Learning Fractions Through Dance

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Grade   5

Subject   Math

Topic   Simple fractions

Descriptive Sentence
This lesson explores common fractions through dance and body movement. Students will be able to demonstrate concepts of the whole number, ½, ¼, 1/8, 2/5, 1/6, 2/6, 3/6, etc. through dance compositions, and be able to explain what fractions are demonstrated by the movements the group created.

Curricular Outcome or Expectation
- Represent, and explore relationships between fractions using concrete materials and drawings
- Compare, order, and represent whole numbers and fractions using concrete materials and drawings
- Investigate patterns involving fractions using concrete materials and drawings
- Demonstrate the equivalence of proper fractions using concrete materials, drawings, and symbols (e.g., 2/4 of a chocolate bar = ½ of the bar)
- Explain their thinking when solving problems involving whole numbers, fractions, and decimals (e.g., explain why 3/6 is the same as ½)

Materials
- CD player
- CD's of appropriate music that has 4 beats to a bar

Space Requirements
    Large space

Getting Ready

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Please take a moment to review the "Warm Up" Video

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- The following activities will help warm up the body and prepare the students for movement. Use simple stretches for the arms and legs, isolated movements for the limbs of the body (head, shoulders, hands, and feet) and simple aerobic activity such as running to the beat of the music, 4 runs then 4 jumps, etc.
- Use contrasting movements that will show different levels and different qualities of movement.

- Divide the class into small groups, preferably 4 students to a group or set. Ask each set of 4 to demonstrate the whole number by doing the same movement as a group. Initiate a discussion to establish the idea that they are one whole group made up of 4 parts. (Establish that each student is ¼ of the whole)
- Now ask 2 students of each group of 4 to do the same movement while the other 2 students observe. Establish that ¼ + ¼ = ½.
- What fraction of the whole is moving and what fraction is observing? Now ask ½ of the group to do the same movement and the other half to do a different movement. Discuss what is happening and establish that 2/4 = 1/2.
- Now ask 1 person in each group of 4 to move while the other 3 observe. Establish that ¼ of the whole is moving, ¾ are watching. (1/4+3/4= 4/4 or 1)
- Review that each whole group is made up of 4 equal parts. Ask each group to decide what fraction of their group will move, what fraction remains observing. Share with the class. If possible write the fractions on chart paper or board.

Development

- Put the students in groups of 6 if possible. Establish that each group is now one whole group of 6 equal parts (or whatever denominator you are working with).
- Challenge each group to explore the following fractions:

  1) 1/6 of the group does a movement; 5/6 of the group does a different movement.
  2) 2/6 of the group does the same movement; the other 4/6 does a different movement. (Discuss 1/3, 2/3)
  3) 3/6 of the group does the same movement. What fraction of the whole will do a different movement?   (3/6=1/2)

- Still in groups of 6, repeat the activity using fractions of whole, 1/2, 2/6, 2/3.
- Again explore ways of dividing the whole group into fractions. Have 3/6 of the group do one movement. Ask what fraction of the group is remaining? What is another way of saying this fraction?
- Review the concept of simplifications 3/6 is the same as 1/2, 2/6 is the same as 1/3.
- Challenge the group to think of ways of demonstrating different fractions. Allow time for the thinking and working out of ideas. Ask each group to perform then talk about the fractions they used. E.g. 2/6 or 1/3 of us were circling our arms and 4/6 or 2/3 of our whole group were turning in circles.
- Ask the class to sit down and lead the same demonstration in groups of 8, 9, 10… Use probing questions to allow students to identify and explain the fractions.

Application

- Ask the students to work in groups of 5. Tell the students that now they will have a chance to create their own fraction dances. The dance needs to have a clear beginning and ending and must show at least 4 fractions. At the end of the dance the students should be able to explain what they were doing (e.g. 3/5 of the group are doing a swinging movement, 5/5 of the group are doing the same movement).

- Remind the students that they can choose any movements that they want but use the elements of dance and principles of composition. Use different levels, timing, space and body parts. The students can use repetition, cannon or unison. Have music available so that the students can practice to music while they are working out their compositions.

Closure

- Have each group perform their compositions. With a digital camera, take photos of the dances.
- Remind the students of good audience manners (no talking, clap at the end, etc.) Ask the audience to recall where the fractions were and how the students were moving during them.

To give individual students opportunities to review or further develop their understanding of the concepts in the above lesson, please go to the *Student Zone, Brain Games or click here*