Fractions in Action

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Content Objectives
Math Objective: Strand: NUMBER AND OPERATIONS - FRACTIONS (4.NF): Extend understanding of equivalence and ordering of fractions (Standards 4.NF.1–2). Build fractions from unit fractions by applying and extending previous understandings of operations on whole numbers (Standards 4.NF.3–4). **Dance Strand Create**: Standard 4.D.CR.3: Develop a dance study, alone or with others, that expresses and communicates a main idea.

Student Learning Outcome
The students will understand fraction equivalence by visually seeing the various fractions of the students in the class doing different movement and/or shapes. They will also deepen their understanding of fractions by choreographing "fraction dances".

Materials Needed
8 pieces of different colored blocks (or paper) placed side by side of each other
Print out the fraction dances. Each group of 4 will need one.

Music: I use "Intro" by The xx

Experience / Identify
Have the students spread out in the space. Have them dance on a high level. Then have them dance on a low level. Then call out "numerator" which means to dance on a high level; and call out "denominator" which means to dance on a low level. Keep practicing "numerator" = high level and "denominator" = low level. Then sit them down and show them a fraction. Ask them which number is the numerator (3) and which number is the denominator (5). Ask them about a few more fractions.

Explore / Investigate
Place 8 colors of blocks together in a row.

Assign one color to each child. Try to keep the groups equal. (Due to the number of students in your class, the groups might not be equal. You can have some children represent 2 children if necessary so each group will have an equal amount). Have all the students create a shape in their own space. Now just play with fractions by using the students in the class. Give the following commands:

1. All the greens and yellows (or 1/4 of the class) create a low shape. All the reds and grays (or 1/4 of the class) create a high shape. All the oranges, pinks, purples and blues (1/2 of the class) dance in the negative space of the other colors.

2. Green, yellow, orange and pink create arching shape. What fraction of the class is in arching shapes? (1/2) Purple, blue, red, gray and dance under and around the arches. How many are dancing? (1/2)

3. With your hand or a large piece of paper, cover up 3/4 of the colors and have 1/4 dance. Have the other colors (3/4) create a shape around the dancers.

4. Only orange (1/8) make a symmetrical shape in the middle of the room. The other 7/8th of the class can add on to the shape and keep it symmetrical.

5. Green, yellow, red and grey make shapes against the wall. Orange, pink, purple and blue make shape in the middle of the room. How many are against the wall? (1/2) How many are in the center of the room? (1/2)

6. Green, yellow, orange, pink, purple and blue move sharp and staccato. Red and grey move sustained. How many are moving staccato? (2/8 or 1/4) How many are moving sustained? (2/8 or 1/4).

7. Have all colors skip. How many are skipping? (the whole class)

Make up more commands and have the students tell you what fraction of the class is participating in what ways. The students can also help you come up with ideas.

Create / Perform
Now have the students divide into groups of 4 and choreograph the following "Fraction Dances".
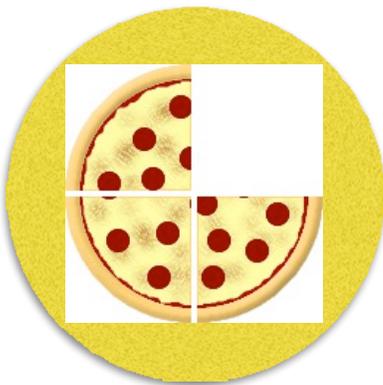
Fraction Dance 1
Whole group turns 3 times then freezes in a shape.
3/4 goes in a low shape on the ground while the other 1/4 dances around or leaps over
       them.
1/2 makes a shape while the other 1/2 moves through their negative space.
Whole group gallops in circular patterns.
3/4 melt to the ground while the other 1/4 explodes 2 times.
Whole group floats to one wall and freezes in a shape against the wall.
1/4 skip to a circle and creates a pyramid. After they're done, another 1/4 skips to a new
       circle and creates a shape with legs connected in the air. The last 1/2 skips
       around the 2 shapes.
Whole group slithers close together to create a low shape.

Fraction Dance 2
Whole group jumps down a zigzag pathway then freezes up-side-down.
1/8 moves sustained while 7/8 stays up-side-down.
Whole group slides to a new spot. Then 1/4 dances on a low level, 1/4 dances on a medium level and 1/2 dances on
       a high level.
Whole group freezes in a shape, but stays on their same level from the previous section.
1/2 leaves the shape and dances while turning around the rest of the shape with levels.
Whole group slides away from the placement of the shape. 1/4 gallop back to the location of the previous shape and
       connects to create a twisted shape. 3/4 hold hands and slides around the twisted shape.
Whole group explodes and collapses.

Perform the dances for the rest of the class. Ask the audience members about the fractions in the dance. For example: How many are in a shape? How many are on a high level? How many are moving through the negative space?

<u>**Connect / Analyze**</u>
Start to point out fractions around the school. How many classes are down the main hall verses how many classes are in the back hall? How many students go to first lunch? How many students go to recess at the same time? Out of everyone who comes to school, how many are teachers?