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Common Core Math:

4.NF.B.3.C Add and subtract mixed numbers with like denominators, e.g. by replacing each mixed number with an equivalent fraction and /or by using properties of operations and the relationship between addition and subtraction

4.NE.B.4.C Solve word problems involving multiplication of a fraction by a whole number, e.g., by using visual fraction models and equations to represent the problem.

NGSS:

4-LS1-1 Construct an argument that plants and animals have internal and external structures that function to support survival, growth, behavior, and reproduction.

MLR: Career & Educational Development 3-5

A3 Students identify and demonstrate behaviors that reflect positive interpersonal skills and lead to success in school or community.

- a. Getting along with others
- c. Working as a member of a team
- d. Managing conflict
- e. Accepting/giving/using constructive feedback.

Oysters for ME

Grade 4

Lesson Description: After reading *Aquaculture for ME*, students will work in small groups and determine what they need to know about the life of an oyster, what an oyster needs to survive and will research needed information. Students will measure and group oysters and solve word problems. Students will work in groups to design the packaging that must meet certain criteria and present their product to the class. Packaging will be designed for selling oysters in both grocery stores and on line.

Learning Objectives

The student will:

- Identify elements of successful teamwork
- Identify what they know about oysters
- Identify what they need to know about oysters
- Using technology, research information about the survival needs and growth pattern of oysters
- Add mixed numbers with like denominators
- Multiply fractions by whole numbers
- Solve a problem by designing a product



Procedure:

1. Students will read *Aquaculture for ME*
2. As a whole group, teacher will lead a T chart discussion and record on chart paper to be posted in classroom.

OYSTERS

What we know	What we need to know

Team Activity

3. Students work in small groups/teams and will:
 - a. Discuss and identify what is needed for their group to be successful.
 - b. List 5 guidelines for group work on a piece of chart paper.
 - c. Refer to their guidelines as they work through this lesson.
 - d. At the end of the lesson, students will score their group on how well guidelines were followed.
4. Using other aquaculture resources as well as on-line, teams will investigate the items identified in the “what we need to know” section of the T-Chart. Some of the “Need to Know” items might include:
 - a. What structures do oysters have that help their survival, growth and development?
 - b. How oysters are harvested?
 - c. How long oysters can stay alive once harvested?
 - d. How oysters are kept alive from harvest to table?
 - e. What size are oysters that are harvested/sold?
 - f. How are oysters usually eaten?

Individual Activity

3. Look at the Oyster Harvesting sheet. Put the oysters into two groups based on length. Use two different color pencils to circle oysters that should belong in each group. Decide criteria for grouping, e.g. oysters smaller than _____? in one group and oysters that are larger than that measurement in the other group.
 - a. Measure the length of oysters in each group to the nearest ¼” and write next to the oyster
 - b. Find the average size of oysters in each group
4. Complete the Oyster Math Challenge sheet



Procedure continued:

Team Activity

7. As a class determine scoring criteria for packaging and presentation.
8. Tell students to imagine that they are oysters farmers and want to sell their product in supermarkets and on-line. Oysters will be sold by the dozen and in 2 sizes: small (2" or under) and large (3" and over).
9. They will need to do the following:
 - a. Determine the best packaging for their oysters keeping in mind that the oysters **ARE ALIVE** and need to stay that way. (If students have difficulty, have them think of the different types of packaging that contain the food we eat...boxes, plastic containers, plastic bags, mesh bags, etc.)
 - b. Design the package - remember it should be simple and easy to use.
 - c. How will the package be shipped so that the oysters arrive alive?
10. Have each group share their package idea with the class. Have each group score their own package against the criteria developed by the class.



Oyster Math Challenge

1. Measure each oyster circled by color A and record measurements below.

Oysters circled by Color A	Oysters circled by Color B

2. Add the numbers in column A _____ column B _____

3. Find the average size of oysters in A _____ in B _____
Show your work below.

4. Sam's parents are having a summer party and they have invited 11 people to come. They will be serving oysters, pasta salad and his mom is going to make her famous strawberry pie. Sam and his sister love strawberry pie and his mom always cuts nice big slices. Each slice is $\frac{1}{6}$ of a pie. How many pies will his mom need to bake to be sure everyone gets a piece? Show your work and the equation for this problem.

5. At the last minute another 5 people show up. Will there be enough pie for them? Show your work and the equation.

6. What could Sam's mom do with the pies she baked so that everyone, including the extra guests, would get a piece?

Oyster Harvest

