

# impact

**4** STUDENT'S BOOK

**Impact 4**

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**ON THE COVER**

Bioluminescent plankton on a South Coast  
beach, Jervis Bay, New South Wales

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# Scope and Sequence



## 1 Pushing the Limits

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## 2 It Takes a Village

page 24

## 3 Food Matters

page 42

## 4 The Footprint of Fun

page 58

THEME	Pushing mental and physical limits	Digital humanitarianism and crowdsourcing	Food sustainability	The environmental impact of entertainment
VOCABULARY STRATEGIES	<ul style="list-style-type: none"> <li>Prefix <i>un-</i></li> <li>Use a dictionary</li> </ul>	<ul style="list-style-type: none"> <li>Suffixes <i>-ion, -tion</i></li> <li>Identify parts of speech</li> </ul>	<ul style="list-style-type: none"> <li>Borrowed words</li> <li>Use context of unit</li> </ul>	<ul style="list-style-type: none"> <li>Prefix <i>pro-</i></li> <li>Use context of sentence</li> </ul>
SPEAKING STRATEGY	Showing interest in a conversation	Making suggestions and agreeing or disagreeing	Offering advice and accepting or declining advice	Defending your opinion
GRAMMAR	<p><b>Embedded clauses, questions and commands</b></p> <p><i>I think extreme sports are dangerous.</i></p> <p><b>Adding emphasis</b></p> <p><i>The reason (why) I won't go surfing is that I don't like swimming in the sea.</i></p>	<p><b>Future tenses:</b> Describing events in the future</p> <p><i>Over the next few years, people will look online to find volunteers to help with disaster relief.</i></p> <p><b>Quantifiers:</b> Expressing amounts</p> <p><i>Half of/Fifty per cent of the world's population is ...</i></p>	<p><b>Mixed conditionals:</b> Expressing how things would be different</p> <p><i>If I hadn't learnt about overfishing, I would still be eating tuna.</i></p> <p><b>Double comparatives:</b> Describing outcomes</p> <p><i>The more people there are in the world, the more food we need to produce.</i></p>	<p><b>Passives:</b> Describing actions and processes</p> <p><i>What has been done by musicians to reduce their ecological footprint?</i></p> <p><b>Verbs followed by gerunds or infinitives</b></p> <p><i>Parks must continue coming up with/to come up with ways to reuse water.</i></p>
READING	<i>No Limits</i>	<i>Focus on the Future</i>	<i>Grow It Here, Eat It Here</i>	<i>Game Over</i>
READING STRATEGY	Summarise	Use text features for comprehension	Connect text to prior knowledge	Identify author's purpose
VIDEO	<i>A Tribute to Discomfort</i>	<i>Crisis Mapping</i>	<i>Should We Eat More Bugs?</i>	<i>The Footprint of Fans</i>
WRITING	<p>Genre: <b>Biography</b></p> <p>Focus: Identify chronological order</p>	<p>Genre: <b>Persuasive essay</b></p> <p>Focus: Express point of view</p>	<p>Genre: <b>Restaurant review</b></p> <p>Focus: Use facts and opinions to review</p>	<p>Genre: <b>Problem and solution essay</b></p> <p>Focus: Present facts and personal reflection</p>
MISSION	<p><b>Test Your Limits</b></p> <p>National Geographic Photography Fellow: <b>Cory Richards</b>, Photojournalist</p>	<p><b>Do Your Part</b></p> <p>National Geographic Explorer: <b>Patrick Meier</b>, Crisis Mapper</p>	<p><b>Know Your Food</b></p> <p>National Geographic Explorer: <b>Barton Seaver</b>, Chef/Conservationist</p>	<p><b>Reduce Your Footprint</b></p> <p>National Geographic Ambassador to the Arts: <b>Jack Johnson</b>, Musician</p>
PRONUNCIATION	Intonation in embedded <i>yes/no</i> questions	Stress in compound nouns	The <i>ar</i> sound	Expressing emotions with intonation
EXPRESS YOURSELF	Creative Expression: <b>Graphic novel</b> <i>The Adventures of Crisis Crusher</i>		Creative Expression: <b>Online invitation</b> <i>Reduce, Re-use, Recycle, Rock!</i>	
	Making connections: Pushing limits while working to help others		Making connections: Sustainable eating and fun	



## 5 Why We Explore

page 76

## 6 Giants

page 92

## 7 Creative Problem-Solving

page 110

## 8 Art Connections

page 126

THEME	Why it's important to explore	Giant plants and animals of the past and present	Problems and how people creatively solve them	Art and our connection to it
VOCABULARY STRATEGIES	<ul style="list-style-type: none"> <li>Prefix <i>en-</i></li> <li>Use pronunciation</li> </ul>	<ul style="list-style-type: none"> <li>Synonyms and antonyms</li> <li>Use word parts</li> </ul>	<ul style="list-style-type: none"> <li>Latin roots (<i>nov, flex</i>)</li> <li>Identify antonyms</li> </ul>	<ul style="list-style-type: none"> <li>Suffixes <i>-ic, -ive</i></li> <li>Identify collocations</li> </ul>
SPEAKING STRATEGY	Hesitating or buying time when answering questions	Speculating about the past and the future	Asking someone to defend an opinion	Interpreting and expressing understanding
GRAMMAR	<p><b>Narrative tenses:</b> Telling a story <i>Barrington Irving had been preparing to become a pilot since he was 15.</i></p> <p><b>Geographic use of <i>the</i></b> <i>I'm going to the Himalayas to climb Mount Everest.</i></p>	<p><b>Relative clauses:</b> Defining and describing <i>Megalodon, which was a fierce predator, was able to catch the largest whales.</i></p> <p><b>Reduction of relative clauses</b> <i>My brother, (who is) a filmmaker, created a documentary about manta rays.</i></p>	<p><b>Wish and if only:</b> Expressing wishes and regrets <i>I wish I were at the technology fair right now.</i></p> <p><b>Adverbs:</b> Expressing different levels of intensity <i>Inventor Kelvin Doe is so clever. But he is rather shy.</i></p>	<p><b>Reported speech:</b> Describing what others say <i>He suggested that art should reflect the world we live in.</i></p> <p><b>Phrasal verbs</b> <i>Artists want to draw their viewers in. A true artist comes up with unique ways to express herself.</i></p>
READING	<i>The Explorer Gene</i>	<i>Discovering Spinosaurus</i>	<i>Great Failures</i>	<i>Microscopic Marvels</i>
READING STRATEGY	Make a personal connection	Make inferences	Take notes	Ask questions about a text
VIDEO	<i>Why Is It Important to Explore?</i>	<i>Super Tree</i>	<i>Sanga's Solution</i>	<i>A Photographer's Life</i>
WRITING	<p>Genre: <b>Compare and contrast essay</b></p> <p>Focus: Use transitions to compare</p>	<p>Genre: <b>News report</b></p> <p>Focus: Include answers to the five <i>Ws</i> and <i>How</i></p>	<p>Genre: <b>Exemplification essay</b></p> <p>Focus: Use relevant examples to explain a topic</p>	<p>Genre: <b>Art review</b></p> <p>Focus: Answer key questions to provide facts and opinions</p>
MISSION	<p><b>Learn by Doing</b></p> <p>National Geographic Explorer: <b>Corey Jaskolski</b>, Engineer/Inventor</p>	<p><b>Make Big Plans</b></p> <p>National Geographic Explorer: <b>Nizar Ibrahim</b>, Palaeontologist</p>	<p><b>Don't Give Up</b></p> <p>National Geographic Explorer: <b>Tan Le</b>, Innovator/Entrepreneur</p>	<p><b>Connect Through Art</b></p> <p>National Geographic Photographer: <b>Stephen Alvarez</b></p>
PRONUNCIATION	Sounds of letter <i>x</i>	Pausing: Relative clauses	Variations in stress and intonation	Stress with phrasal verbs
EXPRESS YOURSELF	<p>Creative Expression: <b>Science-fiction story</b> <i>A Journey to the Centre of the Earth</i></p> <p>Making connections: Exploration and discovery and giants past and present</p>		<p>Creative Expression: <b>Contest</b> <i>Droidganiser</i></p> <p>Making connections: Creative problem-solving and art</p>	

# Meet the Explorers



## Unit 1

**CORY RICHARDS** Photojournalist

Cory Richards takes pictures all over the world. He uses these photos to tell stories about people and places around the world. He's been to all seven continents, climbed some of the tallest mountains on Earth and hiked in below-freezing temperatures. Cory has overcome extreme obstacles and has pushed himself to his limit. He doesn't mind being out of his comfort zone. Do you?



## Unit 2

**PATRICK MEIER** Crisis Mapper

Did you know that social media posts, text messages and emails can save lives? Thanks to crisis mappers like Patrick Meier, people affected by natural disasters can get help faster. Patrick sorts through their communication and creates crisis maps that he shares with rescue teams. Patrick believes that, when people collaborate and use technology, they can make a difference.



## Unit 3

**BARTON SEAVER** Chef/Conservationist

Barton Seaver wants you to think about what you eat. As a chef and conservationist, Barton has travelled all over the world to cook and eat different foods. He likes to learn about people and cultures through food. Now he works to raise awareness about healthy eating and seafood sustainability.



## Unit 4

**JACK JOHNSON** Musician

Jack Johnson is a musician, surfer and environmentalist. He uses his music to promote sustainability and conservation. Jack travels to his concerts in biofuel buses and promotes sustainable local food at his shows. Jack proves that being green and having fun can go hand-in-hand. What do you like to do for 'green fun'?





## Unit 5

**COREY JASKOLSKI** Engineer/Inventor

Corey Jaskolski is an engineer who creates technologies so that people can virtually explore the world. With his 360-degree camera, anyone can explore inside of King Tut's tomb without harming its artefacts or swim in the deep sea alongside the sharks without leaving home. Corey's gadgets help explorers protect what they discover. Do you use technology to explore?



## Unit 6

**NIZAR IBRAHIM** Palaeontologist

Nizar Ibrahim is German/Moroccan and as a child in Germany, he wanted to learn about dinosaurs. He's lucky because now that's his job as he searches for dinosaurs in Morocco. He decided to hunt for dinosaurs there because very little research has been done in the Sahara Desert. Imagine how excited he was to find fossils of a prehistoric giant, *Spinosaurus*.



## Unit 7

**TAN LE** Innovator/Entrepreneur

Have you ever wanted to be able to move objects with your mind? Tan Le created a portable brain scanner that can do just that! It also helps doctors better understand the healthy human brain. Tan went through a long process of trial and error before her brain scanner worked, which taught her that failure is a step towards success.



## Unit 8

**STEPHEN ALVAREZ** Photographer

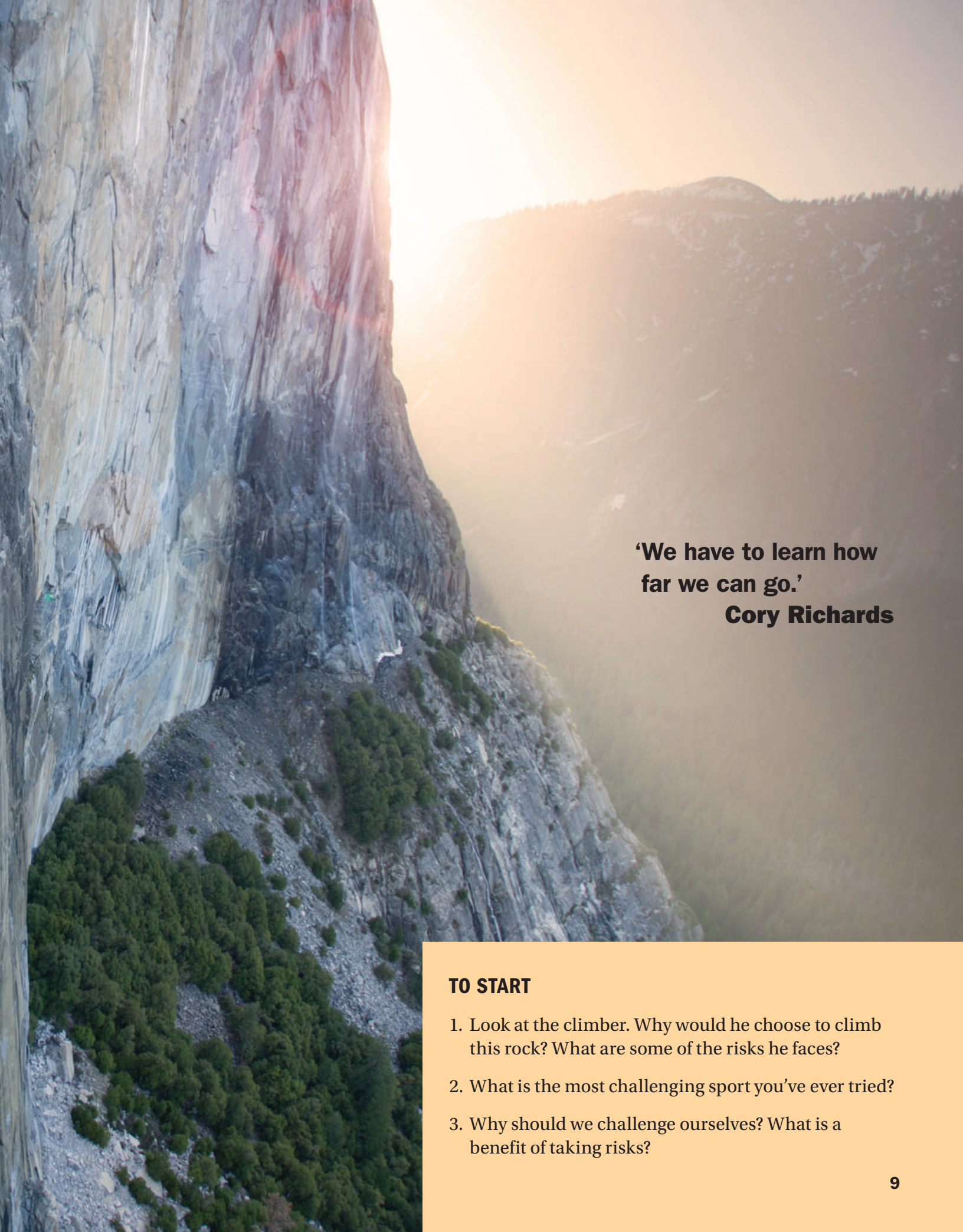
Photographer Stephen Alvarez believes art has the power to connect people across time and distance – even from the prehistoric world to people today. In 2014, he photographed ancient art in the Chauvet-Pont-d'Arc cave in France. These paintings were made 36,000 years ago! Stephen felt very connected to the ancient artists that created them. Does art help you connect with others?

**Unit 1**

# Pushing the Limits




Free-climbing the Dawn Wall in  
Yosemite National Park, United States



**‘We have to learn how  
far we can go.’  
Cory Richards**

### **TO START**

1. Look at the climber. Why would he choose to climb this rock? What are some of the risks he faces?
2. What is the most challenging sport you’ve ever tried?
3. Why should we challenge ourselves? What is a benefit of taking risks?

**1 Why do we take risks?** Discuss. Then listen and read.  002

Have you ever **pushed yourself** to your **limit**? Do you know anyone who has? Do you ever wonder what can be gained by climbing a tall cliff – or jumping off it? Why do something that causes the body **pain**?

People can be transformed by pushing themselves. These experiences teach **determination**. Often, the desire to achieve our goal **enables** us to take risks. Many people take mild risks. Others feel a need to reach the unreachable. These **extreme** athletes test their own **mental** and **physical** boundaries.

In most traditional sports, athletes compete against one another. But in extreme sports, the biggest **opponent** is nature. In this photo, Olympic snowboarder Jussi Oksanen glides down the side of a glacier. Snowboarding on solid ice is **hazardous**, especially with a 12 m. (40 ft.) drop below the glacier! But for extreme athletes like Oksanen, risk is just a part of the job.



The same is true for big-wave surfers. Animals such as sharks and jellyfish pose serious risks to surfers. Another **obstacle** that surfers must **overcome** is the force of the water. After this photo was taken, surfer Koa Rothman was taken under by the unbelievable force of the wave. So why do it? 'The view I had right here was one of the most amazing things I have ever seen in my life,' says Koa. 'Being in the middle of all that energy is unexplainable!'

Athletes who participate in the *Marathon des Sables*, or Mds, need to have incredible **endurance**. In this desert marathon, participants must cross a distance of approximately 250 km. (155 mi.) over five or six days. The event takes place in the Sahara Desert, where temperatures can reach more than 50°C (122°F). It's no wonder that the Mds is considered the toughest race on Earth!

The athletes shown in the photos are **role models** for anyone seeking adventure. Do they inspire you to push your own limits?

Big-wave surfing



Desert-marathon running



2 **LEARN NEW WORDS** Listen and repeat. 🔊003


3 **Work in pairs.** Which of these sports would you try? Why would you try it? What risks would you face?

**4 Read and write the words from the list.** Make any necessary changes.

determination	hazardous	mental	obstacle	opponent
overcome	pain	physical	push himself	role model

Photographer and adventurer Cory Richards is used to difficult conditions. Cory has \_\_\_\_\_ many difficult \_\_\_\_\_ to bring us some incredible outdoor action photography. Cory believes that pushing his \_\_\_\_\_ and \_\_\_\_\_ limits helps him to better connect with himself and with the world.

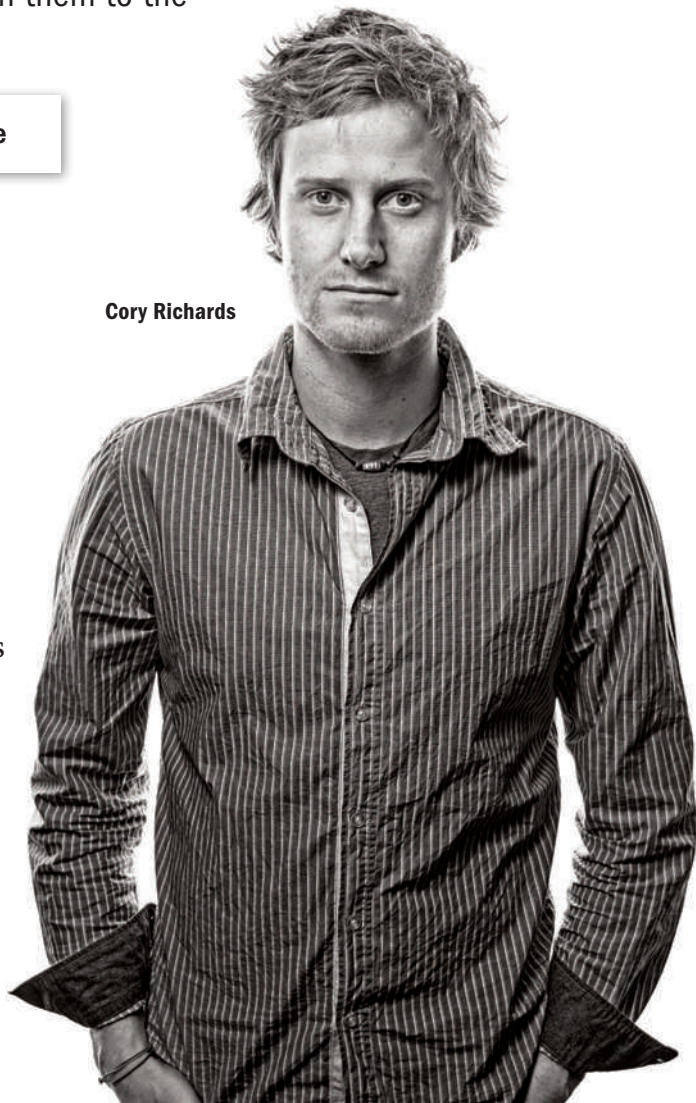
In 2011, Cory successfully climbed an 8,000 m. (26,000 ft.) peak in the middle of winter. However, due to the \_\_\_\_\_ conditions, this challenge nearly cost him his life. On the way down, Cory and his team were caught in a major avalanche. ‘Once the avalanche took us, there was no more fear,’ says Cory. Although this experience scared him, he still takes risks to get a great photo. Cory’s \_\_\_\_\_ and endurance make him a great \_\_\_\_\_.

**5 LEARN NEW WORDS** Listen to the words and match them to the definitions. Then listen and repeat.  004 005

achieve	boundary	unbelievable	unreachable
---------	----------	--------------	-------------

- \_\_\_\_\_ 1. incredible
- \_\_\_\_\_ 2. limit
- \_\_\_\_\_ 3. gain through hard work or effort
- \_\_\_\_\_ 4. impossible

Cory Richards



**6 YOU DECIDE** Choose an activity. Work in pairs.

1. Talk about characteristics that adventurers like Cory need to have. Which of these characteristics do you have? Which would you like to have?
2. Role-play an interview between a TV reporter and an extreme athlete who has just completed a new challenge.
3. Invent an extreme sport. Work together to make a poster describing a competition for this sport.

## SPEAKING STRATEGY 006

### Showing interest in a conversation

#### Statement

#### Responses

I love surfing.

Wow! What's that like?


Really! I never knew that you could surf.

What can you tell me about surfing?

Tell me more about how you learnt to surf.

What about you? Do you like extreme sports?

You're a surfer? Me, too!

**1 Listen.** How do these speakers show interest in the conversation? Write the phrases you hear.  007

**2 Read and complete the dialogue.**

Lee: What are you doing, Jon?

Jon: I'm getting ready for my next mountain bike race.

Lee: Really! \_\_\_\_\_ you raced.

Jon: Yeah, I've been racing for about three years.

Lee: \_\_\_\_\_

Jon: It's very cool. \_\_\_\_\_ Do you do any extreme sports?

Lee: Yeah, I like rock climbing. And I'm getting ready for my first extreme ironing competition.

Jon: \_\_\_\_\_ what it's like to do extreme ironing.

Lee: I can't yet - I've never done it!

**3 Work in pairs.** Throw the cube. Make a statement about the topic on the cube. Your partner uses the phrases above to maintain the conversation. Then swap roles.

**4 Work in groups.** Do you take risks? Share stories about risks you have taken. Tell one true story and one false story. See if your group can guess the true story. Use the phrases above to maintain the conversations.



Go to page 153.

**GRAMMAR** 008

**Embedded clauses, questions and commands**

I think ... Extreme sports are dangerous.

**I think extreme sports are** dangerous.

I wonder ... What obstacles has Cory overcome?

**I wonder what obstacles Cory has overcome.**

Do you know ... Can we climb that mountain in winter?

**Do you know if we can climb** that mountain in winter?

I'm asking you ... Try downhill mountain biking.

**I'm asking you to try** downhill mountain biking.

**1 Work independently.** Listen to the speakers. Then complete the embedded clause, question or command. Remember to change the order of words when necessary. 009

- 1. She's guessing \_\_\_\_\_
- 2. He's wondering \_\_\_\_\_
- 3. You're telling me \_\_\_\_\_
- 4. I think \_\_\_\_\_
- 5. I'm asking you \_\_\_\_\_


**2 Work in pairs.** Make sentences to form embedded clauses, questions and commands.

- |                    |  |
|--------------------|--|
| I wonder           | Wear a helmet when you ride your bike. |
| I think            | Had Cory been in an avalanche before?  |
| I'm asking         | Teach your brother how to surf.        |
| I'm telling        | How many countries has Cory visited?   |
| Do you remember if | You could try ice climbing.            |

- 1. \_\_\_\_\_
- 2. \_\_\_\_\_
- 3. \_\_\_\_\_
- 4. \_\_\_\_\_
- 5. \_\_\_\_\_





**3 LEARN NEW WORDS** You've learnt about physical challenges. Now listen and read about a mental challenge. Then listen and repeat.  010 011

A **non-traditional** sport, such as ice climbing, can really push us to our physical limits. But have you ever done anything that pushes you to your mental limits? Around the world, students participate in tough academic competitions, such as Maths Olympiads. These **events** require a lot of training, just as an extreme sport does. The competitions often require students to **struggle** with complex problems. Sometimes it takes over an hour to complete just one!

Nur Muhammad Shafiullah knows first-hand how the Maths Olympiads can push mental limits. He is the youngest student ever to compete in the International Mathematical Olympiad. At 15, Nur Muhammad went to the international competition to **represent** his native country, Bangladesh. He competed against students from 125 countries and took the bronze medal! The next year he did it again. The year after that he earned a silver medal. Nur Muhammad's maths skills are really unbelievable. What about you? Do you think the International Mathematical Olympiad is beyond your mental limits?



**4 Work in pairs.** Write sentences using the words below. Include an embedded clause, question or command in each sentence.

1. wonder / time / event I wonder if the event takes much time.
2. guessing / struggle / difficult \_\_\_\_\_
3. think / student / prepare \_\_\_\_\_
4. telling / non-traditional / sport \_\_\_\_\_
5. asking / represent / country \_\_\_\_\_

**5 Work in groups.** Think of other competitions that provide mental challenges. What do you know about them? What questions do you have? Discuss in your group, using embedded clauses, questions and commands as much as possible.

**1 BEFORE YOU READ Discuss in pairs.** Look at the photos, caption and title. What do you think this reading is about?

**2 LEARN NEW WORDS Find these words in the reading.** What do you think they mean? Use a dictionary to check. Then listen and repeat. [🔊 012](#)

beyond    consequence    in control    limb    peak performance

**3 WHILE YOU READ Pause after each paragraph to write what it's about in your own words.** [🔊 013](#)

**4 AFTER YOU READ Work in small groups to answer the questions.**

1. How did Amy lose her legs?
2. What other negative consequences did Amy suffer from meningitis?
3. What happened the first time Amy tried to go snowboarding again?
4. What did Amy learn about limitations?
5. How does Amy work to help others?
6. If she could, would she go back to her former life? Why or why not?



Amy Purdy snowboarding