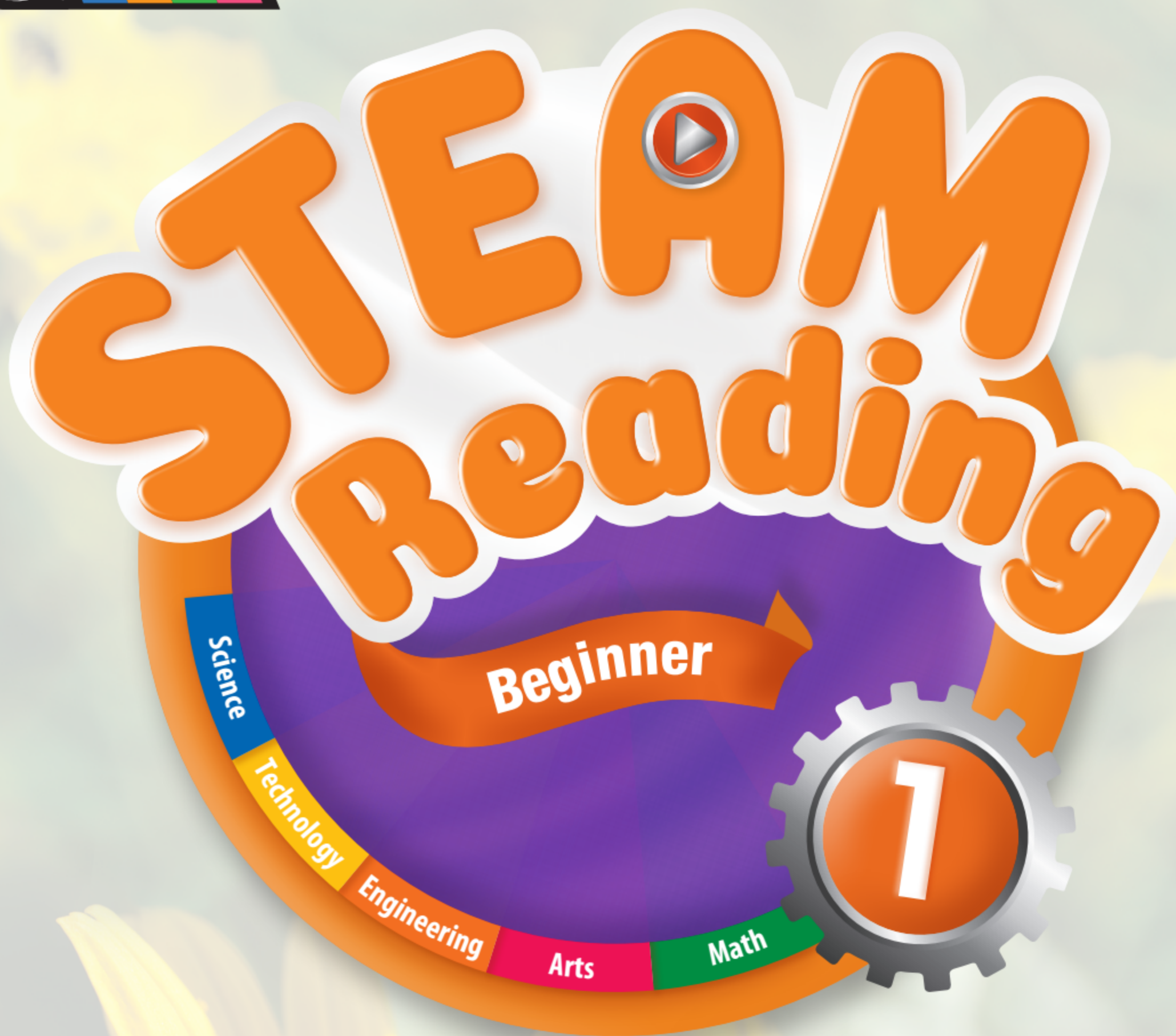


- ★ Beginner
- Elementary
- High Elementary



Matthew Broadhurst
Virginia Marconi



Matthew Broadhurst
Virginia Marconi

1

2

3

4

5



KEY WORDS

A Look, listen, and repeat. 01



n. metal



n. wood



n. cork



n. rubber



n. leather



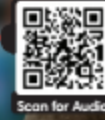
n. string

B Listen and number the words. 02

8

I will learn... about the properties* of different materials.

WHAT'S IN A BASEBALL?



Scan for Audio

WARM-UP

What materials can you name?

READING

Listen and read. 03



Scan for Video

Do you like baseball? Do you play it?

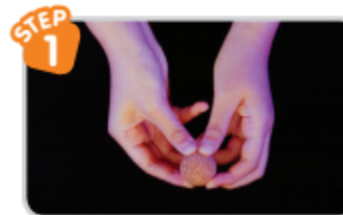
What do you need to play it?

You need a bat and a ball.

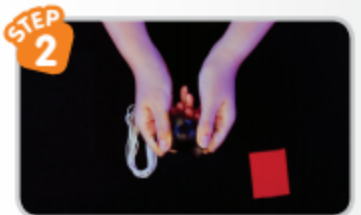
Baseball bats are made of **metal** or **wood**.

Baseballs are made of **cork**, **rubber**, and **leather**.

Let's see how to make a baseball.



Use a cork for the center of the baseball.



Cover the cork with black rubber and wrap it again with red rubber.

1 STEAM

Units are grouped together in pairs. Each pair of units has lessons on the same subject. Every unit focuses on one or more aspects of STEAM (Science, Technology, Engineering, Arts, Math).

2 I WILL LEARN...

The academic objective of the unit is introduced to get students thinking.

3 QR CODES

Scan the audio QR CODE to listen to the key words and reading passages. In the experiment units, scan the video QR CODE to watch a video of a real experiment.



Video Experiments

Live action videos take students step-by-step through all science experiments. This visual aid enhances their learning experience and makes the topic come alive.





Wrap the red rubber with different kinds of **string**.

Wrap the outer part with two pieces of leather.

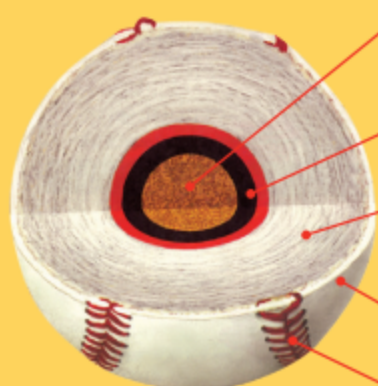
Sew the leather with red thread.

Why is a baseball made of cork, rubber, and leather?

Each material has a different use.



Materials have different properties. Cork is hard. Leather and rubber are flexible*. Rubber bounces*.



Inside a baseball

Cork

When you press it, it decreases* in size and then returns to the original size.

Rubber

It bends easily and returns to its original shape.

String

It protects the inside and prevents* the ball from popping.

Leather

It is very strong, so it can handle strong shocks.

Red Thread

It connects the pieces of leather. It's really tough.

C Circle the key words in the reading.

D Read and choose.

1. I am brown and come from a tree. What am I?

metal wood

2. You use me to tie or sew things. What am I?

rubber string

4 KEY WORDS

Every unit introduces new KEY WORDS that are necessary to understand the unit's topic. All key words are found in the READING and are illustrated with a photograph.

5 READING

Each READING is an introduction to the topic of the unit. The first unit in a pair introduces the subject through an experiment. The experiment is illustrated and easy to follow. The second unit features an engaging short story on the same topic.

6 AHA! I SEE!

This section goes into further detail on the concepts introduced in the READING.

7 WORDS WITH AN ASTERISK (*)

Difficult words in the unit are marked with an asterisk (*) and are explained in a wordlist at the back of the book.

8 SHORT ACTIVITIES

Short activities focus attention on the KEY WORDS and check understanding.

CHECK YOUR UNDERSTANDING

This section features a range of activities to check both reading comprehension and understanding of the unit vocabulary.

STEAM PROJECT



The STEAM PROJECT ends the unit with a fun and interactive project that encourages individual creativity as well as collaboration. Project types include experiments, math problems, and arts & crafts. Experimental projects have a video available via QR code. Further explanation for certain projects can be found in the PROJECT REFERENCE at the end of the book.

CHECK YOUR UNDERSTANDING





A Choose the correct answers.

- MAIN IDEA** 1. What is the main purpose of this experiment?
a. To see sound vibrations
b. To turn on the volume
c. To make sprinkles dance
- DETAIL** 2. Put the sprinkles in the zipper bag _____.
a. not to let them fall into the bowl
b. to see how sound waves make them move
c. to see the vibrations shake the bowl
- DETAIL** 3. What do sound vibrations NOT do?
a. Make sounds b. Make the sprinkles move c. See sounds

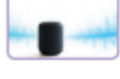





B Look, read, and check.

1.  ☐ a. Put sprinkles in a bag and seal it.
☐ b. Put sprinkles in a bowl and wrap it in plastic.
2.  ☐ a. Vibrations make sounds.
☐ b. Vibrations make volume.

C Number the pictures in the correct order.




-    
- Cover the bowl with plastic wrap. Put the speaker in a bowl. Turn on the music. Put the bag with sprinkles on top of the bowl.

D Look, match, and write.

1.  • zipper bag • 4. 
2.  • volume • 5. 
3.  • wave • 6. 
- speaker •
• vibration •

STEAM PROJECT SEE SOUND CHALLENGE

To do this experiment*, you need:

 tissue paper  a piece of string  a speaker

STEP 1 a. Tie a piece of string to some tissue paper.
b. Hold the string so the tissue paper is in front of the speaker.
c. Turn on the music and watch the tissue paper.

STEP 2 What happens to the tissue paper when you play...
1. loud music? _____
2. soft music? _____

CHALLENGE Why do you think this happens? Talk with your friends.

Go to page 75 to see the Project Reference. 27

PROJECT REFERENCE

1 UTILITY CHART

Materials have different properties. Here are some materials:

Material	Properties	Common uses
 metal	strong and waterproof	car, paperclip, knife, and fork
 wood	strong, natural, and usually heavy	table, chair, and door
 brick	strong and heavy	wall and bridge
 paper	flexible and light	box, packaging, book, and toilet paper
 plastic	strong, light, and waterproof	toy and bottle
 glass	waterproof, transparent, and hard	window and glassware

5 SEE SOUND CHALLENGE

This is a simple experiment that requires very little setup and only three materials.



- STEP** a. Tie a piece of string to some tissue paper and hold the string so the tissue paper is in front of the speaker.
b. Turn on the music and see what happens to the tissue paper.
c. Try different types of music at different volumes and see if there's any change to the paper.

The tissue should move when the music is played since the sound waves are hitting it as they leave the speaker.

PROJECT REFERENCE

PROJECT REFERENCE pages go into further detail of the concepts behind the project.

WORKBOOK

VOCABULARY PRACTICE

This checks students' understanding of the key words introduced in the Student Book unit.

SENTENCE PRACTICE

This is an unscramble activity featuring sentences taken from the unit reading.





15 CARS OF THE FUTURE

VOCABULARY PRACTICE

A Write the letters for each word.

- | | | | | | |
|----|----|------|-----|------|----|
| ne | ur | ngin | lea | atte | ui |
|----|----|------|-----|------|----|
-  b _ _ _ _ _ ry
 -  gasoli _ _ _
 -  e _ _ _ _ _ e
 -  b _ _ _ _ n
 -  q _ _ _ _ et
 -  c _ _ _ _ n

B Look at the pictures and complete the sentences.

- Those children are very noisy! Please tell them to be  q _ _ _ _ _ !
- "Is the bathroom  c _ _ _ _ _ ?" "Yes, Sally cleaned it."
- "Does an electric car burn  g _ _ _ _ _ ?" "No, it doesn't."
- A car needs a  b _ _ _ _ _ to run.

32

SENTENCE PRACTICE

Unscramble and complete the sentences.

- cars / use / electric
→ _ _ _ _ _ a battery.
- are / good / they / for Earth
→ Because of this, _ _ _ _ _ .
- makes / cars / electric
→ Who _ _ _ _ _ ?
- car / engineers / electric cars / electric / make
→ _ _ _ _ _ cleaner.
- be an / engineer / electric car / can
→ You _ _ _ _ _ .

SUMMARY

Complete the summary. One word is not used.

battery burn clean engine gasoline quiet

Cars can be gas or electric. An electric car and a gas car need a

- _ _ _ _ _ to run. But an electric car doesn't 2. _ _ _ _ _ .
- _ _ _ _ _ . A gas car is dirty, but an electric car is 4. _ _ _ _ _ , so

it's good for Earth. Also, an electric car is quiet. Its 5. _ _ _ _ _ isn't noisy.

33

SUMMARY

This is a recap of the unit's reading passage. Students are able to check their understanding of the ideas introduced in the unit.

TABLE OF CONTENTS

UNIT / PAGE	STEAM	DETAILS	
1 Page 8	S	Title	WHAT'S IN A BASEBALL? / WC: 61 ▶
	T	Academic Objective	Learn about properties of different materials
	E	Vocabulary	metal, wood, cork, rubber, leather, string
	A	STEAM Project	Utility Chart
	M		21st Century Skills: Critical Thinking, Creativity, Communication, Collaboration
2 Page 12	S	Title	BO'S HOUSE / WC: 69
	T	Academic Objective	Learn about the best materials to use to build a house
	E	Vocabulary	light, fold, safe, armor, brick, weather
	A	STEAM Project	Design Your Own Pencil Case
	M		21st Century Skills: Critical Thinking, Creativity, Communication
3 Page 16	S	Title	SOLID SHAPES / WC: 69 ▶
	T	Academic Objective	Learn about shape and volume
	E	Vocabulary	long, round, square, flat, shape, volume (the amount of space)
	A	STEAM Project	Find Ten Materials
	M		21st Century Skills: Critical Thinking, Communication
4 Page 20	S	Title	SOLID OR LIQUID? / WC: 76
	T	Academic Objective	Learn about solids and liquids
	E	Vocabulary	sand, box, rectangle, liquid, grain, solid
	A	STEAM Project	Find the Code
	M		21st Century Skills: Critical Thinking
5 Page 24	S	Title	DANCING SOUNDS / WC: 51 ▶
	T	Academic Objective	Learn about sound vibrations
	E	Vocabulary	speaker, sprinkles, zipper bag, volume (the level of sound), vibration, wave
	A	STEAM Project	See Sound Challenge ▶
	M		21st Century Skills: Communication, Collaboration
6 Page 28	S	Title	BUZZING BEES / WC: 70
	T	Academic Objective	Learn about movement and sound
	E	Vocabulary	bee, fly, buzz, wing, fast, arm
	A	STEAM Project	How to Make a String Phone ▶
	M		21st Century Skills: Critical Thinking, Communication, Collaboration
7 Page 32	S	Title	JUICY CUPS / WC: 60 ▶
	T	Academic Objective	Learn about characteristics of liquids
	E	Vocabulary	bottle, juice, pour, see-through, mark, height
	A	STEAM Project	Who Gets What?
	M		21st Century Skills: Critical Thinking
8 Page 36	S	Title	SHOPPING FOR MILK / WC: 71
	T	Academic Objective	Learn more about characteristics of liquids
	E	Vocabulary	go shopping, milk, carton, amount, cute, cow
	A	STEAM Project	Make a Water Purifier ▶
	M		21st Century Skills: Creativity, Critical Thinking

UNIT / PAGE	STEAM	DETAILS	
9 Page 40	S T E A M	Title	HAVING FUN WITH MAGNETS / WC: 59 ▶
		Academic Objective	Learn about magnets and magnetism
		Vocabulary	stick, magnet, button, paper clip, pin, chopstick
		STEAM Project	Magnetic Moving Picture
			21st Century Skills: Creativity, Critical Thinking
10 Page 44	S T E A M	Title	MY FAVORITE HAIRPIN / WC: 60
		Academic Objective	Learn more about magnets and magnetism
		Vocabulary	beach, have fun, wrong, favorite, hairpin, find
		STEAM Project	Magnet Maze
			21st Century Skills: Creativity, Collaboration, Communication
11 Page 48	S T E A M	Title	MAKING SCALES / WC: 63 ▶
		Academic Objective	Learn about weight and mass
		Vocabulary	weigh, scale, pants hanger, choose, both, heavy
		STEAM Project	Solve a Problem
			21st Century Skills: Critical Thinking, Collaboration
12 Page 52	S T E A M	Title	DIFFERENT KINDS OF SCALES / WC: 78
		Academic Objective	Learn about scales
		Vocabulary	flour, cake, check, bathroom, kitchen, hospital
		STEAM Project	Does Air Have Weight? ▶
			21st Century Skills: Critical Thinking
13 Page 56	S T E A M	Title	FRUIT BOATS / WC: 59 ▶
		Academic Objective	Learn about sinking and floating
		Vocabulary	boat, half, sail, sink, float, density
		STEAM Project	Sink or Float Challenge ▶
			21st Century Skills: Critical Thinking, Creativity
14 Page 60	S T E A M	Title	THE FARMER'S SECRET / WC: 72
		Academic Objective	Learn about density
		Vocabulary	grow, rice, secret, seed, salt, empty
		STEAM Project	Density Chart
			21st Century Skills: Critical Thinking, Communication
15 Page 64	S T E A M	Title	CARS OF THE FUTURE / WC: 71
		Academic Objective	Learn about electric cars and the engineers who make them
		Vocabulary	battery, burn, gasoline, clean, engine, quiet
		STEAM Project	Design Your Car of the Future
			21st Century Skills: Critical Thinking, Creativity, Collaboration, Communication
16 Page 68	S T E A M	Title	RECORDING SOUNDS / WC: 74
		Academic Objective	Learn about recording sounds and sound engineers
		Vocabulary	headphones, music, loud, clear, microphone, change
		STEAM Project	Making a Musical Instrument ▶
			21st Century Skills: Critical Thinking, Creativity



KEY WORDS

A Look, listen, and repeat.  01



n. metal



n. wood



n. cork




n. rubber



n. leather



n. string

B Listen and number the words.  02

I will learn... about the properties* of different materials.

WHAT'S IN A BASEBALL?



Scan for Audio

WARM-UP

What materials can you name?

READING

Listen and read.  03



Scan for Video

Do you like baseball? Do you play it?

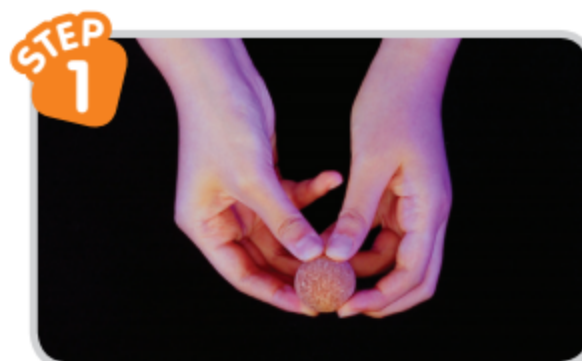
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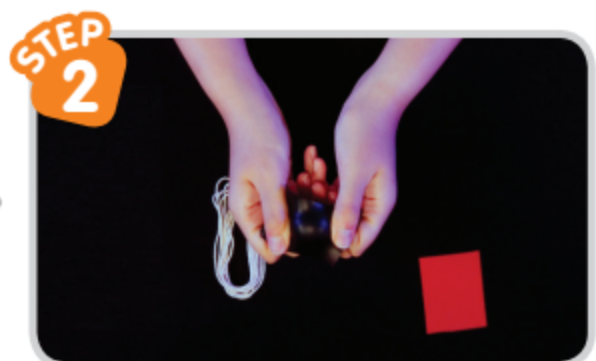
Baseball bats are made of **metal** or **wood**.

Baseballs are made of **cork**, **rubber**, and **leather**.

Let's see how to make a baseball.



Use a cork for the center of the baseball.



Cover the cork with black rubber and wrap it again with red rubber.