Pizza Party

Tim and Lisa are having friends over for a pizza party. There will be 5 children which will include Lisa and Tim. Each child wants 3 slices of pizza. How many whole pizzas do they need? How will the pizzas be cut into fractional parts?

Grade Levels Pre-K-2

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Context

Our class has been working on a unit that involves identifying fractions and fractional parts using a variety of methods. I also wanted the children to understand the concept of equal shares. We used the big book *Eating Fractions* by Bruce McMillan, which uses illustrations of foods to discuss the concepts of wholes, halves, thirds and fourths. We used a variety of real foods such as bananas, apples, oranges, cookies, muffins, graham crackers and pizza to practice fractional parts. Sixths were introduced at the end of the unit by making a round pizza booklet and having the children practice preparing "pizza orders". They cut green pepper, mushrooms or pepperoni out of construction paper to glue down on their pizza circles when given certain fractional parts to cover up.

What This Task Accomplishes

This task is very open ended which provides for numerous solutions. The students need to decide on what size slices to give each friend at the pizza party. They also have to keep in mind that there is an equal number of slices for each child. They can use halves, thirds, fourths or sixths to decide how many slices they want to divide the pizza circles into. This talk challenges their understanding of the concepts of whole, equal and fractional parts.

What the Student Will Do

The students are provided with a sheet of two-inch circles and are asked to prepare "pizza orders" for the five friends. They prepared their circles with cheese, sauce, pepperoni, mushrooms or green peppers. (More circles were provided than needed.)

The students represented the five friends by drawing faces on their paper and they were asked to figure out how many whole pizzas they will need if each friend wanted three slices. Then they will decide how they will divide the pizza circles into equal fractional slices by folding, cutting and gluing them near the faces they had previously drawn.

The students were encouraged to use the fractional words and/or write fractions to demonstrate their understanding of fractional parts with their written or oral explanations.

Time Required for Task

Pizza Party

60 - 75 minutes

Interdisciplinary Links

Health/Nutrition - preparing healthy fractional snacks and planning a class pizza celebration.

Social Studies - researching the origins of pizza.

Science - go on nature walks to look for things that have equal parts.

Teaching Tips

It is important for young children to practice dividing real foods or objects into equal and unequal amounts with partners, or cooperative groups to understand the concepts of whole and fractional parts. Before cutting the foods, invite the children's explanations of how the snack should be divided so that everyone gets the same amount.

Magazines can be used to select illustrations of foods or favorite scenes that could be divided equally into halves, thirds or fourths. They can be laminated to be used as puzzle games.

Fraction "hunts" were done in partners to look all around the classroom and school building for objects that were divided into equal parts such as windows, cabinets, pocket folders, bookcases, etc.This was also extended to a family math activity for homework. This may also be extended to nature walks.

Sixths are harder to understand with circles and can be confused with thirds. The students watched demonstrations and practiced helping each other fold and cut circles into six equal parts.

Pattern blocks can be used to explore the shapes to find those that are halves, thirds or sixths of another. If you have an overhead, let the children demonstrate for their classmates how they matched pattern shaped pieces to the shape.

Suggested Materials

- Foods (muffins, bananas, apples, oranges, cookies, graham crackers, chocolate bars, pizza)
- Pattern blocks
- Magazines for fractional picture puzzles
- Pizza (donated boxes and cardboard inserts, real pizza)
- Literature:

Eating Fractions by Bruce McMillan
The Half-Birthday Party by Charlotte Pomerantz
Each Orange Had 8 Slices by Paul Giganti, Jr.

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Possible Solutions

This task is open ended and many solutions are possible. Each student will show whether s/he will use halves, thirds, fourths, or sixths in dividing their pizza slices. The reasoning skills and connections that they make will be reflected in showing equal slices and in how they showed or explained left over parts of pizza.

Benchmark Descriptors

Novice
This student did not understand the concept of equal fractional parts even though the idea of thirds is shown. The student has several errors in mathematical reasoning and representation.

Apprentice
This student used the strategy of fourths that was leading toward part of the solution and the procedure shows some mathematical reasoning. The student understood the concept of equal slices, but did not reason correctly the number of whole pizzas or explain the extra slice.

Practitioner
This solution shows that the student has a clearer and greater understanding of the task, which is indicated by the mathematical representation and explanation. This student used halves and indicates a correct number of whole pizzas needed for the pizza party and also included a math sentence.

Expert
This student shows a clear explanation and detailed representation for the task. The student cut pizzas into sixths, but shows that each child had thirds and the correct total of whole pizzas is indicated with a humorous ending for the leftover pizza. This student also chose to use more mathematical communication by using a number sentence for the number of slices eaten.

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