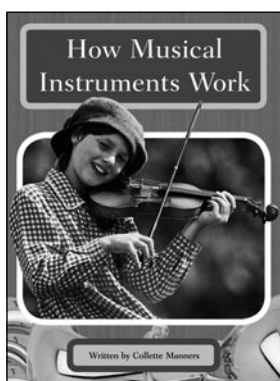


How Musical Instruments Work

Text Type		Lower 1500–1800 words RA 8.8–9.2	Middle 1900–2400 words RA 9.3–9.7	Upper 2500–3000 words RA 9.8–10.2
Fact	Procedure	Build Your Own Easel	Making a Cheesecake	So You Want to Be a Cartoonist?
	Recount (Explanation)	Ten Milestones in Space	Rail Accidents	Three Terrible Hurricanes
	Information Report (Description)	Mythical Creatures	The World of Caves	Top Towers
	Information Report (Explanation)	A Weather Counting Book	Two Polar Regions	Seven Ancient Wonders
	Interview	Food Science FAQs	Hobbies	Fireflies and Glow-worms
	Biography	Ned Kelly	Mother Teresa: Saint of the Gutters	Edmund Hillary
	Explanation	How Forensic Scientists Work	How Musical Instruments Work	How Solar Energy Works
	Procedural Recount	How I Learned to Be a Nipper	How I Trained for the Junior Triathlon	How I Learned to Snowboard
Fiction	Realistic Fiction (Out of School)	Junkyard Treasure	Outback Betty's	Harry's Dream
	Realistic Fiction (In School)	On the Case	The Real-Life School Project	Ms McMahon
	Historical Fiction	The Wooden Horse Trick	Cheung Saves the Day	The Slave
	Fantasy	The Cloud Washerwoman	Sammy Stevens Sings	Finbar and the Long Trek
	Science Fiction	A New Source of Power	The Intergalactic Race	Eighth Moon
	Humour	The Upstairs Dragon	My Rhyming Grandpa	Catty Bimbar and the New-Age Pirates
	Mystery	Mystery Under the Big Top	The Mystery of Autoplane 500	The Mystery of the Missing Food
	Folktales	The Wicked Witch of the Singing Sands	Gulnara	Momotaro, Little Peachling

We have designed these lesson plans so that you can have the plan in front of you as you teach, along with a copy of the book. Suggestions for teaching have been divided into questions and discussion that you may have with students before, during, and after they read. You may prefer to explore the meaning and the language in more detail before students read. Your decisions will depend on the gap between students' current knowledge and the content, vocabulary, and language of the book they are about to read. The more information students have up front, the easier it will be for them to read the text.



HOW MUSICAL INSTRUMENTS WORK

Middle level fact

Text type: Explanation

Reading age 9.3

Word count 2,084

Before Reading

Activate prior knowledge by asking students what an explanation is. Write the word on the board. Ask students to find the part of the word that explanation is built from. Circle or underline explain and draw an arrow from this word to the word explain. Tell students that if they can identify the base part of words, it is easier to work out what those words mean.

What does the word *explain* mean? Invite discussion. Tell students that it means to *give clear information about a subject, which*

enables someone else to understand it.

Ask students to take turns explaining to a partner how to draw a circle or rule a line. Ask students what is important about giving an explanation. Assist them to understand that an explanation should be clear, concise and accurate.

COVER

Before Reading

Read the title and examine the cover photograph. Discuss what the book may be about. *What does this image tell you? Do you think this book is only about violins? What tells you that it isn't?*

Find out who plays an instrument. Discuss the instruments students play and ask them to describe whether their instrument is a stringed, wind, or percussion instrument.

Read the blurb. What additional information does this give you? What do you expect to find inside this book? Guide the discussion to build understandings that this book will provide information about how different musical instruments make their distinct sounds.

What are stringed instruments?

What are wind instruments?

What are percussion instruments?

What do you expect to learn from this book?

What is the purpose of this book?

CONTENTS PAGE

Open the book. Tell me what you know about this page. Discuss features of the contents page. *Where would I go to learn about How Sound Works?* Students should quickly respond with the page number. Repeat for other pages. Encourage quick responses. *What do you know about information books?* Students should indicate that the reader can choose where they'd like to start.

Students should also mention the terms *glossary* and *index*. Ask students to explain what each term means. Visit each of these pages to clarify that the glossary provides meanings for new or tricky words about the topic, and the index provides the page numbers to help the reader locate particular things in the book.

Revisit the contents page. Discuss the term *introduction*. *What does this mean?* Lead students to acknowledge that an introduction will provide background information about the topic that will help us read the book.

INTRODUCTION

During Reading

What do you notice first about this page? Guide students to discuss the information contained in the visual imagery. Examine the comparison chart and discuss how sounds are produced by different instruments. Discuss the term *striking*. Read the caption for the photograph on page 5.

What do you notice when you look at the text? Students should identify the bold text on the words, *percussion* and *mouthpiece*. *What does this tell us?* Students identify that these words are explained in the glossary. Ask students to predict the meanings of these words and then instruct them to navigate

quickly to the glossary to view these terms.

Read the introduction and find out some general information about musical instruments. Take note of what makes an instrument belong to a particular group and what instruments within groups have in common.

Find out what a tone is and be ready to discuss what tones do.

After Reading

What do you know about musical instruments? Invite discussion about the three groups of instruments. *What are the three groups? What do instruments within each of the groups have in common?*

Brainstorm instruments that belong in each group.

What does the word tone mean? What is special about tones? Students should indicate that each tone sounds different. *Why are tones important? What do they make?* Students should indicate that tones make the patterns of sound that make music sound pleasant to listen to.

HOW SOUND WORKS

During Reading

Read the title. What do you notice about page 7? Discuss this diagram. Tell students that the diagram is another way to explain the information that is on page 6.

Prompt students to notice that the word vibration is in the glossary. Students should identify that the word *frequency* will also be in the glossary. Ask students to predict the meanings of these words and then instruct them to navigate quickly to the glossary to view these terms. Quickly visit page 8 to allow students to notice that they need to check the

word *pitch* in the glossary also.

As you read about How Sound Works, take some notes for the discussion. Find out how loud a sound needs to be for us to hear it, and be ready to explain how changes in sound occur. Go back to the diagram on page 7 to help you understand. Find out what changes the pitch of a sound.

After Reading

What did you learn about how sound works? Invite students to explain. Prompt them to use the diagram to support their understandings. Discuss the diagram. Where should we begin reading? What tells us the direction to read? Read the diagram with students. What is air pressure? What is vibration? Invite responses.

What do you know about sounds that are loud? What do you know about sounds that are soft?

What is a frequency? How is frequency measured? What is the range of frequency that we need to hear sounds? What does the Hertz number mean?

What does the word pitch refer to? What will a faster vibration mean? What will a slower vibration mean?

What does page 9 tell us?

HOW STRINGED INSTRUMENTS WORK

During Reading

Read the title. What do you expect to learn about on these pages? Invite prediction. Discuss the photo and caption on page 10. Did you know that the piano was a stringed instrument? Where are its strings? Discuss page 11. What are other stringed instruments?

Walk through pages 13 to 15 and discuss the images. Discuss any unusual words. Do you

think we will find out what some of these words mean as we read?

As you read pages 10 to 15, take note of how stringed instruments work and write down any of the tricky words. Predict the meanings of these words based on the words around them.

After Reading

How do stringed instruments work? What do you do to the strings to make them vibrate? What factors may vary the sounds? What do thicker strings do? What do tighter strings do? What do longer strings do?

What are some other stringed instruments?

What are the parts of an acoustic guitar? Direct students to page 13 to find out. How does it work? Support students as they describe how an acoustic guitar makes sound.

Discuss the terms amplify, frets, tuning pegs and tune. Ask students to share their predictions of these words.

HOW WIND INSTRUMENTS WORK

During Reading

Read the title and look at the illustrations. What can you tell about wind instruments? Can you think of the names of some wind instruments?

What does the caption tell you about wind instruments? Support students to infer that there must be more than one kind of wind instrument.

What does the illustration on page 17 show you?

What else do you notice on these pages? Alert students to the glossary word bore. Check the meaning of this word in the glossary.

Ask students to walk through pages 18 to 25,

look at the photos and read the captions. Quickly discuss what students have observed.

Read pages 18 to 25. Check any bold words in the glossary. As you are reading, take note of what makes a wind instrument work. Note the different kinds of wind instruments, and how they are the same and different from one another.

After Reading

Discuss how a wind instrument works. *What are the names of some wind instruments? Did you discover that there were two kinds of wind instruments? What are they? How does a wind instrument work?*

What shape are most wind instruments? Is the size and shape important? Why? What is the bell? What does it look like? How does the bell affect the sound?

What are the different types of mouthpieces called? What does the reed do? Do all woodwind instruments have reeds? What affects the sound the instruments make? Direct students to page 19 to check.

What are the names of some brass instruments? What is unusual about the didgeridoo and the saxophone?

HOW PERCUSSION INSTRUMENTS WORK

During Reading

Look at the photos and read the captions. What do you think percussion instruments are? How do percussion instruments look different from wind, brass, and stringed instruments? How do they make sound?

Read pages 26 to 29. As you read take note of how a percussion instrument works. Jot down the percussion instruments named in

the book and underline any that you don't know. Find out whether percussion are the more complex instruments or the simplest.

Be ready to explain how a drum works.

After Reading

What are some of the percussion instruments named in the book? Which of these instruments do you know? Ask students to describe how they are look and sound. What do you do to play a percussion instrument? Prompt students to the word *strike*.

Discuss the instruments that students do not know.

How does a drum work? What is the skin usually made from? How do you change the pitch? How else can the pitch be changed? If I wanted a lower sound, what could I do?

What sort of musical instrument do you think looks the most fun or interesting? Why?

⬆️ CODE BREAKER

Explain that adding endings to a base word can change the type of word it is. For example, you can change a word from a verb, or doing word, into a noun, or naming word, by adding -ion or -tion. For example, explain – explanation.

Discuss how to change the words and what they mean as a verb and as a noun:

vibrate – vibration

percuss – percussion

Ask students to change these verbs to nouns, by adding -ion.

intersect

act

These are like the word explain. They need to add -tion.

create

attend

🗉 MEANING MAKER

What sorts of things could you do if you play a musical instrument? Do some people make a job out of playing their instrument? Who? Brainstorm all the people you can think of who play their instrument for money. List them on the board.

What about people you haven't heard of, people not as famous as those you know. What other jobs exist for people who play instruments? Support students to understand that people play in restaurants, on cruise ships, in local bands, in shopping centres, etc. Discuss that some people teach others to play instruments and get paid for this service.

Support students to generalize that sometimes things people do as a hobby or for fun can be a rewarding and enjoyable career.

📍 TEXT USER

Direct students to page 7 of the book. Discuss the diagram *How Sound Works*. *Why do you think the author showed this information in this way? Discuss students' responses. What parts of this diagram make it easy to understand? What makes it easy for us to follow the direction?* Discuss that the directional flow is easy to follow, the single sentence explanation of each step is clear and uncluttered, and there is lots of space around the outside so that our eyes can focus on the information at the centre.

Do you think this was done this way on purpose? What was the author trying to help us to understand? The author wrote about how sound works on page 6 also. Why do you think it is in the book a second way? Discuss.

🗉 TEXT CRITIC

When you are reading, it is important to think about whether the information presented is true and accurate. *Do you think the author of this book is a musician or a teacher of music? Would that make her knowledgeable enough to write this book? Discuss. What if the author is not a musician or a teacher of music? How would you feel about the information in this book?*

If you were writing a book like this, where could you go to get the information you need? How could you check that the information you have is accurate? Discuss. Who could you talk to about the things in this book to check that they are accurate? Think of people who know about instruments.

USING MULTIPLE INTELLIGENCES

Naturalist, visual-spatial, musical

Group students in pairs or small groups.

Design: three new instruments that will be made of completely natural materials. One instrument must be percussion, one stringed and one wind. Make plans about what you will use to make them and what the instruments will be. (N, P)

Sketch: and name each instrument. Add labels to show the parts of your instruments. (S)

Construct: your instruments. (N, B)

Write: some tunes to play with your instruments. (M)

MULTIPLE INTELLIGENCES

The theory of multiple intelligences was developed by Howard Gardner, a professor of education at Harvard University. Howard Gardner's theory suggests that the current view of intelligence, as measured by IQ tests, is far too limited and discriminates against students who think in different ways. He proposes taking a broader perspective and has identified eight different intelligences. These are:

- verbal-linguistic intelligence – word smart
- logical-mathematical intelligence – number/reasoning smart
- visual-spatial intelligence – picture smart
- bodily-kinaesthetic intelligence – body smart
- musical-rhythmic intelligence – music smart
- interpersonal intelligence – people smart
- intrapersonal intelligence – self smart
- naturalist intelligence – nature smart

Multiple intelligences have enormous potential as a tool in furthering reading and language development. Traditionally, the teaching of language and reading has focused mainly on two intelligences: logical-mathematical and verbal-linguistic. This means that many students who possess different intelligences do not receive the necessary opportunities, encouragement, instruction, or reinforcement to succeed with reading as well as they might.

How Musical Instruments Work

Name _____

Before you read each chapter, jot down what you already know. After reading, add notes about the new things you have learned. As you read each section, write any new words and their meanings at the bottom.

I already know ...	I have learned ...
How sound works	How sound works
How stringed instruments work	How stringed instruments work
How wind instruments work	How wind instruments work
How percussion instruments work	How percussion instruments work

New words and their meanings



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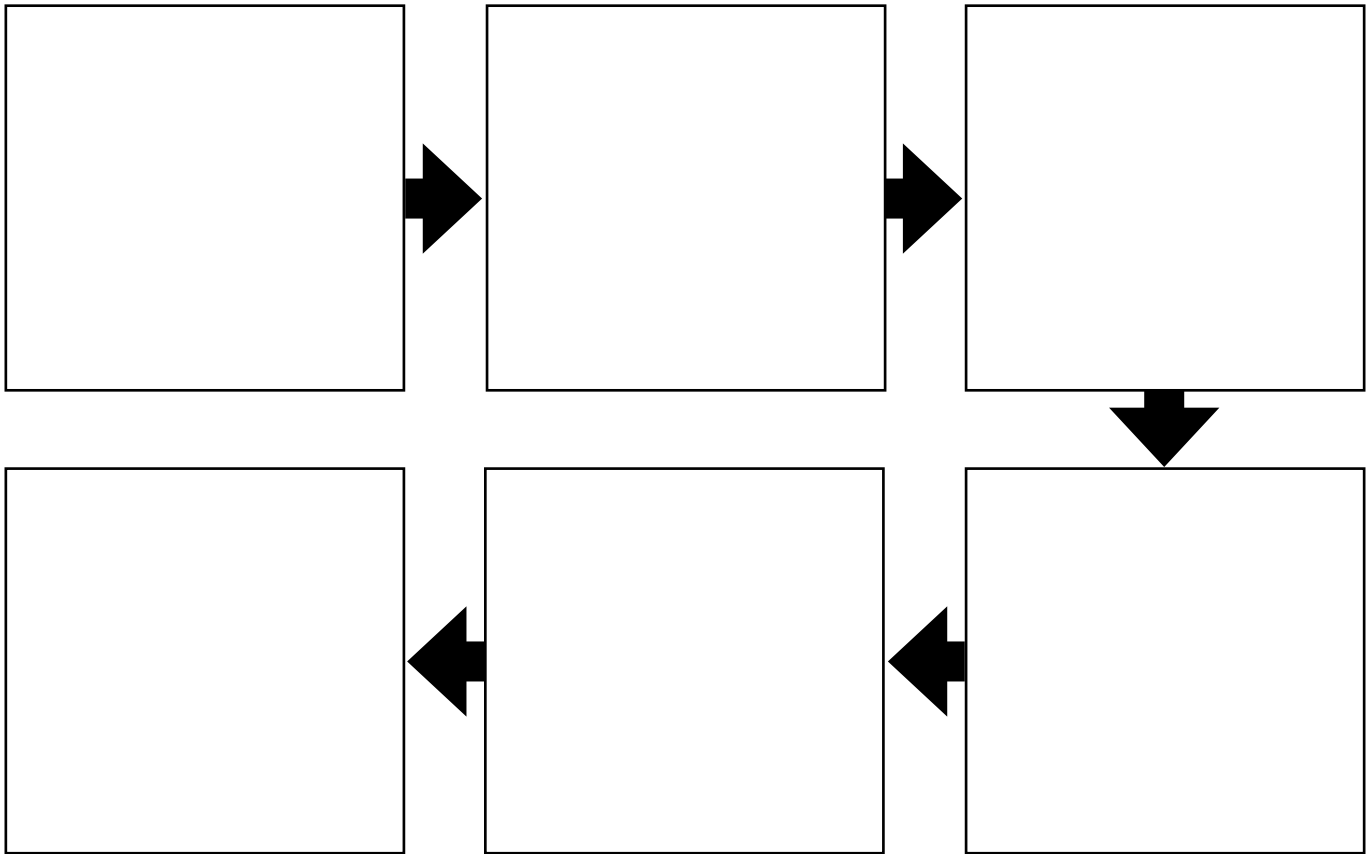


How Musical Instruments Work

Name _____

Multiple Intelligences (naturalist, visual-spatial)

Think of how you would make a drum using all natural materials. Use the book to check the features of a drum. Draw each step in order.



Materials I used:

How I made it:



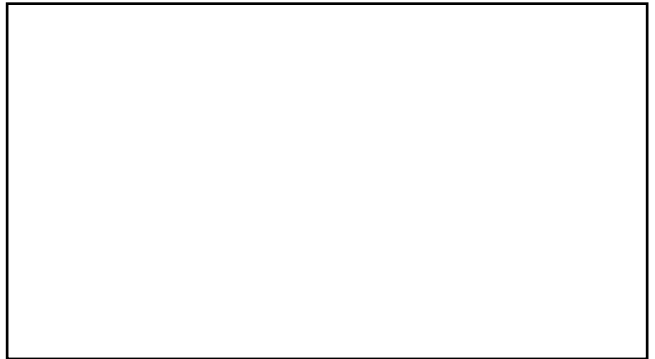
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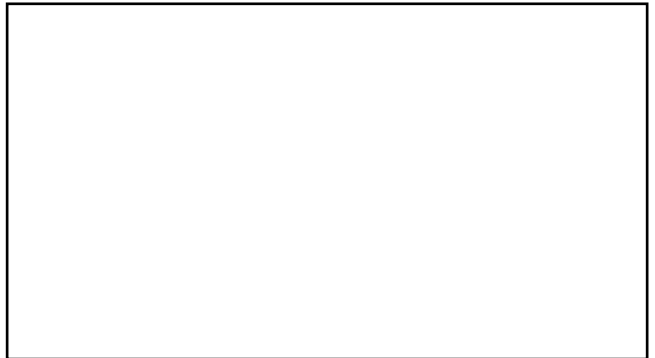
How Musical Instruments Work

Name _____

Which stringed, wind, and percussion instrument do you think looks the most fun or interesting to play? Draw the instrument and explain why you think it looks the most fun or interesting.







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How Musical Instruments Work

Name _____

Use the words in the box to help you fill in the missing words. Use your book to check.

sounds	wind	mouthpiece	sound	vibration	pitch	Hertz
frequency	tones	string	percussion	vibration	struck	wind

1. Musical instruments work in different ways to produce _____ .
2. The basic groups are _____ , _____ , and _____ .
3. Wind instruments require the movement of air into or over a _____ to make them work.
4. Musical instruments make sounds called _____ .
5. To understand how musical instruments work, you need to know how _____ works.
6. Sound works by _____ .
7. To hear a sound, it must be within a certain range of _____ .
8. The _____ number means the number of vibrations of the sound per second.
9. How quickly the vibration takes place makes the _____ .
10. Percussion instruments work when _____ .
11. Stringed instruments work by _____ .
12. Movement of air is how _____ instruments work.

Circle the syllables in these words:

lute

guitar

violin

trumpet

sitar

banjo

harp

bassoon

clarinet

bugle

organ

didgeridoo

tambourine

bell

drum

glockenspiel



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How Musical Instruments Work

Name _____

Use the book to check what type of instrument each of these is, and how sound is produced. Complete the table.

Instrument	Type of Instrument	How Sound is Produced
<i>Drum</i>	<i>percussion</i>	<i>striking</i>
Banjo		
Bassoon		
Bell		
Bugle		
Bull-roarer		
Didgeridoo		
Electric guitar		
Flute		
French horn		
Glockenspiel		
Harp		
Lute		
Organ		
Saxophone		
Sitar		
Tambourine		
Triangle		
Trumpet		
Violin		
Whistle		
Xylophone		



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How Musical Instruments Work

Name _____

Sometimes an explanation is easy to give, and other times it is tricky. Finding the right words to make your information clear is important. Write a clear explanation of how to do these things.

Wash your hair

Tie up shoelaces



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