Comforts of Home

5th - 6th Grade
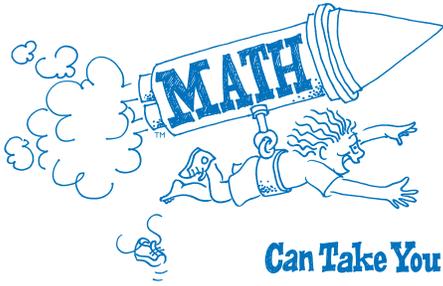
OBJECTIVE

To buy items needed for a camping trip by changing fractional prices to dollars

MATERIALS

- Comforts of Home Items (to be collected: toothbrush, toothpaste, batteries, toilet paper, pillow, comb, magazines, snack food, soda, soap)
- 100 plastic or real pennies per group
- Dry erase marker (one for each group)

Materials for Optional Mini Lesson
- *Math Can Take You Places* DVD, Episode 5: "Time Flies" (Equivalency)
- TV/DVD player

From the *Math Can Take You Places* After School Kit

- Bear Creek Mountain Convenience Store Sign
- Price tags
- Blank price tags
- Comforts of Home Cash Register Sheet (one per group)
- Ten Comforts of Home Playing Mats per group

BEFORE YOU START

- Read through the Optional Mini Lesson located at the end of this activity. Use parts of it or the entire lesson to help the kids understand the concept of fractions before you begin the game.
- Collect all of the Comforts of Home items and 100 pennies for each pair of students if you choose to use the actual coins.
- As you go through the activity, be sure, during the game, to point out fractions that equal the same amount. These are called "equivalent fractions." For example, 1/2 equals 5/10 equals 4/8.

HOW TO START

Say: "Let's pretend our class is on a camping trip to Bear Creek Mountain. While unpacking and setting up camp, we realize that we forgot to pack several items that would make our trip more comfortable. We forgot to bring batteries for our flashlights, CD players, and hand-held video games. Everyone forgot their toothbrush and toothpaste. But, worst of all, there is not a single shred of toilet paper to be found, and nobody brought any. We're going to have to go to the Bear Creek Mountain Convenience Store to buy the items we need. However, there is one problem: all of the price tags are in fractions."

Explain that each team will compete to buy these Comforts of Home items.

STEPS

Step 1

Attach price tags to the Comforts of Home items and place them on a table. Make sure the teams can't see the price tags to prevent groups from working ahead. Hang the Bear Creek Convenience Store sign near the table.

Step 2

Display the first item. For example, the batteries are priced 9/10 of a dollar. Each group will work using their Comforts of Home Playing Mats to figure out the decimal equivalent (or how much they would cost in cents) of the batteries. If the price is 9/10, then the students would lay out ten mats and equally divide the 100 on each mat (10 pennies per mat). Nine of the ten mats/groups would equal $.90. You may want to work this example together as a group before officially starting the game.

Step 3

Each team must work together using the Comforts of Home Playing Mats to find the equivalent decimal in cents. When a group solves the problem, a designated person from the group should write the answer on the window of their Comforts of Home Cash Register and raise it in the air. The first team to figure the correct decimal equivalent in cents buys (wins) the item.

Answer Key:
1/2, 2/4, and 5/10 of a dollar = $.50
3/4 of a dollar = $.75
3/5 and 6/10 of a dollar = $.60
4/5 of a dollar = $.80
1/5 and 2/10 of a dollar = $.20
1/4 and 2/8 of a dollar = $.25

Step 4

Continue play until all of the items have been sold. The group that is able to buy the most items will have the most "comforts of home" and will be the winner.

WRAP UP

Let the kids work on the following Challenge Questions in their groups and write the solutions on their answer sheets.

1. What is 7/10 of a dollar? ($.70)

2. Is 75 cents equal to 12/16 of a dollar? Explain your answer using words. (Yes. 12/16 can be reduced to 3/4. 3/4 of a dollar is $.75.)

3. Eighty cents is what fraction of a dollar? (8/10 reduces to 4/5.)

4. What is 4/4 of a dollar plus 4/5 of a dollar minus 6/8 of a dollar? (4/4 or $1.00 plus 4/5 or $.80 minus 6/8 or $.75 is $1.05)

OPTIONAL ACTIVITIES

- Real-World Application: Discuss and define a budget and its uses. Help the students budget the money they receive on average each month. Use an Excel spreadsheet to display the data. Brainstorm ways to spend their money more wisely.
- Let the kids develop their own fractions to write on the blank Comforts of Home price tags and add their items to the game.
- Create your own snack bar or supply store where the children can shop for items listed in fractions.
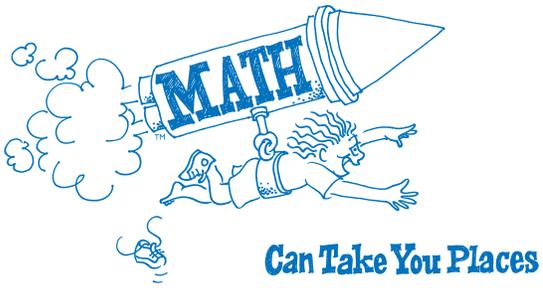
SUGGESTED *MATH CAN TAKE YOU PLACES* CONNECTIONS

From the Math Can Take You Places After School Kit activity "Get on Board" (Patterns)
From the Math Can Take You Places Classroom Materials lesson plan "Get on Board" (Patterns)

LITERATURE CONNECTION

- *Eating Fractions* by Bruce McMillan
- *Gator Pie* by Louise Mathews
- *Only One* by Marc Harshman

Activity Cue Card

- Set up the Bear Creek Mountain Convenience Store: Hang the sign and place the Comforts of Home Items on a table with their price tags attached.

- Offer to sell one item at a time.

- Students can buy the Comforts of Home item if they can calculate the decimal equivalent of the fraction on the price tag.

- Teams will display their answers on the Comforts of Home Cash Register window.

- The first team with the correct answer buys the Comforts of Home item.

- The team with the most Comforts of Home items wins.

Optional Mini Lesson - Converting Fractions to their Decimal Equivalents (20 minutes)

Make sure that each group actually divides the pennies to reinforce the concept of parts of a whole.

Watch the segment of the *Math Can Take You Places* video, Episode 5: "Time Flies" (Equivalency) where Mrs. Garcia and her class write the equations for Central and Eastern time zones. Stop after the students on screen offer the correct solutions to the sample problem. Begin discussing the term "equivalency" and how it means that what's on the left side of the equals sign is the same as what's on the right side.

On a table at the front of the classroom, have four items with their costs indicated as a fraction of a dollar.
pencil - 1/10 of a dollar
mechanical pencil - 1/2 of a dollar
candy bar - 3/5 of a dollar
can of soda - 3/4 of a dollar

Ask students, "Would you know the cost of these four items if fractions were used instead of the dollars and cents signs that you normally see?" Most students will know that the mechanical pencil is worth 50 cents.

Ask one of the students to explain how he/she would describe to someone younger that one half of a dollar is the same as 50 cents. (Depending on that student's explanation, you can solicit another, if needed.) The student should be able to explain that the denominator of the fraction _ determines that the 100 pennies would have to be divided into two equal groups. If a student is unable to clarify this situation, have the students then divide their pennies into two equal groups. How many pennies are in each group? Since the mechanical pencil is worth one out of two groups, the pencil costs 50 cents.

Guided Practice: (make sure each group has 100 pennies)

A. Have the students divide the 100 pennies into ten equal groups. How many pennies are in each group? Since the pencil is 1/10 of a dollar, the pencil must cost ten cents, which is one of the ten groups. How many groups of pennies would be needed to make 50 cents? Reinforce that 5/10 is equivalent to 1/2. Ask the students if they can replace ten pennies with another monetary denomination? (a dime)

B. Now have the students divide the 100 pennies into four equal groups. Ask, "How many pennies are in each group? How many groups does it take to make 50 cents?" Reinforce that 2/4 of a dollar is the same as 1/2 of a dollar. Since the soda's price shows that it is worth three out of the four groups of a dollar, the soda must cost 75 cents. Ask the students if they can replace the 25 pennies with another monetary denomination? (a quarter)

C. Say: "Can you now figure out how much the candy bar would cost if it were marked as 3/5 of a dollar?" Allow groups to work on this problem independently. They should divide the pennies into five groups. The answer would be 60 cents.