

INTERACTIVE BULLETIN BOARDS



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1st Grade Lesson:

Farmyard Patterns

Standards of Learning:

Math: K.16, 1.17, 2.20

English: K.1, 1.1

Materials:

- Farm-related pattern book, such as *Farm Patterns* by Nathan Olson
- Interactive Bulletin Board

Background Knowledge:

Patterns can be created by students using letters, sounds, rhythms, or objects.

Patterns also occur in nature. This lesson

allows students to explore natural patterns and create patterns with farm pictures using an interactive bulletin board.



Procedure:

1. Instructions for the interactive bulletin board:
 - Create a title for the board, such as “Pattern Practice” or “Farmyard Patterns.”
 - Prepare several patterns for the students to finish using agricultural objects: tractors, hoes, apples, corn, tomatoes, pumpkins, hay bales, soy beans, peanuts, chickens, cows, horses, pigs.
2. Explain to students what a pattern is. Provide examples of types of patterns and where they might occur.
3. As a class, practice making patterns by using oral language: red white red white or Y Z Y Z
4. Read the book *Farm Patterns* by Nathan Olson. Help the students find the patterns the book illustrates that can be seen on a farm.
5. Present the students with the beginning of a pattern on the bulletin board. Ask the students what kind of pattern it is (ababab, abcabcabc, aabaacaad, etc). Have one child finish the pattern and explain why they made that choice. Work through the prepared patterns.
6. If time permits, allow several children to create their own patterns with the objects provided.

Extension:

Allow students to make their own patterns using stickers or other art supplies and display them around the room.

2nd Grade Lesson:

Farm Animal Skip Counting

Standards of Learning:

Math: 2.4

Materials:

- Interactive Bulletin Board:
 - Multiple cut outs of a crab
 - Multiple cut outs of a chicken
 - Multiple cut outs of a turkey
 - Hand prints cut out of construction paper (for turkey feathers)
 - Numerals cut out



*Pictures/templates can be downloaded from clipart or created using Die-Cuts.

Background Knowledge:

Skip counting helps students begin a foundation for multiplication. Using agricultural animals to practice skip counting provides examples students can rely on for counting if necessary. Chickens are the top commodity for Virginia farmers and help students practice counting by 2s because of the two legs on the animal. Crabs have 10 appendages, 8 legs and 2 claws, and are a great way for students to practice counting by 10s. These animals are gathered in the Chesapeake Bay. Turkeys are the fourth highest commodity for Virginia farmers, and hand prints can be used to represent their feathers. The hand prints also represent groups of 5 and help students learn their multiples of 5.

Procedure:

1. Set up a bulletin board entitled "Skip Counting."
2. Cut out several crabs, chickens, turkey bodies, and hand prints.
 - a. Write 2, 5, and 10 on a few examples to use as starter for the students.
3. Prepare several turkeys with construction paper. On the belly of some turkey bodies, write a multiple of five, but do not attach the feathers. Provide students with enough hand print feathers (with 5 fingers on each) to match the number on the bodies. For other turkeys, include the feathers and ask the students to determine the multiple of 5.
4. On the bulletin board, post several multiples of 10 and ask the students to put up the correct number of crabs. Also, put up some examples of groups of crabs, and ask the students to determine the multiple of 10 they represent.
5. On the bulletin board, post different examples of multiples of 2. Ask the students how many chickens match the multiple of 2. Post several groups of chickens, and ask the students to explain the multiple of 2 the chickens represent

Extension:

The use of an interactive bulletin board can also be applied to fractions.

3rd Grade Lesson:

Watermelon Fractions

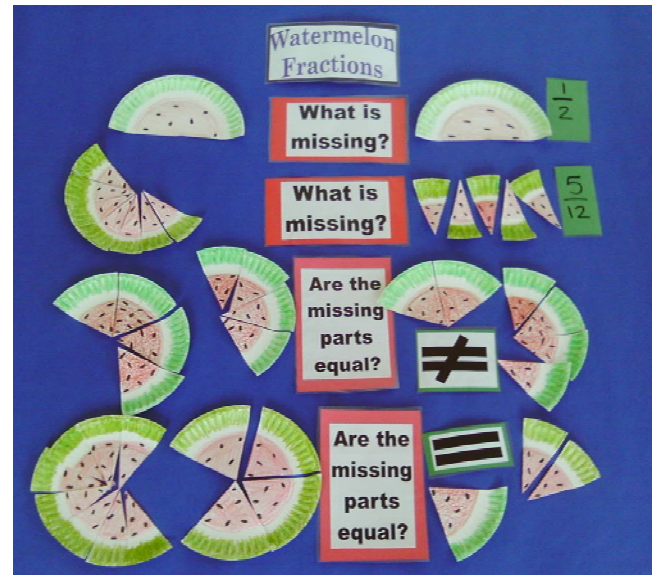
Standards of Learning:

Math: 3.3

Science: 3.8

Materials:

- Interactive Bulletin Board:
 - Paper plates cut into fractions
 - Equals signs
 - “What is missing?” signs
 - “Are the missing parts equal?” signs
- Samples of watermelon

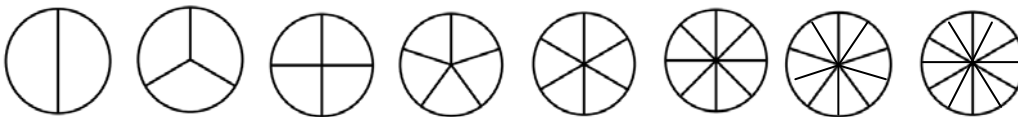


Background Knowledge:

By third grade, students have had prior experiences with fractions. This lesson provides students with the opportunity to compare fractions and determine equivalency. Students can discover equal and non-equal watermelon slices, and how that relates to the missing fraction. Students can also learn about the life cycle of this Virginia-grown fruit. First it starts as a seed, and then sprouts into a leaf. A flower blooms and is pollinated. Then a small watermelon is formed, which grows until ripe.

Procedure:

1. Take several white paper plates and cut them into the following fractions:
 - a. Halves, thirds, fourths, fifths, sixths, eighths, tenths, and twelfths.



2. Color the fractions to make them look like watermelon.
3. Create various scenarios for fractions (allow students to use extra watermelon slices to determine the answers):
 - a. Put up $\frac{1}{2}$ and ask: What is missing?
 - b. Put up $\frac{7}{12}$ and ask: What is missing?
 - c. Put up $\frac{1}{4}$ and ask: What is missing?
 - d. Put up $\frac{4}{6}$ and $\frac{2}{3}$ and ask: Are the missing parts equal?
 - e. Put up $\frac{4}{6}$ and $\frac{4}{8}$ and ask: Are the missing parts equal?
 - f. Put up $\frac{1}{5}$ and $\frac{2}{10}$ and ask: Are the fractions on the board equivalent?

Extension:

Discuss the life cycle of a watermelon. Also, begin asking simple computation questions, such as $\frac{3}{4} + \frac{1}{4} = \underline{\quad}$. Read students *Watermelon Wishes* by Lisa Moser to see illustrations of the life cycle of watermelons incorporated into a heart-warming story.

5th Grade Lesson:

Buzzing with Math Facts

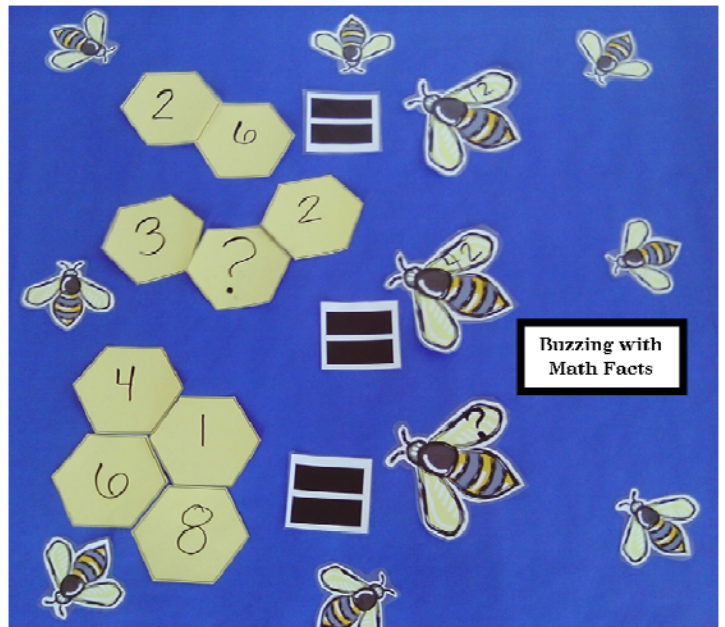
Standards of Learning:

Math: 5.4, 5.18

Science: 5.5

Materials:

- Honeycomb Interactive Bulletin Board Lesson: "Buzzing with Math Facts"
 - Bees
 - Equals signs
 - Honeycombs
- A bee book such as *Hooray for Beekeeping* by Bobbie Kalman or *The Honeybee Man* by Lela Nargi



Background Knowledge:

Bees create hives to store their honey. The combs bees build have six sides, and are shaped like regular hexagons. Honey and pollen are stored in the combs, and the queen bee also lays eggs in them. Farmers use bees for their honey and their pollinating abilities. Fruits and vegetables, such as apples, watermelons, blueberries, and cucumbers, would not grow without the help of bees.

For this activity, honeycombs are used to practice determining factors for a number. By creating rows of combs, students can determine which factors of a multiple are missing. Students will need to determine, out of a few choices, which honeycombs (with numbers on them) belong to a particular bee. There will also be some honeycombs already posted, and the students will have to determine the missing factor multiple.

Procedure:

1. Print hexagons on yellow paper and cut them out.
2. Laminate the hexagons.
3. Set up the bulletin board to practice factors of multiples.
 - a. Depending on what skills need to be practiced, the numbers can range from single, double, or triple digit multiples.
4. Read a bee book to the students and discuss the structure of a bee hive.
5. Explain the bulletin board:
 - a. The bees represent a multiplication fact. The product is written on the wing.
 - b. Each honeycomb represents a factor. For example, 2 and 6 are factors of 12. The

numbers 2 and 6 are written on the honeycomb, and the number 12 is written on the bee. An equals sign (=) illustrates the equality of both sides of the number sentence: $2 \times 6 = 12$ (see the top example in the picture).

- i. Even though there are not multiplication signs on the board, please remind students that the honeycombs are multiplied together to get the number on the bee's wing. If students are still confused, post multiplication symbols on the honeycombs.
 - c. If there is a question mark (?) on a honeycomb or bee, the students must determine the missing number. This introduces children to variables and linear equations. It is up to the students to use their reasoning and multiplication knowledge to determine the factor that is missing.
 - i. Example in picture: $3 \times ? \times 2 = 42$
 $? = 7$
 - d. If there is a ? after the = sign, the product of the multiple is the unknown. In other words, the students must solve the multiplication problem to determine the product.
 - i. $4 \times 6 \times 1 \times 8 = ?$
 $= 192$
 - e. Give students a product and have them determine the multiples.
 - f. Have students make their own equation with 1 variable (1 missing factor).
6. Have students create their own multiplication problem with 3 or more factors.

Extension:

The students can have a friendly competition by splitting the class into groups and asking them to work cooperatively and quickly to see which group can find the correct factors the fastest.