



Second
Edition

AROUND THE WORLD



IN TWENTY-ONE TRUMPETS

A BRASS ODYSSEY

An Interdisciplinary Approach to the Fundamentals
of Brass Playing Using the Natural Trumpet

CHRIS HASSELBRING & KIRSTY MONTGOMERY





Brass for Beginners®

Creative Learning through
Interdisciplinary Education

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Authors: Chris Hasselbring and Kirsty Montgomery

Editor: John Humphries

Graphic Design: Anthony Nuccio/nucciocreative

Illustrations: John Kenzie, Fan Wu, and Momoko Hasselbring

Sound Design: Curtis Hasselbring

Musicians (student resource recordings): Marco Blaauw, Justin Bland, Gabriele Cassone, Christine Chapman, Terry Everson, Anneke Scott, Brian Shaw, Crispian Steele-Perkins

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Summary

In this opening section, students will be introduced to Ragnar, the book's main character, and the Palaeolithic world in which he lives. Students will also find out how to navigate *Around the World in Twenty-One Trumpets*, and learn about its features and online resources.

Objectives

Students will:

- **Find** out how Ragnar's story begins
- **Understand** the basics of daily life for Ragnar and other hunter-gatherers 25,000 years ago
- **Discover** how we know about the past
- **Learn** how to navigate the features of *Around the World in Twenty-One Trumpets*, and how to access online resources

MEET RAGNAR, YOUR TOUR GUIDE

MEET RAGNAR, a prehistoric man who discovered how to make an amazing noise with a bison horn!

- 1 His story begins around 25,000 years ago in a place that is now called France. Ragnar lived with a group of about 50 men, women, and children. Depending on the time of year, the group moved to different places to find food and shelter.

Everyone in the group had an important job to do, and Ragnar's was to make tools. His father had shown him where to find the best stones for cutting, crushing, chipping, and carving. Ragnar put everything he found to good use. While others collected water and firewood or searched for food, Ragnar spent long hours making tools and practicing his bison horn and other trumpets he had made from bones and sticks.

Life for Ragnar would have continued this way, but one day, while the group was on the move, something extraordinary happened. One moment he was there, the next he had gone. He had disappeared without a trace, or so it seemed to his friends and family.

Ragnar had set out on an incredible adventure, through time and across the globe, in search of amazing trumpets to play. This is his remarkable story.



RAGNAR'S AMAZING SOUNDS!

Go to www.hearragnar.com and click on the sound



file that goes with each illustration. Get ready for an adventure in sound!

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Learning Activities

Students should read or listen online (www.hearragnar.com) to **Meet Ragnar, Your Tour Guide**, and answer the following questions:

- Q.** What were some of the jobs that prehistoric people would have done every day? **A.** Gathering food, collecting water and firewood.
- Q.** What was Ragnar's job? **A.** Making tools.
- Q.** Can you name some of the objects from which Ragnar made trumpets? **A.** Bones, sticks, and horns.

Ask students to read **Listen & Play Online!** Explain that learning music has always been like learning a language. Our ancestors learned how to do both by listening to others, copying, and repeating, long before anything was written down. Next, ask students to read **Learn More, Reality Check!** and **Did You Know?** and pose the question, "What is history?" Students will most likely answer that it is "stuff about the past" or something similar. Explain that history is both what happened in the past and what people have

LISTEN & PLAY ONLINE!

Go to www.practicecave.com to visit the “Practice Cave” for each chapter, where you will meet and learn from a different expert. Click on the sound file that goes with each exercise or music piece. Listen once and then play along the second time, copying what you hear. Repeat several times: the more you repeat, the better you will get! This is how people have learned throughout history, by listening, copying, and repeating.

LEARN MORE

We can never know exactly what life was like in the past, but the experts who study people (anthropologists), objects (archaeologists), and written records (historians), can help us understand a lot about our distant ancestors. Learn what the experts know in “Reality Check!” and for extra fun, learn some fascinating facts in “Did You Know?” Here’s a sample:

REALITY CHECK!

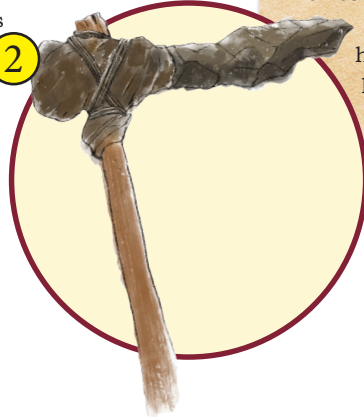
What the Experts Say About

PREHISTORIC TIMES

Just like our make-believe character Ragnar, real prehistoric people hunted animals and gathered food. Stone, wood, animal bones, and animal skins were used to make tools, weapons, clothing, and houses. People usually stayed together in groups of up to about 100, and they moved around to find food sources such as plants, fish, and other animals. As they traveled, they made their homes in caves and rock shelters, or built their dwellings from wood, bones, and animal hides. People also learned how to make fire, which allowed them to cook their food and to see in the dark. This time is known as the Paleolithic period or Old Stone Age.

DID YOU KNOW?

No one knows for sure when the first humans lived, but the Paleolithic period or Old Stone Age, which covers the first period of human history, lasted for over two million years!



Key Points

- 1 Ragnar’s story falls into the Upper Paleolithic period (c. 35,000–10,000 BCE). During this period, hunter-gatherers began to embrace art (including cave painting) and probably mythical belief.¹
- 2 Anthropologists, archaeologists and other experts have pieced together the story of hunter-gatherers who lived in the Paleolithic period or Old Stone Age, c. 2,500,000–12,000 BCE. This period was characterised by the use of stone tools.²
- 3 The tools and weapons they used included spears, bows and arrows, hand axes, harpoons and fishhooks.
- 4 Paleolithic people usually stayed together in groups, or “bands” of 50 to 100 people and they moved around to find food, often following changes in the seasons. They hunted animals, fished, and collected plants such as fruits and nuts to eat.³
- 5 Long before the Upper Paleolithic period—probably around 500,000 BCE—people had learned how to make and control fire, which allowed them to cook their food and be active in the dark.⁴

5

written about the past. Now, ask students, “what does prehistory or prehistoric mean”? Some students might answer that it is “before history”. Correct! Explain that the prefix “pre-” means “prior to” or “before” (such as preschool). But what does “before history” really mean? Explain that experts called historians use written records such as letters, diaries and documents to understand the past. Therefore, prehistory or prehistoric means, “before written records.” Given this knowledge, pose the following questions:

Q. As there are no written records in prehistory, what kinds of things do experts (such as anthropologists and archeologists) examine to help us understand what life was like in prehistory?

A. Examples might include bones, fossils, cave paintings, weapons, and stone tools.

Q. How long did the Paleolithic (or Old Stone Age) period of human history last? **A.** Around two and a half million years.

BONUS! Q. When did dinosaurs roam the planet?

A. From 250 - 66 million years ago. Humans missed them by about 64 million years!

Summary

This section introduces students to the teaching tool used in the *Brass for Beginners*® method. Students will learn about the natural trumpet, its unique place in the evolutionary history of lip-blown instruments, and how it differs from the modern trumpet. Students will become familiar with terminology related to lip-blown instruments used throughout the book and will gain a basic understanding of the notes that the natural trumpet can play.

Objectives

Students will:

- **Learn** terminology related to lip-blown instruments used in the book
- **Discover** how lip-blown instruments evolved over time: when they were first made out of metal, when/why they were bent into a “U” shape, and when valves were added
- **Identify** the basic features of the natural trumpet and learn how it differs from the modern trumpet
- **Understand** that the natural trumpet can play many notes without valves, buttons, or slides
- **Discuss** the characteristics of the notes of the harmonic series

WHAT'S A NATURAL TRUMPET?

KEY WORDS

HARMONIC SERIES or HARMONIC NOTES

All the notes a natural trumpet or horn can produce. Longer trumpets and horns can play more notes than shorter ones.

HORN

The word “horn” has a number of meanings. It can be used as a term for animal horns or shells that have been made into lip-blown instruments. These are normally used for signaling, because their sound can be heard a long way away. It can also mean a “French horn,” a coiled brass instrument you may have seen used in an orchestra.

LIP-BLOWN INSTRUMENT

Any hollow object made of natural or man-made material that sounds when a specific pitch is vibrated (buzzed) into it. Animal horns, bones, shells, and sticks as well as modern brass instruments such as trumpets, French horns, trombones, and tubas are all examples of lip-blown instruments.

NATURAL TRUMPET

A lip-blown instrument that has no valves and is twice the length of a valve trumpet. It can also be called a “baroque” trumpet.

NOTES

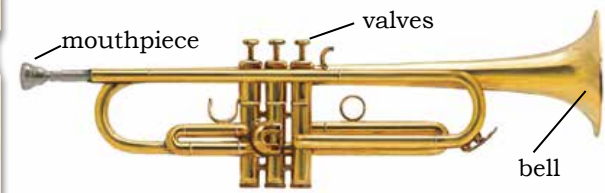
The individual sounds that make up music.

TRUMPET

A lip-blown instrument usually made from a hollow metal tube which widens into a bell at one end. Some people think the bell got its name because it resembles a church bell or hand bell. Sometimes trumpets have valves, devices which players press down with their fingers to help them change notes.

THE TRUMPET is a **lip-blown instrument**.

A lip-blown instrument is any kind of object that sounds when you vibrate, or buzz, your lips into it. The kind of **trumpet** that you see in bands and orchestras has valves and usually looks like this:



A modern valve trumpet

You can see that it is a very complicated instrument which has been made with modern tools, but it wasn't always like that. **People made lip-blown instruments using animal horns, bones, shells and sticks** long before anyone could make the instruments we know today. It wasn't until about 200 years ago that valves were invented, but our ancestors were already making simple trumpets out of metal over 4,000 years ago.

During that time, people discovered something amazing and mysterious about trumpets: the longer they are, the more **notes** they can play! So, about 600 years ago, when they figured out how to bend metal tubing into a “U” shape (without breaking it!), they were able to make VERY long trumpets, between 8 and 9 feet in length. We now call these instruments **natural trumpets**.

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Learning Activities

Students should read **Key Words** and content on SE p. 6-7, and then answer the following questions:

Q. What is a lip-blown instrument?

A. Any kind of object that sounds when you vibrate, or buzz, your lips into it.

Q. Can you name some examples of lip-blown instruments from the past? **A.**

Animal horns and shells. From the present? **A.** French horns, trombones, and trumpets.

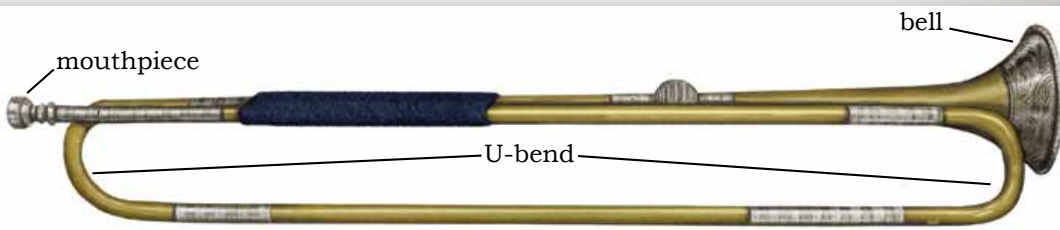
Q. How long have lip-blown instruments been made out of metal? **A.** Over 4,000 years.

Explain how trumpet makers from around 1400 CE were able to bend tubing (**Key Point** No. 4) and discuss some of the reasons they may have done so. Then ask students to turn to SE p. 8 (TE p. 16) and explain how the graphic demonstrates the number of notes each instrument can play, based on its length. Point out that the natural trumpet, with its two U-bends, is

much longer than any of the other trumpets shown, which is the reason it can play so many more notes.

Q. What are the basic parts of the natural trumpet and how is it different from the modern trumpet? **A.** It has a bell, two U-bends, tubing and a mouthpiece. It has no valves and is twice as long as a modern trumpet.

Q. When were valves added to trumpets? **A.** Around 200 years ago



A 300 year-old natural trumpet

Since a natural trumpet doesn't have any valves, or buttons to push, most people would think that it could only play one note, but a skilled trumpeter can play more than 15 notes on it. We call these notes the **Harmonic Series, or Harmonic**

Notes and they follow an interesting pattern. The lower notes sound very far apart, but as you learn to play higher up, you will discover that they start sounding closer together. There are different ways to describe these notes, but we will call them H1 (Harmonic Note 1), H2 (Harmonic Note 2), H3, etc.

As you follow Ragnar's adventures, discovering fascinating trumpets from around the world, you will need to search for these notes along the way. Finding them is like climbing a ladder into the clouds: you can't see the next rung, but if you keep reaching you will hear and feel their strong vibrations. Climb on board and travel around the world with Ragnar on a brass odyssey!



A modern plastic natural trumpet

(This is the instrument that you will learn how to play when you use this book.)

Key Points

- 1 See "Timeline of Lip-blown Instruments." (SE p. 10-11, TE p. 20-21)
- 2 Considering that lip-blown instruments have been made out of metal for over 4,000 years (see Key Point No. 3), valves are a very recent addition. Invented during the Industrial Revolution, valves made it possible to change the overall length of an instrument by rerouting the air column to tubes of different lengths. This helped to fill the gaps in the harmonic series, eventually making the trumpet a fully-chromatic instrument.⁵
- 3 Lip-blown instruments were likely first made out of metal in Mesopotamia during the Bronze Age and passed on to Egypt and other parts of the European continent through trade and war. (SE p. 10-11, TE p. 26-27)
- 4 At the turn of the 14th century, trumpet makers began to bend tubing into a "U" shape, probably to make trumpets more compact (more durable and easier to carry) and/or to increase their length (making it possible to play more notes- see TE p. 16-19). This was accomplished by first filling the tube with molten lead or pitch (a type of asphalt or tree sap). After cooling, the tube was bent into the desired shape, then heated enough to liquify and pour out the contents, leaving the bent tube hollow and intact. The first type of bent trumpet was in the shape of an "S," and from iconography, we know that many instruments of this type included a telescopic slide; this instrument is thought by most scholars to be the precursor to the trombone. Some scholars believe that the technique of bending tubing has had an uninterrupted tradition since Roman times.⁶
- 5 Technically speaking, the term "Harmonic Note" is a misnomer. (TE p. 16-17)

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Explain that slides (as used on a trombone) and valves (as used on trumpets, French horns, and tubas) help to change the notes by changing the overall length of the instrument, and that before slides and valves were added to brass instruments, the main way to change notes was to play the notes of the harmonic series.

Q. How many notes can a natural trumpet play? **A.** Over 15 notes

Q. What do we call the notes the natural trumpet plays? **A.** The notes of the

Harmonic Series, or Harmonic Notes (see **Key Point No. 5**)

Explain that the natural trumpet was used from about 1400 until the mid 1800s (even after the use of valves in about 1820), and that music by composers such as Bach, Mozart, and Beethoven, was written with this instrument in mind.

Q. For how long were natural trumpets being used before valves were added. **A.** Over 400 years

Summary

This section introduces students to some of the main lip-blown instruments of the Paleolithic, Neolithic, Bronze and Iron Ages. Students will learn about the materials from which lip-blown instruments have been made and their global distribution. Students will also learn some of the ways in which historians describe different historical eras.

Objectives

Students will:

- **Learn** some of the terminology used for the dating of historical time
- **Discover** the range of designs of some of the earliest lip-blown instruments
- **Identify** the range of materials from which lip-blown instruments have been made
- **Discuss** the concept of time across the thousands of years of mankind's existence, using the acronyms introduced in this section.

History and Historical Anachronism

History can be described as both the past and what others write about the past. Historians use primary and secondary evidence to interpret and create a convincing narrative about the past. Primary sources refer to documents/evidence produced at the time; secondary sources refer to documents produced at a later date, after the event. Merriam Webster defines anachronism as, "something (such as a word, an object, or an event) that is mistakenly placed in a time where it does not belong in a story, movie, etc." After discussing history and historical anachronism, ask students to look at the front cover of the book and ask them to identify the historical anachronism. **A. In reality, a prehistoric person wouldn't have had a trumpet made from metal, as metal wasn't in use until the Bronze Age.**

TIMELINE OF LIP-BLOWN INSTRUMENTS

10,000 BCE
3500 BCE

1 PALEOLITHIC (OLD STONE AGE)
 c. 2,500,000 – 12,000 BCE

NEOLITHIC (NEW STONE AGE)
 c. 10,000 – 2500 BCE

AFRICA: CRADLE OF HUMANKIND

2 Bone, shell, wood, gourds, and animal horns

Australian Didgeridu
?–Present

Jewish Shofar
?–Present

Mesopotamian Trumpet
3000–600 BCE

Egyptian Šnb
1500–1300 BCE

Oxus Trumpet
2200–1750 BCE

Hindu Sankh
2000 BCE–Present

Nordic Bronze Lur
1500–500 BCE

c. "circa" or approximately BCE: Before the Common Era

Terminology for the Dating of Time

Historians organize time into categories called 'periods' or 'eras.' Confusion arises not only because archaeologists use different categories/dates but also because there is overlap between periods. In addition, because agriculture and the use of metals begins at different times in different places, there is no single date for the beginning of the Neolithic, Bronze, or Iron ages. Finally, it is always worth remembering that people in the past did

not think of themselves as being part of a designated time period. To help students understand the terms "Paleolithic" and "neolithic," highlight their Greek roots: "paleo" meaning old, "neo" meaning new, and "lithic" referring to stone.

Paleolithic or 'Old Stone Age'
c. 2,500,000 - 10,000 BCE

Neolithic or 'New Stone Age'
c. 10,000 - 2,500 BCE

'Bronze Age'
c. 3,500 - 500 BCE

'Iron Age'
c. 1000 BCE - 50 CE

OWN INSTRUMENTS

2500 BCE 1500 BCE 500 BCE CE 1

3

BRONZE AGE
c. 3500–500 BCE

IRON AGE
c. 1000 BCE–CE 50

Irish Bronze Age Horn
1000–300 BCE

Puruvian Pututus
1000–600 BCE

Celtic Carnyx
200 BCE– CE 200

Han Chinese Long Horn
206 BCE– CE 220

Cup-Bell Salpinx
750–300 BCE

Etruscan Lituus
800–300 BCE

Cone-Bell Salpinx
750–300 BCE

Roman Tuba
300 BCE– CE 450

Roman Cornu
300 BCE– CE 450

Celt-Iberian Trumpet
200–100 BCE

CE: Common Era All instrument dates are approximate

Key Points

- 1 There is little to no evidence (physical or otherwise) for lip-blown instruments in the Paleolithic period. However, their prevalence in various parts of the world in the Neolithic period, and references to lip-blown instruments in the earliest examples of human writing, suggest that their use is likely connected with the human experience for as long as humanity's collective memory itself. Some scholars argue that knowledge of lip-blown instruments originated in Africa and spread with the earliest migrations of our prehistoric ancestors as early as 70,000 years ago. Others suggest later, independent origins for lip-blown instruments. (TE p. 25, **Key Point** No. 3.)
- 2 Other natural materials that have been used to fashion lip-blown instruments over the past few millennia include tree bark, seaweed, clay, bamboo, and beeswax!
- 3 From the beginning of the Bronze Age, lip-blown instruments were being fashioned from various types of metals, but it is important to note that lip-blown instruments made from natural objects have continued to be used alongside metal ones until the present day.

Commonly Used History Abbreviations

- BCE** "Before the Common Era," or before the year 1
- BC** "Before Christ," or before the year 1
- BP** "Before the Present"
- CE** "Common Era," or after the year 1. (This is often omitted when discussing modern history)
- AD** "Anno Domini" (The year of our Lord), or after the year 1

Discussing the Dating of Time

Some students find historical dates overwhelming, especially when their importance is stressed without putting them into context. Students often struggle to grasp the concept of time across hundreds or thousands of years and get confused by the use of acronyms such as BCE and CE. In short, it can be difficult for them to situate the past vis-à-vis the present. Referring to this timeline and drawing attention to ways in which lip-blown instruments relate to the time periods represented, can provide students with very helpful reference points. Be sure to explain the use of acronyms such as BCE and CE, and how these relate to the Western (Gregorian or Christian) calendar that we use today (i.e. we count the year 2018 as 2018 years from the birth of Christ).