

# Proportions & Ratios Dance



## Math & Dance

Grade 8

### Math Common Core Standard(s) Grade 8

8.3.C.2.a Use proportional reasoning to solve measurement problems.

### Dance (MD) Standard(s) Grade 8

- 3.1.a Improvise dance studies in response to a variety of sensory and motivational stimuli.
- 3.1.b Communicate abstract concepts using improvisation.
- 3.1.c Create dances individually and in groups using the improvisational process.



## CONNECTED OBJECTIVES

Ratios and proportions can be demonstrated by physical means as well as in written form. Students relate concept of ratios and proportions to percussion. The students will demonstrate understanding of proportions by creating a step dance within a framework of 4 measures of 4 beats each (16 beats total) using call and response.

## MATERIALS & RESOURCES

- Video **STOMP** or similar dancing
- *What Did You Notice?* worksheet

## KEY CONTENT VOCABULARY

- Proportion
- Ratio
- Percent
- Balance
- Equivalent

## KEY ARTS VOCABULARY

- Beat
- Rhythm
- Double-Timing

# A S S E S S M E N T

- Student performance (Whole Class)
- Reflection exit ticket



# L E S S O N S T E P S

- 1) Students view a movie clip of a performance of **STOMP**. Students will then share their opinions as to why it was exciting to watch. Responses will nearly always include, “It made me feel like dancing.” and “Percussion moves me.” If they are not offered by the students, the teacher can allude to them.
- 2) Explain that in almost every culture in the world there are percussive instruments, played to move individuals to dance, and almost every culture has developed a form of dancing which involves making percussive sound while dancing. Play clips from **Riverdance**, **Bring in Da Funk**, **Bring in Da Noise**. (Check your media center’s collection of videos. Otherwise use the clips can be found on Teacher Tube)
- 3) Explain that clips show people taking turns dancing, and then, as if answering a challenge, another person danced the same number of beats but in a slightly different pattern. This is call and response. Tell students to watch the **Riverdance** clip again, looking to see who is doing the calling and who is responding. How was it done? Repeat this with the **Bring in Da Funk** clip as well. Direct students to observe the differences in the patterns but point out that the number of beats in the response is the same as the number of beats in the call.
- 4) Students should stand at their desks with their chair pushed under the desks. Remind students that they should be protective of their own personal space and respectful of that of other students. There will be no physical contact between individuals during this exercise.
- 5) Side A of the room will be asked to march in place for eight beats, each step representing one beat. The Side B of the room will be asked to “answer” the first half by marching in place for eight beats but twice as fast, so that they have marched 16 times during the 8 beats.
- 6) What correlation do you see between the first number and the second? Use a teacher created worksheet to record *What Did You Notice?* .
- 7) This time Side A should march for 4 beats and then double the time for the remaining four beats. Side B should march double-time for four beats(eight marching steps) and then clap their hands together three times for each of the remaining 4 beats. (This can be done well if you say “**one and a**”, clapping on the **one**, the **and** , and the **a**.)
- 8) Now record the beats on the board for the first half of Side B as 8 and the second four beats as 12. All of these rhythms were made during the span of just 4 beats... but the way they were made used different proportions of percussion to fill the four beats.
- 9) Direct students to split into groups of 4-6 members and create a percussive movement piece. Their “instruments” are their bodies: they may clap, stomp, snap their fingers, slap their thighs, whatever they want (as appropriate). They will have 16 counts to fill with whatever combination of percussive beats they want. Students will have to notate their movement by writing down how many counts are being used for each movement and in what combination. For example:

Beats one through four- one stomp of a foot  
Beats five and six- two short handclaps  
Beats seven and eight- one finger snap each  
Beats nine through twelve- double time running steps  
Beats thirteen and fourteen- two slaps each on the thigh  
Beat fifteen- one hand clap  
Beat sixteen- students say "HAH!"

- 10) Allow time for students to create and rehearse their 16 beats within their groups.
- 11) Performance! Have two groups stand and deliver their performance as a call and response. The first group performs their 16 beats and then the other "answers" by their performance. Repeat the call and response until all groups have performed.

## EXTENSIONS & OPTIONS

Have students break into smaller groups to create their own dance using proportions.

## SOURCES & RESOURCES

*Teacher Tube* for STOMP and other Dance videos

G E T S M A R T T H R O U G H T H E A R T S

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