

DAYTON PERFORMING ARTS ALLIANCE

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Ballet Opera Philharmonic

Who Is the Brass Family?

July 20, 2020 at 10 am
Dayton Philharmonic Brass Quintet



Aaron Brant (horn), Charles Pagnard (trumpet), Tim Northcut (tuba), Alan Siebert (trumpet), Chad Arnow (trombone)

Dear Families,

Welcome to the Dayton Performing Arts Alliance's [Summer Streams](#) Family Series. We've created these materials so you can bring the performances you watch to life at home!

After watching the performance, try these activities at home to reinforce and extend what your child learned. Tag us on [Facebook](#) in your photos of the explorations you do! We'd love to see what you create together.

To learn more about DPAA's education programming that reaches over 60,000 students each year, visit our website at www.daytonperformingarts.org/education.



Ruth

Ruth Reveal
Director of Education
Dayton Performing Arts Alliance

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Science Connection

How do instruments make sound?

Instruments of the Brass Quintet



Image via bethsnotesplus.com

Build Your Own Brass Instrument

Brass players make sound on their instruments by buzzing their lips into their mouthpiece. Try creating your own "brass" instrument using [these instructions](#). Image via [New York Philharmonic KidZone](#).

- Can you change the pitch of your homemade instrument by changing the way you buzz your lips?
- How else could you change the pitch of your instrument?



The Relationship Between Pitch and Length

You can explore the relationship between the pitch (highness or lowness of a tone) and length of the object at home!

- If you have a metal or wooden ruler at home, try [this experiment](#).
- If you have rubber bands and a shoebox at home, try [this experiment](#).
 - Longer object = more space to vibrate = slower vibrations = lower pitch
 - Shorter object = less space to vibrate = faster vibrations = higher pitch
- Which instrument in the brass family sounds the lowest? Why? Which sounds the highest? Why?

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Math Connection

Brass instruments are constructed from one long piece of metal tubing that is coiled to make the instrument manageable to hold and to play.



Image via bbrumpet.com

If you unfurled each of the instruments, the following chart shows the full length of their tubing.

Instrument	Tubing Length in Feet
Trumpet	6.5 feet
Trombone	9 feet
Horn	12 feet
Tuba	16 feet

Look at the chart above, and think about the information you can learn from it.

1. Which instrument has the longest tubing?
2. Which one has the shortest tubing?
3. Is there a pattern in how the lengths change?
4. How does the length of tubing change the pitch of the instruments?
5. What do you predict the valves (keys on the instruments) do to the pitch? How? If you'd like to learn more about the valves, watch [this video!](#)

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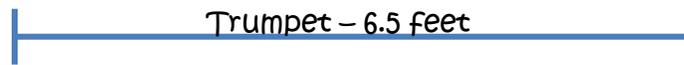
Modeling Tube Length

Materials

- Ruler or tape measure
- Sidewalk chalk
- Tubing length chart from previous page

Method

1. Bring the above chart, your ruler or tape measure, and sidewalk chalk outside to your driveway or sidewalk.
2. Mark a line to show your starting position.
3. From your starting position, measure 6.5 feet and mark that point. Draw a line from your starting point to your end point and label that line "trumpet" (**look at the example below**). This shows the full length of tubing of a trumpet.
4. Return to your starting position, measure 9 feet and mark that point. Draw another line in a different color and label that line "trombone." This shows the full length of tubing of a trombone.
5. Repeat in different colors for the horn and tuba.
6. When you're finished, think about how the lengths of these instruments' tubing change their pitch (highness or lowness of a sound).



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English Language Arts and History Connection

Connecting ELA, Music, and History

- The Brass Quintet played an instrumental (meaning without any singing) version of “What a Wonderful World.” [Now watch this version](#) performed by Louis Armstrong.
 - How was the instrumental version different from Louis Armstrong’s version? How were they similar?
 - What words could you use to describe the music and lyrics of the song?
- [Watch this video](#) to learn more about Louis Armstrong.
 - What were a few of the “firsts” that Louis Armstrong accomplished as a Black musician?
- Write a Haiku about how the song “What a Wonderful World” makes you feel.

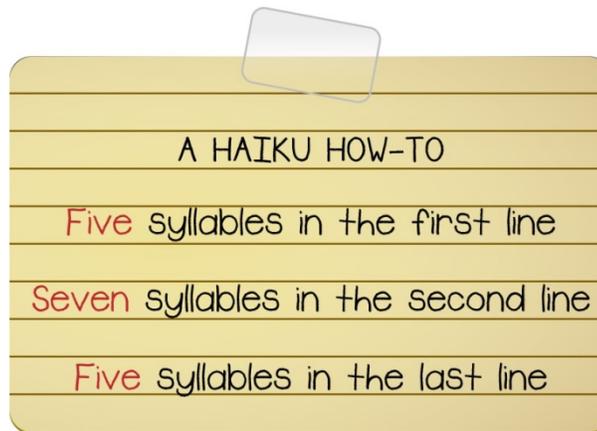


Image via CBC.ca

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Resources Referenced

<https://www.cbc.ca/kidscbc2/the-feed/how-do-you-haiku...and-what-is-it-anyway>

<http://www.bbtrumpet.com/baroque-natural-and-fanfare-trumpets/>

<https://www.youtube.com/watch?v=AH6WtulPna0>

<https://www.youtube.com/watch?v=CWzrABouyeE>

<https://www.youtube.com/watch?v=AQJw95-H9mM>

https://www.youtube.com/watch?v=_wHx_tBfu5c

https://www.nyphilkids.org/lab/make_trumpet.html