



# Using Algebraic Expressions to Analyze Concert Schedules

## OVERVIEW

### ESSENTIAL QUESTION

How can writing and evaluating expressions be used to explain the scope of an artist's concert schedule?

### OVERVIEW

*In this lesson, students practice writing and evaluating algebraic expressions to explain The Beatles' concert schedule during the early years of their career.*



To many, The Beatles seem to have been a big bang, bursting from obscurity to international stardom with their 1963 debut album, *Please Please Me*. Quite the opposite is true. In the years before the group had a recording contract, they worked constantly, primarily playing concerts.

Between 1960 and 1963, The Beatles maintained a rigorous concert schedule. Outside of their hometown of Liverpool, England, they performed lengthy concert residencies in Hamburg, Germany. One of their residencies included a stretch of 104 consecutive shows. During this time they worked on repertoire, learning dozens of “cover” songs spanning several genres. They worked on their group sound, playing several sets a night and fine tuning the skills that helped them “hold” an audience's attention.

The work ethic The Beatles applied to their concert schedule wasn't out of the norm for the music industry at that time. Grueling concert schedules were already an understood part of the work and lifestyle for touring musicians. Jazz big bands at the height of their popular success in the 1930s and 1940s were criss-crossing the U.S. year-round. Black American music artists like Little Richard who pioneered the sound of Rock and Roll rose to success via an arduous concert schedule. Little Richards' chart-topping hits defined the sound of the new genre, and his dynamic live performances set the standard for an exhilarating Rock show. The Beatles knew this and learned from it, so much so that many of their shows featured them “covering” Little Richard songs.

The musicianship The Beatles developed and refined during these early years profoundly informed how they operated as a group for the rest of their career. When examining this period and aspect of the band's history, using algebraic expressions to analyze performance data can provide a deeper understanding of how the group's relentless early concert schedule paved the way for much of their later success.

## OBJECTIVES

Upon completion of this lesson, students will:

### 1. KNOW (KNOWLEDGE):

- How to write and evaluate algebraic expressions in which letters represent numbers
- About The Beatles' early development and concert schedule
- About Little Richard's concert schedule and influence on The Beatles

### 2. MASTERY OBJECTIVE:

- Students will be able to write and evaluate algebraic expressions using historical data of both The Beatles and Little Richard in order to analyze the scope of their concert schedules during the early 1960s.

## ACTIVITIES

### MOTIVATIONAL ACTIVITY

1. Ask students to think about something that they do well, and to consider the process for how they learned to do it well. Ask them to share their responses with two partners (*if students need prompting, give them examples of mastering academic skills such as reading or memorizing basic math facts, mastering a sports skill, or learning to play an instrument or become a better artist*).

### PROCEDURE:

1. Show **Image 1, The Beatles**. Ask students:
  - Have you heard of The Beatles? Do you know any of their songs?
2. Play **Clip 1, The Beatles' Early Years**. Ask students:
  - According to the video, before The Beatles' achieved international success, they had "all this development." What do you think "development" means in this context? How long might it have taken?
3. Explain to students that anyone who aspires to do something well has to practice at it. Show **Image 2, Malcolm Gladwell Quote on The Beatles' Early Years**. Read the quote aloud or ask a student volunteer to read the quote. Then ask students:
  - Considering the numbers in the quote, how could math be used to better understand The Beatles' concert schedule?
4. Distribute **Handout - The Beatles' 1961-62 Hamburg Performances**. Demonstrate the first problem on the handout for students, sharing how to develop an algebraic expression based on the question asked (see the **Teacher's Guide** for the correct algebraic expressions.)
5. Organize students into two groups, and have each group move to opposite sides of the classroom. Each group will create and calculate algebraic expressions for the remaining word problems on the handout.

Have students work in pairs, then share their work with other group members. Student groups should come to consensus on the correct algebraic expression and subsequent calculation.

6. Ask student pairs to share their algebraic expressions and calculations with a student pair from the other side of the room.
7. Show **Image 3, Little Richard**. Explain to students that The Beatles weren't the first and only musicians or musical group to work hard to achieve success. In fact, their grueling concert schedule was similar to what many of the Rock and Roll pioneers, like Little Richard, had been doing for years.
8. Distribute **Handout - Little Richard's 1962 England Tour**. Demonstrate the first problem

on the handout for students by creating an algebraic expression (see the **Teacher's Guide** for the correct algebraic expressions).

9. With students still in two groups, assign each group the remaining word problems on the handout. Have students work in pairs creating algebraic expressions for each problem, then sharing the algebraic expressions with other group members. Student groups should come to consensus on the correct answer.
10. Once students have finished, they can discuss the algebraic expressions they created with the entire class.

### SUMMARY ACTIVITY

1. Have students look again at **Image 3, Malcolm Gladwell Quote on The Beatles' Early Years**. Ask students:
  - In the quote, Gladwell states that “most bands today don't perform 1,200 times in their entire careers. This is what set the Beatles apart.” After analyzing Little Richard's concert schedule and considering how often contemporary artists that you're a fan of play concerts, do you agree with Gladwell's statement about The Beatles extraordinary performance numbers?

### EXTENSION ACTIVITIES

1. The Beatles' rigorous concert schedule in their early years was crucial to them developing their individual musicianship and becoming a better band. Now, students can discover how their improved musicianship also benefited their songwriting. Share the Dueling Data Interactive Infographic (<http://duelingdata.blogspot.com/2016/01/the-beatles.html>) and give students time to explore this information. Ask students to interpret the data. For example, how could they determine who wrote most of The Beatles' songs?

## STANDARDS

### COMMON CORE STATE STANDARDS

#### *Expressions and Equations*

CCSS/Math.Content.6.EE.A.2: Write, read, and evaluate expressions in which letters stand for numbers.

#### *College and Career Readiness Anchor Standards for Reading (K-12)*

Craft and Structure 4: Interpret words and phrases as they are used in a text, including determining technical, connotative, and figurative meanings, and analyze how specific word choices shape meaning or tone.

Integration of Knowledge and Ideas 7: Integrate and evaluate content presented in diverse media and formats, including visually and quantitatively, as well as in words.

#### *College and Career Readiness Anchor Standards for Speaking and Listening (K-12)*

Comprehension & Collaboration 2: Integrate and evaluate information presented in diverse media and formats, including visually, quantitatively, and orally.

Presentation of Knowledge 4: Present information, findings, and supporting evidence such that listeners can follow the line of reasoning and the organization, development, and style are appropriate to task, purpose, and audience.

#### *College and Career Readiness Anchor Standards for Language (K-12)*

Language 1: Demonstrate command of the conventions of standard English grammar and usage when writing or speaking.

Vocabulary Acquisition and Use 6: Acquire and use accurately a range of general academic and domain-specific words and phrases sufficient for reading, writing, speaking, and listening at the college and career readiness level; demonstrate independence in gathering vocabulary knowledge when encountering an unknown term important to comprehension or expression.



## RESOURCES

### VIDEO RESOURCES

- *The Beatles: Eight Days a Week - The Touring Years* - "The Beatles' Early Years"

### HANDOUTS

- Handout - The Beatles' 1967 Hamburg Performances
- Handout - The Beatles' 1967 Hamburg Performances (Teacher's Guide)
- Handout - Little Richard's 1962 England Tour
- Handout - Little Richard's 1962 England Tour (Teacher's Guide)