CHAPTER 3
STUMBLING ON H2

ONE OF THE MOST IMPORTANT uses Ragnar found for his horn was hunting bison. Bison were very big and extremely dangerous, but loud sounds scared them. Ragnar and the hunters made a plan to confuse and trap the animals. They watched the movements of the bison herds for weeks. One evening, after a storm had passed, Ragnar climbed up a cliff and waited out of sight until the bison neared a mountain pass. Meanwhile, the hunters hid on the other side of the pass, their spears at the ready. As the bison approached, Ragnar took a deep breath and blew his horn as loudly as he could. In the still of the evening, the sound echoed through the valley and alarmed the bison so much that they began a furious stampede. Ragnar could feel the earth trembling as they charged. Most escaped, but Ragnar’s friends were able to cut off the stragglers, hurling their spears at them. They were overjoyed! The hunt would provide food for weeks and plenty of materials to make clothing, tools, and shelter.

On the trail home, Ragnar played triumphant, rhythmic music on his horn. This kept the hunters in good spirits. It also helped them move together as they carried their heavy load.

KEY WORDS

MELODIC
Pleasant, song-like sounds.

RHYTHMIC
A steady repeated pattern of sound, like a drum beat.

Objectives

Students will:
• Understand why Ragnar’s bison horn was important to the well-being of his group
• Learn how to play loudly
• Consider how and why the stick trumpet could play two notes
• Experiment with the variables associated with navigating the harmonic series, they will learn how to articulate in both a detached and connected (staccato and legato) manner, enabling them to play song-like and march-like music.

Learning Activities

After reading, or listening online to Chapter 3: Stumbling on H2 (or the accompanying soundscape,”On the Hunt”), ask students the following:

Q. How did Ragnar’s horn make the bison stampede? A. Loud sounds scared them.

Q. How do you make a loud sound on the trumpet? A. Blow faster or more air.

Demonstrate making a loud sound. First blow air alone, and then into the trumpet. Ask students to repeat- air alone, then trumpet. Is their sound loud enough to frighten a herd of bison? Ask for volunteers to play loud sounds. It is preferable to have students think about blowing air faster as opposed to harder.

Discuss the key word rhythmic as it relates to Ragnar’s story. Ask students to imagine carrying a heavy load through a forest, having them walk together around the classroom playing their trumpets. Use this activity to help prepare students to improvise music for marching home on p. 25 (TE p. 37). Ask students to think of other examples of music that is played while people move together. A. A march or music for a procession.

Q. How did Ragnar get idea that the stick could be made into a trumpet? A. Because it was hollow, like a bone or horn.

Summary

In Chapter 3, students will learn about the use of early musical instruments for hunting and think about possible origins of rhythmic and melodic music. They will discuss the ability of lip-blown instruments of increasing length to play more notes (overtones) and learn about the harmonic series of the natural trumpet. As students begin to experiment with variables associated with navigating the harmonic series, they will learn how to articulate in both a detached and connected (staccato and legato) manner, enabling them to play song-like and march-like music.

Online Resources: www.practicecave.com/resources

Interdisciplinary Activities: practicecave.com/resources

End Notes: p. 147
Many modern instruments originated from objects used in hunting. Examples include:

**Strings:** The string of a hunting bow can be plucked or struck to produce a musical effect, while the bull-roarer, a cord tied to a flat piece of wood used to trip fleeing animals, can be whirled around the user’s head to produce a sustained sound.

**Woodwinds:** Sharp edges of broken bones or chipped stones can produce whistling, flute-like sounds. Blades of grass held between the thumbs and blown were used to call deer, giving rise to single and double reed instruments.

**Percussion and Brass:** Objects capable of producing loud sounds when shaken, struck, scraped, or blown, can be used to startle game, or to signal over great distances.

Humans have a unique ability to synchronize their movements with a sense of pulse, beat, or rhythm. Although experts can’t explain why this is, they agree that our ancestors used rhythm to coordinate their activities in both work and social environments.15

Traditionally, the Australian *didjeridu* was made from Eucalyptus branches bored out by termites. (TE p. 50-53)

Although several variables determine the number of overtones that can be produced on an instrument of a given length, generally speaking, the longer the tube, the greater the number of available overtones. (TE p. 8-9)

Not long into the journey, Ragnar stumbled over a small tree branch lying on the path. As he moved the branch out of the way, he noticed insects falling out of the end. The insects had eaten all the way through the inside, making a hollow center. Ragnar took the branch home with him, and while his friends were preparing a feast to celebrate the hunt, he got to work. Using a sharp stone, he carved the end to make it comfortable for his lips and gave it a blow: DAAAAAAAAAAAAAAAAAAAA!

Then he blew his air harder to see how loud he could make it, and suddenly the pitch went up to a much higher sound:

He couldn’t believe it! This stick trumpet could play two different notes. Ragnar didn’t know it, but he had stumbled on the second note of the harmonic series, H2!

Daaaaaaaaa…Daaaaa... Daa ddaa ddaa ddaa... That night after the feast, Ragnar played melodic music on his new stick trumpet. Everyone swayed and sang along with the joyful sounds. It was a perfect way to end the day.

**REALITY CHECK!**

What the Experts Say About

**PREHISTORIC HUNTING**

Paleolithic people across the globe hunted many different animals including buffalo, horses, bison, wild goats, and deer. Hunting took a great deal of time and patience. Sometimes animals were watched, and then followed, for many miles before they were caught. Experts believe that Paleolithic people used various noise-making objects to call, startle, or confuse their prey.

Learning Activities, cont.

Q. How did Ragnar discover that the stick trumpet could play two notes? A. He blew harder to see how loud he could play. Ask students to turn to p. 8-9, “It's All Greek to Me!” and point out that longer trumpets play more notes. (See Key Points No.4 above)

Discuss the key word melodic as it relates to Ragnar’s story, and listen online to the accompanying soundscape. Ask students how melodic music is different from marching music. A. Melodic music is song-like and smooth, with longer and softer sounds.

Read Did You Know? and ask students how prehistoric man might have discovered that a conch shell could be made into a trumpet. Explain that they probably ate the shellfish they found inside. A. They could have broken off the end and tried to blow the shellfish out.15

Read Reality Check! and explain that most musical instruments had their origins in hunting. Ask students if they can think of any examples of noise-making devices used in hunting and discuss some of the examples listed in Key Points No.1 above. Ask students to turn to SE p. 4 (TE p. 4). Point out that our prehistoric ancestors had to find their food daily in order to stay alive, and that many of their activities would have revolved around collecting food and hunting, which is why we refer to them as "hunter-gatherers."