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# Contents

Chapter	Subject Area	Vocabulary	Project
T Items in Orbit page 4	History: Objects in Space	blast, spacecraft, essential, non-essential, object, astronaut, mission, symbolic, spacecraft	Make a poster showing objects to bring for a trip to space.
<b>2</b> Travel and Learn  page 8	Social Sciences: Study Abroad	valuable, climate, adapter, employer, point of view, scholarship	Create a study abroad advertisement about your country.
How Animals Sleep  page 12	Science: Animal Sleep Habits	function, survive, orangutan, sloth, still, alert, surface	Draw a picture of your bedroom for a perfect bedtime.
4 Amazing Amazon page 16	Geography: Amazon Rainforest	rainforest, species, deforestation, development, destruction, harmful, valuable	Make a poster about a new species.
<b>5</b> Natural Building  page 20	Art: How Homes are Made	materials, suit, environment, straw, benefit, turf, frame, thatched-roof, insulation	Design a home and make a poster about the materials.
6 Colorful Coral page 24	Geography: The Great Barrier Reef	coral, skeleton, reef, colony, ecosystem, coral bleaching, marine heat wave, threat	Make a diorama or model of a coral reef.
<b>7</b> Fire and Earth  page 28	Science: Ways of Cooking	germ, simple, flame, civilization, wood-fired, earth oven, ash, radiation	Create a menu for a restaurant and design the kitchen.
<b>8</b> Shared Speech  page 32	Math: The Language of Business	multinational, business, communicate, global, official, documents, formal	Create a job advertisement for a language translator for a sports team.
Fun and Function page 36	Science: Designing Drones	crops, vehicle, location, delivery, aircraft, privacy	Design a drone for the future.

# Items in Orbit History

- 1 Look at the pictures. What do you think the text is about?
- 2 )) Listen and read. What interesting objects go into space?

# **Vostok 1 Blasts Off!**

In 1961, Yuri Gagarin **blasted** off in the Vostok 1 **spacecraft** and became the first man to reach outer space. Gagarin brought some **essential** objects for his journey: a spacesuit, food, and water. He also brought a **non-essential** object—a toy doll!

When the doll floated inside the spacecraft, it showed him he was in space. But a toy isn't the only interesting space **object**.

An **astronaut** on the Apollo 16 **mission** left a family photograph on the moon. He wanted his family to come with him on his adventure. Nowadays, astronauts can go online with a laptop and chat with their family from space!

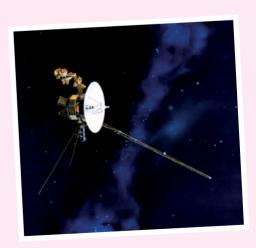
Sometimes, astronauts bring non-essential objects because of their **symbolic** or special meaning.

The Apollo 15 team carried a small statue called the "fallen astronaut" to remember all the people from earlier missions who explored space. In Apollo 11, the team brought a small, golden olive branch to the moon as a symbolic message of peace.

In 1977, the Voyager **spacecraft** carried golden records. The golden records were a message from the people of Earth. The records had music, pictures, and greetings in 55 different languages.

Today, the Voyager spacecraft is still out in space!





 $\bigcirc$  Which of these objects went to space? Write a check ( $\checkmark$ ) or a cross (x).



1	$\alpha$	toy	doll
---	----------	-----	------

2	$\alpha$	hoola-hoop
4	a	110010-11000

3	golden	record
3	golden	record

4 a family	photograph
------------	------------

_	or orololom	01:0	lo v orro orb
5	a golden	olive	branch

Z		cha]	11-1-	. ~ ~	
<b>n</b>	(1	CILCL	ıĸr	າເາເາ	1()
_	Q.	OIIG	$r_{17}r$	$\sim$	

_					
7	an	ency	/ClO	oec	lia

8	statue of the
	"fallen astronaut"

1	Vostok:		 _	_	_	_	_	-	-	_	_	-	_	_	-	
2	Anollo 11.															

- 2 Apollo 11:
- 3 Apollo 15: .....
- 4 Apollo 16:
- 5 Voyager:

# 3 What do you think is the most interesting object that went to space? Ask and answer with a friend.

I think the most interesting object that went to space is the ...

Since 1969 only 12 astronauts have walked on the moon.



**n** Read the text. Then write *essential* or *non-essential* next to the items.

# **Essential or Non-essential?** An essential object is something you must have. You really need it. A non-essential object is something you want, but you don't really need. On the Apollo 14 mission, astronaut Alan Shepard took a golf club and golf balls with him to the moon. He didn't need to play golf. He wanted to have some fun. 1 golf clubs 5 water 2 spacesuit 6 air (oxygen) 3 food 7 golden olive branch 4 statue 8 toy \_\_\_\_\_ Read the text on page 4 again. Why did each object go to space? Object Reason 1 golden olive branch 2 family photograph 3 golden records 4 statue of the fallen astronaut Read and write True or False. 1 The family photograph was essential to the Apollo 16 mission. 2 The golden olive branch was non-essential, but it carried a good message. 3 All objects taken into space are essential.

4 Astronauts need to take a spacesuit – it's essential.

5 It is essential for astronauts to have air.

Imagine you are going to live on the International Space Station for a year. Talk with the class.

What will you pack in your bag?

What essential and non-essential things will you bring?

Why will you pack those items?



### Create

2) Make a poster showing the objects in your bag. Draw and label the items as essential or non-essential.



### Showcase

Share your poster with the class. Talk about why you packed each item.

# chapter

# Travel and Learn

- Look at the title and pictures. What do you think the text is about?
- Listen and read. What should you bring when you study abroad?

# Studying Abroad is Awesome!

Get valuable international experience! Studying abroad lets you experience life in a different country. Open your eyes to



a colorful new culture with its music, art, and food. Learn to see the world from a different point of view. International experience is something both colleges and employers often value.

Jump right into a new language! When you study abroad, language learning goes on outside the classroom, too. From finding out the names of fruits at the market to visiting the theater, there are many wonderful, real-life opportunities to

practice language skills. Just think, you could explore beautiful Costa Rica while earning a certificate in Spanish!



Discover a different world! Studying abroad gives you a chance to try exciting, new challenges and can help build confidence. You can take part in activities



you don't normally do at home like hiking through a rainforest, canoeing down a river, or horseback riding in the mountains!

What to bring? First, you should look at the weather—you may need different clothes for the local climate.

For items that need electricity, you might want a power adapter. Wherever you go, you'll want to bring your camera for some fantastic photography!



How to pay for study abroad? There are creative ways, like a scholarship to help pay for school fees and travel. Research online to learn about scholarship competitions.



**1** Read and complete.

		adapter	climate	employer	point of view	valuable	
	1	First pers	on	uses the	word "I." Third إ	oerson uses '	`he, she, thev."
		_			e is a good boss		,,,
,	3	The pain	tings are v	worth a lot o	f money. They o	re really	·
	4	What kin	nd of	do the	y have in Japai	n? Is it cold?	
;	5	I need to	buy an	to	charge my lapto	op battery.	
I	≀e	ad the te	xt again. I	Then answei	the questions.		
	1	What are	e three exc	amples of cu	lture in the read	ling?	
	2 What do colleges and employers often value?						
	3 What kind of certificate can you earn in Costa Rica?						
,							
	4						
,	4	How can	students i	neib bay tor	their study abro	oaa iees?	
;	5	What are	e two plac	es outside th	ie classroom you	ı can practic	ce language skills?

3 Where would you study abroad? Why? Ask and answer with a friend.

I would like to go to Peru. I want to learn Spanish.

I would choose Italy. I want to learn Italian in the city of Venice.



# Time to Think

Read the text. Then look for examples of positive, persuasive language from the text on page 8. Circle the answers below.



a colorful

c incredible

The study abroad advertisement on page 8 is an example of a persuasive text. It makes readers want something, or persuades them, by using exciting words and photos. Advertisements often use language features (words) and visual features (photos) to make people think a certain way.

**b** amazing

d magnificent



	e new	f beautiful	
	g exciting	h wonderful	
2	Which reason to study abroad do you this	nk is the most persuasive? C	heck (🗸)
	lpha You can take part in an activity you don't normally do at home.		
	b International experience is often value	ed by universities.	
	c You will learn a new language.		

3 Find an example of persuasive language or visual features from the text on page 8. Complete the chart.

Feature	Example
<b>α</b> Photographs	Photograph of a cloud forest
<b>b</b> Exciting words	
<b>c</b> <u>Underlined</u> headings	
d Words in <b>bold</b> font	
e Words in <i>italic</i> font	



1 Anna wants to study abroad next year. Persuade her to come to your country. Talk with the class.

What cultural things can she experience in your country?

What places should she visit?

What should she bring?



### Create

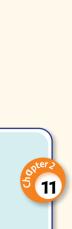
Work with a friend to make an advertisement that persuades students to study abroad in your country. Use visual and language features.



### Showcase

Share your advertisement with the class. What makes the advertisement persuasive?





S Siect

# Chapter

# How Animals Sleep Science

- 1 Look at the pictures. Which animals can you name?
- 2 )) Listen and read. What is one interesting way animals sleep?

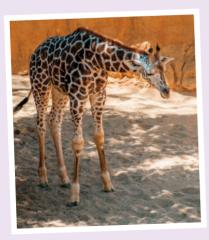
# **Odd Animal Sleep Habits**

When humans go to bed, we usually rest our head on a soft pillow. Lying down in the dark, we fall asleep. We need sleep to help our bodies rest and grow and for our brain to **function** properly. Animals need sleep to **survive**, too. But do you ever wonder how they sleep?

Like humans, **orangutans** like to lie down to go to sleep. They build large nests in the treetops with leaves and branches. A safe, comfortable resting place helps orangutans to get deeper and longer sleep.

Animals sleep in many different ways. **Sloths** also sleep in trees, but do so hanging upside down! They sleep this way for 15 hours a day. Even when they are awake, sloths are **still** – they don't move much.





Baboons and other monkeys sleep sitting up, always **alert** for danger. And the giraffe keeps safe by sleeping standing up – they are ready to run at any time!

Some animals like the Wahlberg's fruit bat even sleep with one eye open! In this way, they can look out for predators such as eagles and monkeys. Dolphins sleep with one eye open, too. This helps them watch their predators and swim up to the **surface** of the water for air.

# Read and Learn

	1	Read.	Then	match
--	---	-------	------	-------

1 I like to make a nest to sleep in. a dolphin

2 I sleep standing up. baboon

3 I sleep for 15 hours a day hanging upside down. c fruit bat

4 I sleep with one eye open to swim to the surface for air. d giraffe

5 I sleep with one eye open to look out for predators. e orangutan

6 I sleep sitting up. f sloth

### Write the correct word next to the definition.

alert function orangutan survive surface still

1	To work, a	ct, or behave.	

2 Not moving.

3 The top of the ocean.

4 To be awake or on guard.

5 To live or stay alive.

6 One of the great apes, found in Malaysia and Indonesia.



# 3 Which animal sleep habit would be the hardest for you? Ask and answer with a friend.

Sleeping with one eye open would be the hardest!

I think sleeping standing up like a giraffe is harder.

# Did You Know?

While they sleep, some sunbirds fluff up their feathers to look big and scare away predators.



# Time to Think

# Read the text. Use the chart to answer the questions.

The amount of sleep each animal needs can be very different. For example, plant-eating animals such as the koala or the grass eating zebra have to spend a lot of their time eating to survive.

Researchers also believe that animals that are in danger from predators spend more of their time alert.

Amount of Sleep		
African elephant (wild)	2 hours	
African elephant (zoo)	4-6 hours	
Giraffe	2 hours	
Horse	3 hours	
Lion	14 hours	
Brown bat	19 hours	
Giant armadillo	20 hours	



	1	Which animal gets the most sleep?
	2	Which animals get the least sleep?
	3	How many animals sleep for seven or more hours?
	4	How many animals get less than four hours sleep?
2	W	rite a check (🗸). Then write what you think.
	1	Which animal sleeps more? elephant in the wild elephant in a zoo
		Why?
		···1
	2	Which animal sleeps more? lion zebra
		Why?
		*
3	Re	ead the text on page 12 again. Describe how each animal sleeps.
	1	giraffe:
	2	orangutan:
		fruit bat:
	4	baboon:



Think about what you need to sleep well. Talk with the class.

Do you like the room light or dark? Do you sleep with your door open? What time do you go to sleep and wake up?





### Create

Draw your bedroom for the perfect bedtime. Label the things you need for a good sleep.



### Showcase

Share your drawing with the class. Explain how the things in the drawing help you sleep.



S<sub>roject</sub>

# Amazing Amazon

Geography

- Look at the pictures. What problems in the Amazon rainforest do you see?
- Listen and read. Why is the Amazon rainforest important?

# **Deforestation in the Amazon**

The Amazon **rainforest** in South America is the largest tropical rainforest on the planet. It has around 10% of the entire world's wildlife! There are millions of different species, or kinds of plants, insects, and animals that call the rainforest home.

While pink dolphins swim the waters of the Amazon River, sloths climb the trees, and brightly colored parrots take flight above. On land, jaguars prowl around looking for prey.

The Amazon also has more primates, like monkeys and apes, than anywhere else in the world. There are so many special animals to see!

In the Amazon, a new kind of plant or animal is found nearly every week! The Fire-Tailed Zoque-Zoque monkey was just discovered in 2011. Sadly, like many other species, the Zogue-Zogue monkey's rainforest home is starting to disappear.







**Deforestation** is the removal of trees for things like wood, farmland, or **development** like roads. The destruction of rainforests is harmful for animals and people, too. Many of our medicines come from rainforest plants and only around 1% of Amazon plants have been studied. Without action, these valuable species could be lost forever.

# Did You Know?

The Amazon River is the second longest in the world and stretches for 6,840 kilometers!

# Read and Learn

1	Unscramble	and write.	Then match.

1	estrforain	α
_	0.0111010111111111111111111111111111111	

- 2 resdetionfota
- 3 veentlopmde
- 4 maprites
- 5 ciespes

- A type or kind of living thing.
- **b** Building or construction, for example, road building.
- c Cutting down of trees.
- d A group of living things that includes, monkeys, apes, and humans.
- e A forest that gets lots of rainfall.

# Circle the best option.

- 1 What percentage of the world's wildlife lives in the Amazon rainforest?
  - **a** 10%

**b** 20%

- c 15%
- 2 How many different species are thought to live in the Amazon?
  - a thousands
- **b** hundreds

- c millions
- 3 How often are new species discovered?
  - a every week
- **b** once a year
- c once a month
- 4 What is one reason the article gives for deforestation?
  - a more farmland
- **b** wood-eating insects
- c strong winds

- 5 Why are Amazon plants important?
  - a they look beautiful b they smell good
- c they can be used for medicines
- Which of the Amazon species named in the article do you like the most? Why? Ask and answer with a friend.

I like the pink dolphin—they are so beautiful!





Read the text. Then write True or False.

# **All About Jaguars**

My name is Tomas and this post is for students who want to learn more about animals in the Amazon.

My personal favorite is the jaguar. Jaguars are the top predator in their habitat. They can hunt prey three to four times bigger than themselves! Using their powerful jaws, they can hunt deer, birds, and even caiman—a kind of crocodile.

1 The number of jaguars in the Amazon goes up each year.



Due to deforestation, there is now less prey for them to hunt. As a result of this, the number of jaguars in the Amazon is going down each year. I want to help them!

	2 The jaguar can hunt prey much lo	arger than itself.
	3 The jaguar has powerful jaws.	
	4 Jaguars hunt for monkeys and dee	er
	5 The jaguar is the top predator in it	s habitat.
2	Read and match.	
	In the Amazon rainforest	Impact
	1 Plants are lost before discovery.	lpha Lower number of Jaguars in the wild.
	2 New roads are built.	<b>b</b> Fewer new medicines for people.
	3 There's less prey to hunt.	c Less open space for animals to live in
3	What do you think is the most harmf	ul impact of deforestation? Why?



Find out about or imagine a new species in the Amazon rainforest.

Talk with a friend.

Is the species a plant or animal?

What's the name?

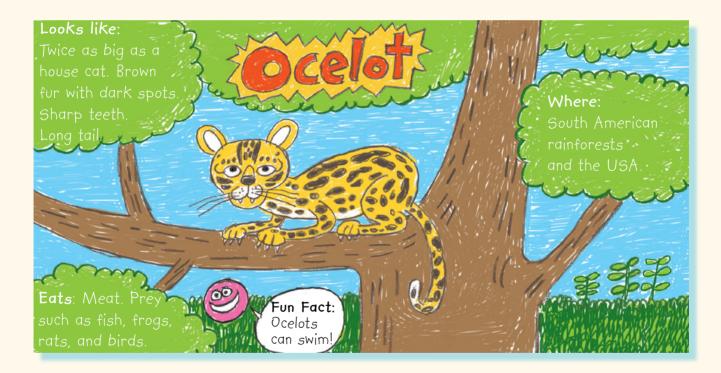
Where does it live?

What does the species look like and eat?



### Create

Make a poster about the new species. Draw and label.



# Showcase

3 Share your poster with the class. Describe the species.





A Coject

# Chapter

# Natural Building

- 1 Look at the pictures. How is each house different?
- Listen and read. What makes these houses different from other homes?

# How Homes are Made

There's a long history of building homes with natural **materials**. Around the world, many houses use materials to **suit** or fit the **environment** and the needs of the people who live there.

Cob homes are made with a mix of heavy, soft earth called clay, as well as sand, **straw**, and water. The material is very soft when wet, so you can make lots of interesting shapes—every cob house looks different! People in hot countries often use cob, as the environment helps cob to dry and become strong. Another **benefit**, or good thing, is that cob houses are not expensive to build.

**Turf** is another natural building material. Turf is the top, grass and dirt layer of the earth. Turf homes start with a wood **frame**, which is filled with earth or stone to make walls. Turf is then used to cover the roof. A benefit of turf homes is they stay very warm—they're great for countries with cold weather!

Look at this **thatched-roof** house! The top is made with straw, or parts of dried plants. A benefit of these homes is that they have excellent **insulation** and protection from the weather. They can be used in almost any kind of environment! They stay warm in the winter and cool in the summer.







# Read and Learn

# Read and write True or False.

- 1 People have not been building homes with natural materials for very long.
- 2 Cob homes are made with a mix of clay, sand, straw, and water.
- 3 Every cob house looks the same.
- 4 Turf is the top grass and dirt layer of the earth.
- 5 The roof in a turf house is made from cob.
- 6 Thatched-roof homes stay warm in the winter and cool in the summer.

# Read and match.

- 1 materials
- 2 straw
- 3 thatched roof
- 4 environment
- 5 benefit
- 6 suit
- 7 frame

- a Something that is good.
- b Things you can build with, such as cob, turf, or straw.
- c Parts of dried plants used to make thatched roofs.
- d Made of wood, filled with earth or stone to make walls in turf homes.
- e Top part of a house, made with straw.
- f The natural world, where people live.
- g Match or fit well with something.

### 3 Which house would you like to live in? Why? Ask and answer with a friend.

I'd like to live in a cob house. I love the different shapes!

I like the turf house. It looks like it's part of the earth.





# Time to Think

Read the text. Then match.

# **Yurts**

A yurt is a traditional Mongolian home used for thousands of years.

A yurt has a solid, wooden frame tied together with rope. Covering the frame are walls of thick felt, which is a kind of cloth made from wool.

With three to five sheets of felt, and a strong waterproof cover on the outside, the yurt has the benefit of being

warm even in the coldest of weather! A yurt can also be packed up easily, so it suits people who need to move around.



### What materials does a yurt use? Match.

1	For the frame:	α	canvas
	i di lilo ilalilo.	Q.	Callvas

2 For the walls: b felt

3 For the outside: c wood and rope

2	Is the yurt a good home for the environment where you live? Why or why n	ot?

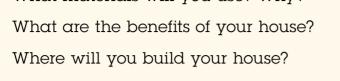
Read the texts on pages 20 and 22 again. Then complete the chart.

Home	Materials	Benefits
a cob	clay, water, sand, straw	strong, not expensive to build
b turf		
c thatched roof		
d yurt		



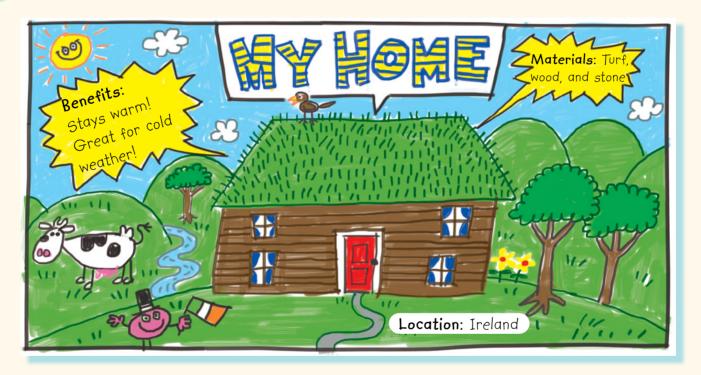
1 Imagine you are making a home. Talk with the class about the design.

What materials will you use? Why?



### Create

Draw and label a picture of your house.



### Showcase

3 Share your house with the class. Tell them the location. Then explain the materials and benefits.



& Spect

# Chapter Colorful Coral Geography

- 1 Look at the pictures. What part of the Earth do they show?
- 2 ))) Listen and read. Which species live on the Great Barrier Reef?

# **Great Barrier Reef**

**Location:** Australia Size: 2,300 km long

The Great Barrier Reef is the largest coral reef in the world. **Cora**l are sea animals similar to jellyfish—they are soft but have a hard **skeleton**. Coral attach to a **reef**, the hard layer of rock on the ocean floor. Groups of coral grow together to make a **colony**. The Great Barrier Reef began growing millions of years ago!





Coral reefs are sometimes called the "rainforests of the sea." Thousands of different species of marine life make their home in and around the Great Barrier Reef including fish, whales, dolphins, turtles, and sharks.

Unfortunately, human actions could destroy this important **ecosystem**. As global warming makes ocean temperatures go up, and pollution from land goes into the sea, something called **coral bleaching** happens. The coral turn white and can eventually die. From 2016 to 2017, **marine heat waves**—where the ocean temperature stays very high for several days, caused the death of a third of all coral in the Great Barrier Reef.

Scientists are working hard to rescue the coral reef and save it from these **threats** and dangers.



# Read and Learn

Match the vocabulary word to the define
---

1 ecosystem

2 marine heat wave

3 coral bleaching

4 threat

5 reef

6 coral

7 colony

- **a** When ocean temperatures stay high
- **b** A natural system of living things
- **c** Hard layer of rock on the ocean floor
- **d** Groups of coral joined together
- e Soft sea animals with a hard skeleton
- **f** When coral turns white from pollution
- g A danger or problem

# Read the text again. Then answer.

1 How long is the Great Barrier Reef?

2 Coral are similar to which other sea animal?

3 Where is the Great Barrier Reef located?

4 How long has the Great Barrier Reef been growing?



- 5 Why are coral reefs sometimes called the "rainforests of the sea"?
- 6 What are two threats to the Great Barrier Reef?

3 Imagine you are swimming near the Great Barrier Reef. Which sea animals do you want to see? Ask and answer with a friend.



The Great Barrier Reef is about the same size as Italy!



# Time to Think

Read the text. What are coral larvae?

# **Saving Coral Reefs**

To rescue coral reefs from the effects of pollution and global warming, marine scientists around the world try different solutions.

In the same way that we use plant nurseries to raise young plants, it is possible to grow coral in coral nurseries. Scientists take little pieces of healthy coral and grow them on special platforms on the ocean floor. When the coral is ready, they plant it back onto the reef!

Scientists also raise coral larvae, or baby coral, in a laboratory. They can place millions of them onto parts of the reef that are damaged! Creating marine "safe zones" can help as well. These areas protect coral reef and marine life from human activities like fishing.

Match the solutions to the effects.

### Solutions

- 1 growing coral in nurseries
- 2 raising coral larvae in a laboratory
- 3 creating special marine areas

### **Effects**

- and marine life
- b healthy coral planted back on the reef
- c millions of larvae placed on damaged reefs
- 3 Look at the chart. Check (🗸) features or threats of the Great Barrier Reef.

	Threat	Feature
1 Home for thousands of marine species		
2 Marine heat waves		
3 The largest coral reef in the world		
4 Pollution from land that goes into the sea		
5 Coral bleaching		
6 Millions of years old		



Think about making a diorama or model of a coral reef under the sea.

Talk with the class.

Project

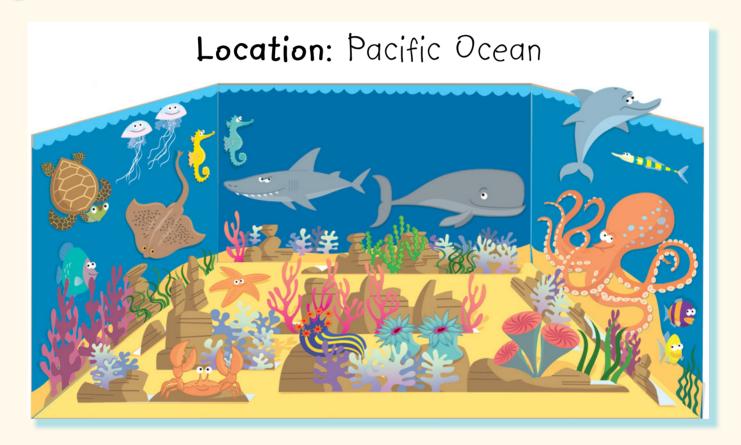
Where is your coral reef located?

What animals will live there?

What threats will impact your reef and how can you protect it?

### Create

2 Make a diorama or model showing your coral reef.



### Showcase

3 Share your diorama or model with the class. Talk about the location, animals, and threats.





# Fire and Earth Science

- 1 Look at the pictures. What do you think this text is about?
- 2 )) Listen and read. How has cooking changed over time?

# **Cooking With Heat**

From the time humans learned how to make and use fire, people have cooked their food. One thing that has changed over time is how humans cook food.

### Two million years ago:

Humans first began using fire to cook food. Cooking meant humans could eat more kinds of foods. Cooking helped to kill **germs** and made food last longer without going bad. It also made food tasty!



## 200,000-40,000 years ago:

People started to use **simple** fireplaces—a circle of stones around **flames**, just like a campfire. Humans may have also used the hot stones to cook their food.

# 30,000 years ago:

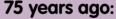
Humans made "earth ovens," by digging holes and filling them with rocks and hot ashes. They wrapped their food in leaves, put it inside the earth oven, and covered it with dirt while it cooked.

# 7,000 years ago:

Ancient **civilizations** began to use **wood-fired** ovens made from clay. They baked bread this way.

### 200 years ago:

Though people used ovens for many years, it wasn't until 1826 that the first gas oven arrived. Gas was quicker to start up and easier to use. Around 65 years later, people then started using electric-powered ovens.



In 1945, an engineer discovered a way to make food hot using radiation after he accidentally



melted a candy bar in his pocket! This invention became the microwave oven that we use today.

# Read and Learn

- Read. Circle True or False.
  - 1 Humans discovered how to cook food 150 years ago. *True / False*
  - 2 The gas oven was invented in 1826.

    True / False
  - 3 Using microwave radiation to cook food was discovered by accident. True / False
  - **4** Electric ovens were invented before microwave ovens. *True / False*
  - 5 Earth ovens need electricity to work.

    True / False
  - 6 About 7,000 years ago, humans began to make ovens out of clay. *True / False*
  - 7 The first fireplaces were made out of bricks and metal. *True / False*



	What are	some of	the be	nefits of	cooking	food?
4	Wildl alc	501110 01		IICIIIS OI	CCCILITIES	1004.

1	
2	
3	

3 How does your family like to cook food? What do they use? Ask and answer with a friend.

My grandmother likes to barbecue food—it's so good!

My dad uses the oven.

Many people around the world still cook their meals on an open fire.



# Time to Think

1 Read the text. Then answer the questions.

# **C** king Without Heat!

Most forms of cooking use flames or heat—think of baking in the earth oven, microwaving, roasting, boiling, or frying in a pan. But did you know it's also possible to "cook" or cure fish without heat!

**How?** First, put uncooked fish in lime or lemon juice. After a while, the fish turns white. Then the fish gets harder—just like when you cook over a flame! This happens because citric acid, the juice from fruits like lemons or limes, "cooks" the fish.

A popular dish made this way is ceviche. People believe that the Moches people of Peru ate ceviche around 2,000 years ago. The dish is still so popular that Peru has a national ceviche day!

	1 What happens to fish wh	dd lemon or lime juice?							
	2 What is it in the juice that "cooks" the fish?								
2	Why do you think humans o	always ch	nange the way they cook food?						
3	Read the texts on pages 28	and 30 a	gain. Put these cooking technolo	 ogies in					
	order. Write the number in t		99	9-02					
	<b>α</b> Using electricity to cook.		b Discovering that fire could cook food.						
	c Microwave ovens.		d Putting food in the ground with hot stones.						
	e Cooking or curing raw fish with juice.		f Using hot stones from fireplace to cook.						
	g Wood-fired clay ovens.		h Using gas to heat food.						



1 Imagine you are creating a restaurant. Talk with a friend about the menu and kitchen.

What is the name of your restaurant?

Where will you build it?

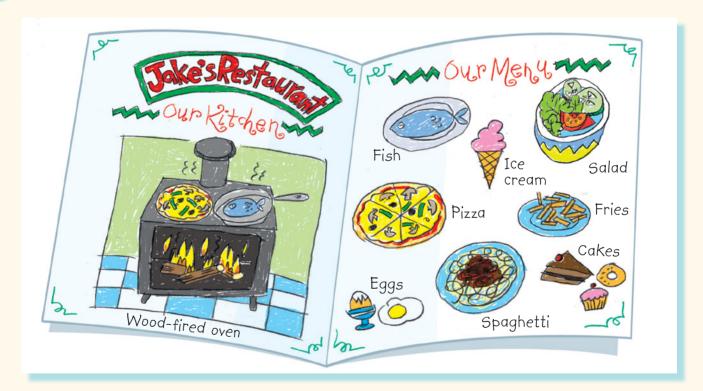
What foods will you have?

How will you cook the food?



### Create

2 Create the menu. Label the foods and add prices. Draw a picture of the kitchen.



### Showcase

3 Share your project with the class. Describe the restaurant and menu.

A Poject

# Shared Speech Math

- 1 Look at the pictures. What are the people doing?
- 2 )) Listen and read. Across the world, what language do many companies use?

# The Language of Business

Today, many companies are **multinational**, which means they do **business** in several different countries. But they often use one language to **communicate** with customers and workers—English.

English is a truly **global** language. Around the world today, about 1.75 billion people speak some English or use it on the Internet. That's one in four people!

Speaking English can be good for business. Using English gives a company a wide choice of people to buy from and allows them to sell to more **customers**. If a company has offices in many countries, the workers are often from different countries, too. Using English as a shared language helps those people understand each other.





You probably know that many people speak English in Canada or Britain, but there are lots of other countries where English is the main or **official** language. For example, English is the main language of Belize, in Central America.

English often changes based on where it's spoken. In Jamaica, the official language is English, but they speak a unique kind of English called Jamaican Creole. In Botswana, Africa, the spoken language is Setswana, but they use English for **documents** and **formal** writing.

No matter where it's spoken, the English language is always growing in new ways. It can be heard in so many different kinds of accents!

# Read and Learn

# Read and complete.

	Cusioniei	communicate	iomiai	giobai	mumanonai	Official
1		language is mmon language	_			
2		language is the leech, or importa	-	might		
3		company does ferent countries.	s business	in		
4		is someone whee or business.	no buys sc	mething		
5	the world".	means the same	as "arour	nd		
6	When we	, we sh	are ideas	or inform	ation using lang	guage.
W	rite <i>True</i> or	False.				
1	Half the pe	eople on the plan	iet can sp	eak some	English.	
2	The official	l language of Bel	ize is Spa	nish		
3	Many big	companies do bu	more thai	n one country		
4	In Botswar	na, they use Frenc	ch for forn	nal writin	g	
5	Many peop	ple in Jamaica s <sub>l</sub>	peak Jam	aican Cre	eole.	

3 How do you think you will use English in the future? Ask and answer with a friend.

I want to travel to other countries where they speak English!

I want to get a job in a company that has offices in other countries.

# Did You Know?

English is also the most popular language on the Internet, used by an estimated 25% of Internet users around the world!



# Time to Think

# Read the text. What sport is mentioned?

# Sports Talk!

It can be a very useful skill to speak two languages. Did you know that many sports teams have translators or interpreters to help people communicate in different languages? An interpreter is someone who translates words from one language to another.





For example, if a baseball team in the USA has a player from Japan that doesn't speak English, they can hire an interpreter that speaks English and Japanese—what a cool job!

Technology like translation apps can also help. Some apps use voice-recognition technology. You speak into your phone, and it translates what you say into a different language. To understand a sign or writing, just point your phone camera and the app will translate it on screen!

# 2 Answer the questions.

- 1 What does an interpreter do?
- 2 Why do you think so many sports teams have interpreters work for them?
- What is the best solution for these situations? Write a check (

Situation	Use English	Use an interpreter
a An English-speaking coach gives instructions to a Japanese baseball player. The player doesn't speak any English.		
b A business person in South Korea has a work call with a business person in China. Both people can speak English.		



1 Think of as many countries as you can that speak English. Make a list with the class. What else do you know about those countries?



They speak English in New Zealand. They made the movie Lord of the Rings there!

They also speak English in Belize!

### Create

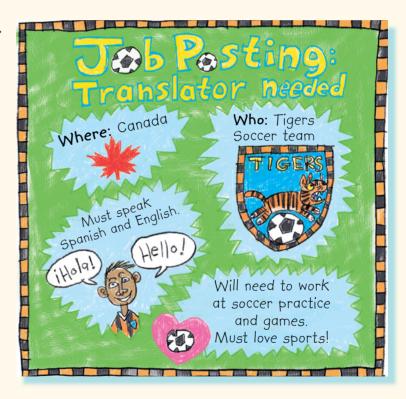
Imagine you work for a soccer team in an English speaking country. The team needs to hire a translator. Work with a friend to design a job advertisement.

Think of a team name and logo.

Where is your team located?

What languages will the translator need to speak?

When will the translator need to work?



# Showcase

3 Share your advertisement with the class. Talk about the team and translator.



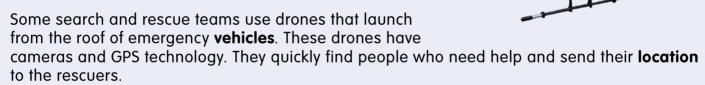
# Fun and Function Science

- 1 Look at the pictures. What do you already know about drones?
- 2 )) Listen and read. What are some of the different uses for drones?

# **Designing Drones**

Drones are not only fun to fly—they can be very useful.

It takes farmers a long time to check their **crops**. With the help of a drone, which can quickly fly over large areas, farmers can do this faster. Farmers can take photos and gather information about plant growth, the health of the soil, and if the crops need water. The drones have rechargeable batteries, too!



During emergencies, the Pouncer **delivery** drone carries water, food, and medicine to places that are hard to reach. The food in a Pouncer feeds up to 40 people and emergency services can launch the drone from planes as far as 35 km away!



It is important to use drones in the right way. If they aren't flown safely, drones can hit other **aircraft**. Flying them over crowds also risks the drone falling and hurting someone.

**Privacy** is also an issue. Drones can take photos and gather information without people knowing or without their permission. For these reasons, in some places, you must register and tell the government about your drone.

Overall, drones are incredible flying machines—but should be used in a safe and careful way.

# Read and Learn

# Read and complete.

aircraft crops delivery location privacy vehicles

- I don't want my photo posted online for everyone to see. I worry about my \_\_\_\_\_.
- 2 The farmer's were corn and wheat.
- 3 Helicopters, drones, and airplanes are all types of \_\_\_\_\_.
- 4 There are seven of us going to the concert. We will need two ......
- 5 Henry couldn't find the school. He didn't know its \_\_\_\_\_.
- 6 Sara ordered a pizza for \_\_\_\_\_ to her house.



# Write True or False.

- 1 A drone can check a farmer's crops quickly.
- 2 If they aren't flown safely, drones could hit other aircraft.
- 3 Some search and rescue drones have cameras and GPS technology.
- 4 Privacy is not an issue with drones.
- 5 A Pouncer drone can carry food for up to 400 people.
- 3 Which of the drones from the article would you like to fly? Why? Ask and answer with a friend.

I want to fly the farm drone. I like its wings.

I like the search and rescue drone!



# Did You Know?

Flying vehicles that didn't need a pilot on board first appeared in 1917 during World War I.



# Time to Think

# Read the chart. Then answer the questions.

The AAV (Autonomous Aerial Vehicle) is a passenger drone. It can carry a single passenger, or person, at speeds of up to 100 km/hour! The hope is that in the future, the AAV will lead to faster, more eco-friendly transportation.

Features	Farm Drone	Search and Rescue Drone	AAV Passenger Drone	
Controller Type	Laptop or app	Remote control	None	On board screen or app
Range	3 km	7 km	40 km	50 km
Weight	690 g	3.8 kg	50 kg	240 kg
Power	Battery	Battery	None	Battery
Charge Time	1–2 hours	1–2 hours	None	1–3 hours
Camera	Yes	Yes	None	None
Flight Time	50 minutes	3–27 minutes	Varies	25 minutes

1	The	drone	with	the	longest	charge	time	is	the	
---	-----	-------	------	-----	---------	--------	------	----	-----	--

- 2 The drone that has the shortest range is the
- 3 The drone with the heaviest weight is the
- 4 The drone with the longest range is the

# 2 Look at the chart. Then answer.

1	What	makes	s the .	Pouncer	different	from the	e other	drones?	

# Read. Then answer.

Elena wants to buy a drone with these features:

Flight time of 40 minutes

A camera

Able to control with app

■ Battery power

Which drone from the Activity 1 table should Elena buy? Why?



1 Design a drone for the future. What will it look like? How will it help people? Talk with the class.

Vect

What jobs will it do?

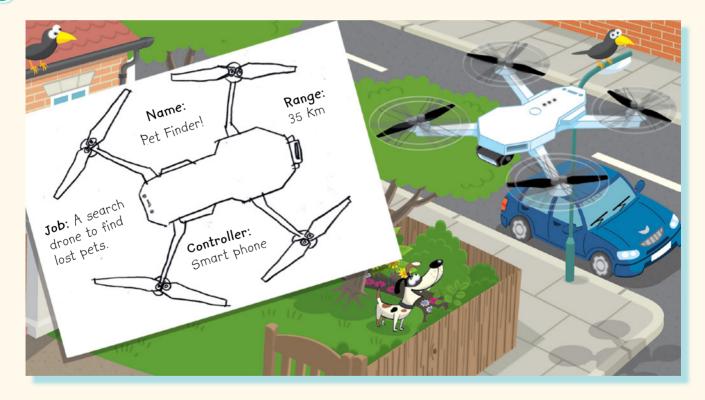
What is the drone called?

How will you control it?

What range will it have?

### Create

Draw and label a picture of your drone. Explain the features and parts.



### Showcase

3 Share your drone with the class. Talk about the features. Explain.



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