

USING ALGEBRAIC EXPRESSIONS TO CALCULATE TOURING COSTS



Est. Time: 60 minutes

Subjects: Math

Age Range: Elementary (5th-6th Grade)


[View the classroom lesson](#)

★ *TEACHROCK* ★



How can writing and evaluating algebraic expressions be used to anticipate a musician's touring costs?

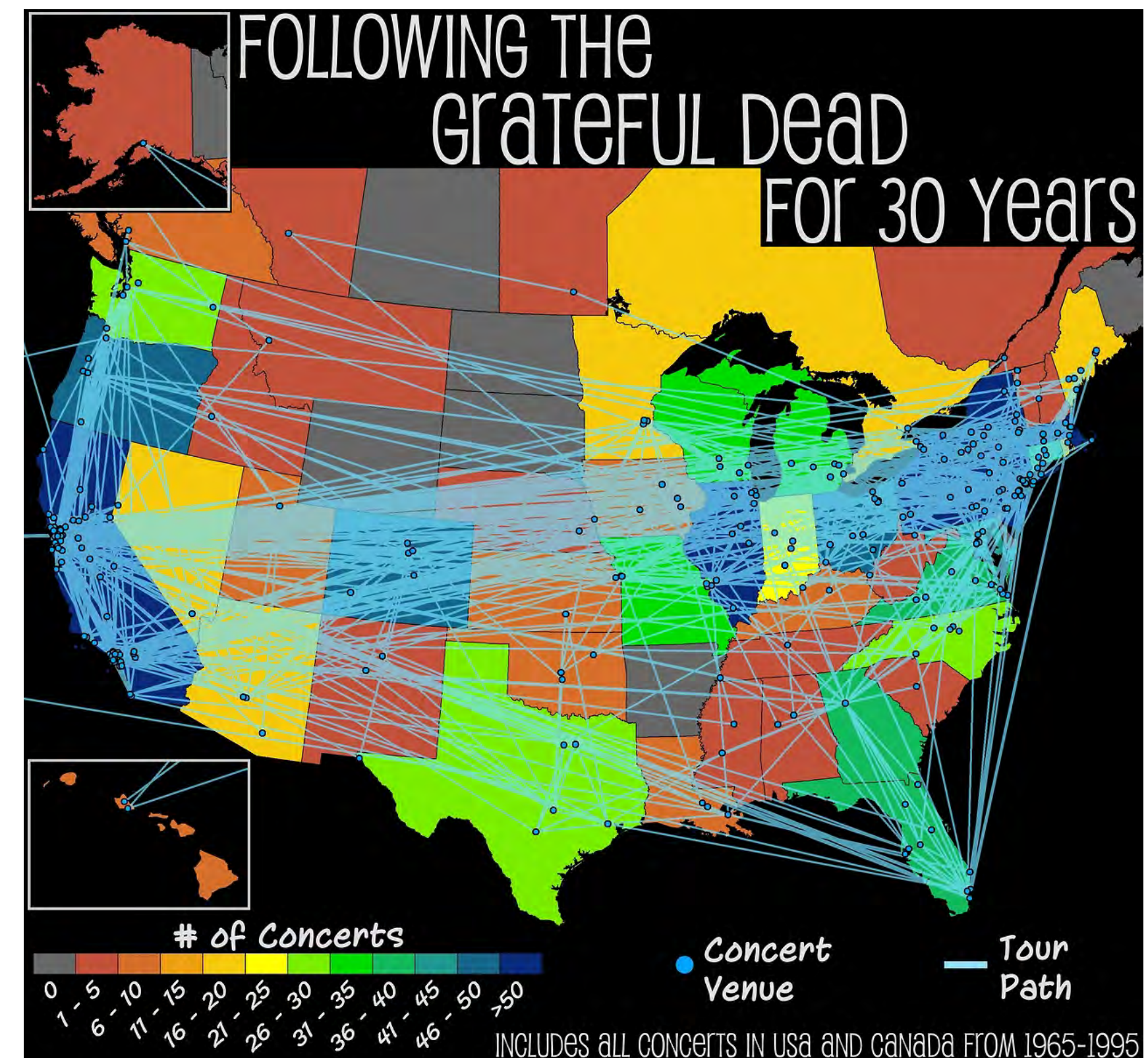
In this lesson you will:

- Write and evaluate algebraic expressions to solve real-world problems related to touring costs
 - Use proportions to find an unknown value
 - Explore the the work of singer-songwriter Jackson Browne
- 

Study the image to the right.

Consider or ask a friend:


- What might this graph be showing? What do the dots represent? What do the lines represent?
- Who are the Grateful Dead?
- Do you think other bands or musicians have similar touring schedules?



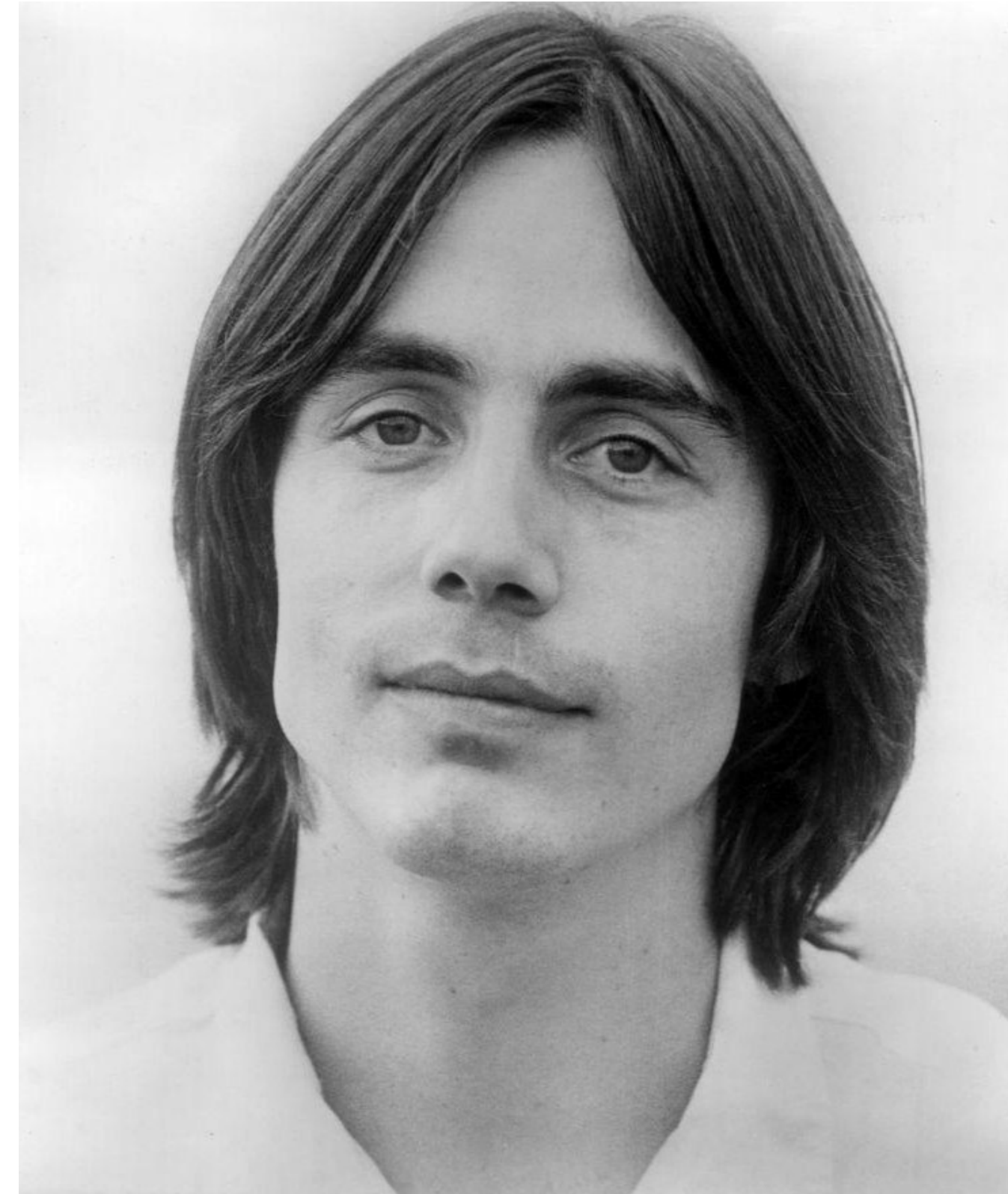


In this lesson, you will be using data to analyze the expenses associated with going on tour.

Consider or ask a friend:

- How would you define the term “expense”?
 - What sort of expenses might be involved in going on a tour?
- 


The case study for calculating touring expenses is Jackson Browne. Jackson Browne is a singer-songwriter who has been writing and performing music since the 1960s. His best-selling album is *Running on Empty*, which was released in 1977. The album was written and recorded while Browne was on tour, and many of the songs discuss what life is like “on the road.”





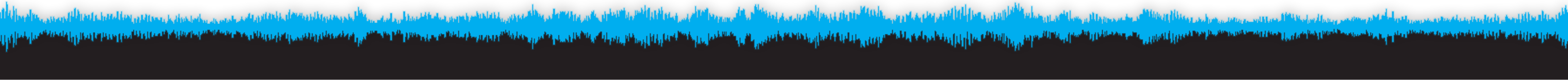
Work through the word problems in **Handout - Touring Cost Word Problems**.

Before answering each question, consider:

- What is the important information needed to complete this equation?
 - What math function is required for this problem?
 - What formula would be used to solve this problem?
- 



Examine **Handout - Calculating Jackson Browne's 1978 Tour (First Leg)**. Before filling in the chart, consider:

- Is there a single expression that can be used to calculate each row of the worksheet?
 - What is the necessary information needed to calculate each row?
 - What sort of arithmetic functions are needed to create the calculation?
- 

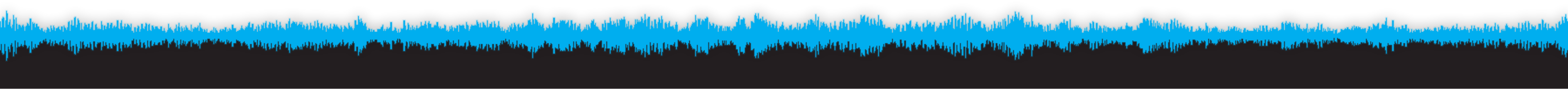
$$\left(\frac{\text{Distance}}{\text{Miles Per Gallon}} \right) \bullet \text{Cost of Gasoline} = \text{Total Cost of Trip}$$

Use the above formula to fill in the chart on **Handout - Calculating Jackson Browne's 1978 Tour (First Leg)**.




Most touring musicians hire a driver to transport them from venue to venue.

Using **Handout - Calculating Jackson Browne's 1978 Tour Driver's Pay (First Leg)**, calculate the cost of a bus driver for the first leg of Jackson Browne's tour. Before filling in the chart, consider:

- Is there a single expression that can be used to calculate each row of the worksheet?
 - What is the necessary information needed to calculate each row?
 - What sort of arithmetic functions are needed to create the calculation?
- 

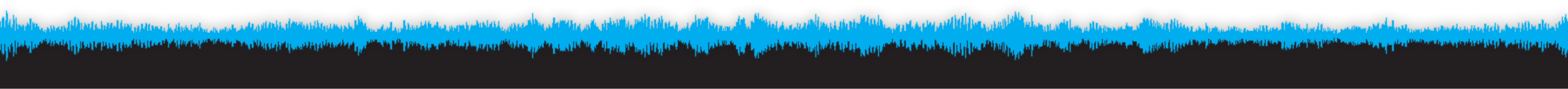
$$\left(\frac{\text{Distance}}{\text{Miles Per Hour}} \right) \bullet \text{ Pay Per Hour} = \text{Total Cost of Driver}$$

Use the above formula to fill in the chart on **Handout - Calculating Jackson Browne's 1978 Tour Driver's Pay (First Leg)**.




As a final activity you will be creating your own budget for a tour. Individually or with a group, complete **Handout - Creating a Touring Budget** using the skills you practiced in the above handouts.

After completing the handout, consider:

- What was the biggest touring cost?
 - What sort of issues did you experience when you began rounding numbers in Part 2? What does this tell you about some of the possible issues using rounding?
 - What might be some other touring costs that the handout didn't consider?
 - Is there a way to cut down on some of the touring costs?
 - What kinds of risks and unknowns might affect the budget you calculated?
- 



Read the lyrics to the Jackson Browne song “Running on Empty.” Then consider or ask a friend:

- What feeling might Browne be trying to convey with those lyrics? What is invoked in the lyrics?
 - How might the lyrics describe the experience of touring?
 - Are there any words that stand out to you? What might he mean by “running on empty” or “running blind”?
 - Based on the calculations you made for this lesson, do you feel like the lyrics might describe the feelings of being on tour? Why or why not?
 - Based on the lyrics, would you say there are other sorts of touring costs outside money? (*For example: exhaustion, emotional strain.*)
- 

SUMMARY

- By knowing the distance between locations, gas mileage, and the price of gasoline, you can use multiplication and division to estimate the cost of gasoline for going on a tour
- By knowing the distance between locations and the average miles per hour, you can use multiplication and division to estimate the cost of a driver for going on tour
- When all the costs are considered, touring can be an expensive endeavor
- Jackson Browne's song "Running On Empty" speaks directly to the economic and emotional stresses often experienced by musicians going on tour



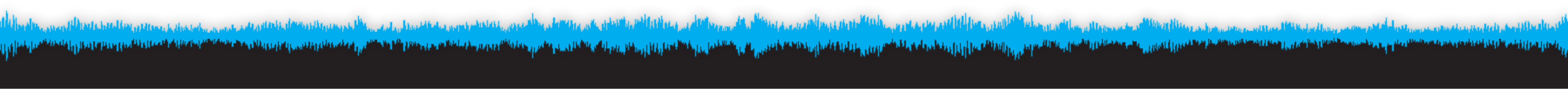
BE CREATIVE

- Jackson Browne is well known for his environmental activism. He was one of the founding members of Musicians United for Safe Energy (MUSE), which opposes nuclear energy. He is also involved in fighting plastic pollution, and received a Lifetime Environmental Achievement Award in 2010 for his efforts to make his tours more “green.” Complete the worksheet **Calculating The Environmental Cost of Jackson Browne’s 1978 tour** to see how much CO₂ Browne saves by using other modes of transportation.
- Imagine that you are an artist who is about to embark on a national tour. Use **this activity** to design and sketch your own personalized tour bus, and examine **this site** for inspiration.



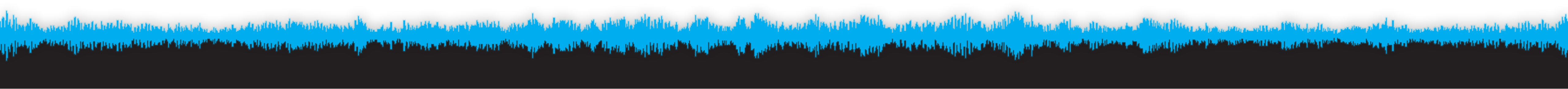
BE CURIOUS

Research the most recent tour schedule for one of your favorite bands or musicians. Then estimate the cost of going on such a tour.



CONNECT

Share it with us! Either you or an adult in your life can share your work with TeachRock on **Instagram** or **Facebook**, email to **info@teachrock.org**, tweet it to **@TeachRock**, or make an Instagram post and tag us **@teachrock.org**





★ *TEACHROCK* ★
•ORG

Visit us at teachrock.org for hundreds of other free arts-rich resources for every age range and classroom.

Please check back to teachrock.org/distancelearning frequently as we will update the material weekly!