knowledge: What prior knowledge should students have for this lesson?

How to add numbers with decimals either by hand or with a calculator.

How to multiply numbers with decimals either by hand or with a calculator.

How to add sales tax to items, using percents.

Guiding Questions: What are the guiding questions for this lesson?

INTRODUCTORY QUESTIONS:

1. Let's think of the song "The Twelve Days of Christmas." What are some of the items mentioned in the song? Listen to the song here.
2. That is a lot of gifts to give. Has anyone ever wondered how much it would cost to pay for the items mentioned in the song, "The Twelve Days of Christmas?" Let's

estimate some amounts.

3. Some of these items are not normally purchased by the general public in today's society. Can anyone estimate what they think some of the items would cost today?

GUIDED PRACTICE QUESTIONS:

1. How can we figure out how much the gentleman from the song is spending on gifts for his true love each day?
2. Let's review the amounts before moving on to total cost and tax?
3. After finding the total cost, what is one method that we can use to add tax to the total cost? What is the other method we can use? Find tax and then add to original or add the percent to 100% then multiply
4. Can we use these same methods to find the tax of each item?
5. Now, we have found the tax of each item and adding them together to find a total with tax. Does this amount match the total with tax that we calculated on Question #3? If they do match, what does that mean? If they don't match, why do you think that occurred? Answer: rounding
6. Let's think about the wording of the song. As the song progresses, most of the items are repeated each day. Do we think it was the intent of the song that the items are re-given each day as it is worded in the song? For example, the first day he give a partridge in a pear tree, on the second day he gives 2 turtle doves AND a partridge in a pear tree. Let's recalculate to total cost to include the repeating of the gifts (as worded in the song). Brainstorms some methods that we could use to compute this number.
7. What methods did we come up with to find this new total cost.
8. Now, for the fun part....what would you give your true love? What are some modern items, that you would like to give? How much would you spend? Would it cost more than this version of the song?

Teaching Phase: How will the teacher present the concept or skill to students?

1. The teacher will start with an introductory bellwork. These questions should be reviewed before moving on the main part of the lesson. See 12 Days Bellwork attachment
2. The teacher should start with the "Introductory Questions" and should play a version of the song at some point during the introduction.
3. The teacher should distribute the "12 Days Activity Sheets" to the students and instruct them not to work ahead. The teacher should use the "Guided Practice Questions" at this point. See 12 Days Activity Sheet attachment
4. As the students work through the activity sheet, the teacher should circulate and use the "Guided Practice Questions". It is recommended that the students receive confirmation of their answers with the teacher before moving on to the next part of the activity sheet. The activity sheets can be completed with partner, if so decided by the teacher.
5. The activity sheet should be completely finished and checked for accuracy before moving on to the independent practice (poster assignment).

Guided Practice: What activities or exercises will the students complete with teacher guidance?

The students will complete the 12 Days of Christmas Activity worksheet with the guidance of their teacher.

The teacher should require checkpoints for each question; prior to the students moving on to the next question.

- The teacher should move about the classroom, checking each day's pre-tax and with tax amounts.
- The overall totals (pre-tax, with tax, and combing all of the verses of the song) should be confirmed by the teacher.
- The teacher should discuss with the class the answers to rest of the questions before moving on to the poster assignment.

The teacher should use the guided questions during this process.

The class should have an open discussion about the poster assignment, but the students should complete it independently.

Independent Practice: What activities or exercises will students complete to reinforce the concepts and skills developed in the lesson?

They will fill out the 12 Days Poster Assignment planning sheet to help them plan out what will be transferred onto their poster. See attachment 12 Days Poster Assignment

The students will complete their poster independently or with a partner.

Closure: How will the teacher assist students in organizing the knowledge gained in the lesson?

The poster will be displayed in the classroom, so that the students can compare their 12 Days of Christmas to other students.

The teacher may want to have a vote to see which 12 Days of Christmas Poster the other students like the best.

The Planning Sheet should be discussed and approved by the teacher before the poster is made.

Summative Assessment

The summative assessment will consist of the student completing their poster in the classroom. The teacher may use a rubric to grade the poster.

Formative Assessment

The teacher will use a 5-minute introduction (bellwork) assignment that will be designed to check for operational knowledge. This bellwork will cover multiplying decimals, changing percents to decimals, and finding tax. During the course of the lesson, the teacher will monitor by having checkpoints at different stages of completion.

Feedback to Students

Students will have to present their answers at different checkpoints while completing the worksheet as the teacher walks around the classroom. Each question should be confirmed before moving on to the start the next question on the worksheet.

Accommodations & Recommendations

Accommodations:

1. Lower level students could work in pairs or groups to complete the activities.
2. Students could go to a computer lab or use their phones to look up prices or get inspiration.
3. Students of other religions could create a poster that has to do with their religious beliefs (Example: 8 Days of Hanukkah)
4. Calculators could be omitted to increase the difficulty or time spent working on the assignment. (Or for grade levels that are not permitted to use the calculator)

Extensions:

1. The website [PNC Christmas Gift Maker](#) is fun to explore and a teacher may want to spend time exploring this website with their students.
2. There are lots of articles (USA Today, Huffington Post, etc) that are published before Christmas that talk about the cost of the Twelve Days of Christmas. These could meet a reading for content area standard.
3. The price of the Twelve Days of Christmas changes each year. The website mentioned previously has comparison for the overall total and for each individual item. The class could discuss or write about inflation or other economic reasons why the prices would rise or fall.
4. The students could perform their version of the 12 Days of Christmas. There are also other funny version of the 12 Days of Christmas that can be found on the internet.
5. The website also mentions what this would cost in other countries. More advanced students could use this information to discuss world economies or how money is converted.

Suggested Technology: Basic Calculators

Special Materials Needed:

Poster paper or construction paper, colored pencils or markers, rulers, a copy of the song [The Twelve Days of Christmas](#) and a way to play this song

Further Recommendations:

Each year before completing this activity the teacher should go to the website [PNC Christmas Gift Maker](#) to update the prices. If they choose they could just use the prices given (which are for the year 2012) and call it modern prices instead.

Additional Information/Instructions

By Author/Submitter

MAFS.K12.MP.1.1 – Make sense of problems and persevere in solving them.

MAFS.K12.MP.4.1 - Model with mathematics.

Source and Access Information

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District/Organization of Contributor(s): Bay

Is this Resource freely Available? Yes

Access Privileges: Public

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Aligned Standards

Name	Description
MAFS.7.EE.2.3:	<p>Solve multi-step real-life and mathematical problems posed with positive and negative rational numbers in any form (whole numbers, fractions, and decimals), using tools strategically. Apply properties of operations to calculate with numbers in any form; convert between forms as appropriate; and assess the reasonableness of answers using mental computation and estimation strategies. For example: If a woman making \$25 an hour gets a 10% raise, she will make an additional 1/10 of her salary an hour, or \$2.50, for a new salary of \$27.50. If you want to place a towel bar 9 3/4 inches long in the center of a door that is 27 1/2 inches wide, you will need to place the bar about 9 inches from each edge; this estimate can be used as a check on the exact computation.</p> <div style="border: 1px solid black; padding: 5px;"> <p>Clarifications: Fluency Expectations or Examples of Culminating Standards</p> <p>Students solve multistep problems posed with positive and negative rational numbers in any form (whole numbers, fractions, and decimals), using tools strategically. This work is the culmination of many progressions of learning in arithmetic, problem solving and mathematical practices.</p> <p>Examples of Opportunities for In-Depth Focus</p> <p>This is a major capstone standard for arithmetic and its applications.</p> </div>
MAFS.7.NS.1.3:	<p>Solve real-world and mathematical problems involving the four operations with rational numbers.</p> <div style="border: 1px solid black; padding: 5px;"> <p>Clarifications: Examples of Opportunities for In-Depth Focus</p> <p>When students work toward meeting this standard (which is closely connected to 7.NS.1.1 and 7.NS.1.2), they consolidate their skill and understanding of addition, subtraction, multiplication and division of rational numbers.</p> </div>

