



UNDER ANTARCTICA

Booklet n°8 - The Penguins' Council

Heidi

Paco

Matthieu



Geographical South Pole: it's magical

“Upon arriving at the Geographic South Pole, we were welcomed with great human warmth, full of emotion and memories. Between wonderful encounters, baklavas fresh out of the oven, and shared moments at the end of the world, this stop did us a world of good. We were able to rest, repair our equipment, and even receive two brand-new pulks. After a short two-day break, we set off again for the final major stage of our journey!”



[Video of our adventurers](#)
[“going around the world”](#)



**Buildings of the
Amundsen–Scott
Antarctic Base, at
the Geographic
South Pole.**



Save the date : video call n°2 on 19/01/26 at 9:30AM!



Join us on Monday, January 19 at 9:30 AM for a second special video call with the Under Antarctica duo (and of course, Paco)! Like last time, Heidi and Matthieu will answer students' questions about the different topics of their expedition, especially about the theme of the last Booklet n°8, which will be sent on 14/01/26: the Penguin Council.

[Sign up now via this link and send us your question in advance.](#)

A replay video will also be available after the call for those who cannot attend.



The Penguins' Council

Password?

ACTION!

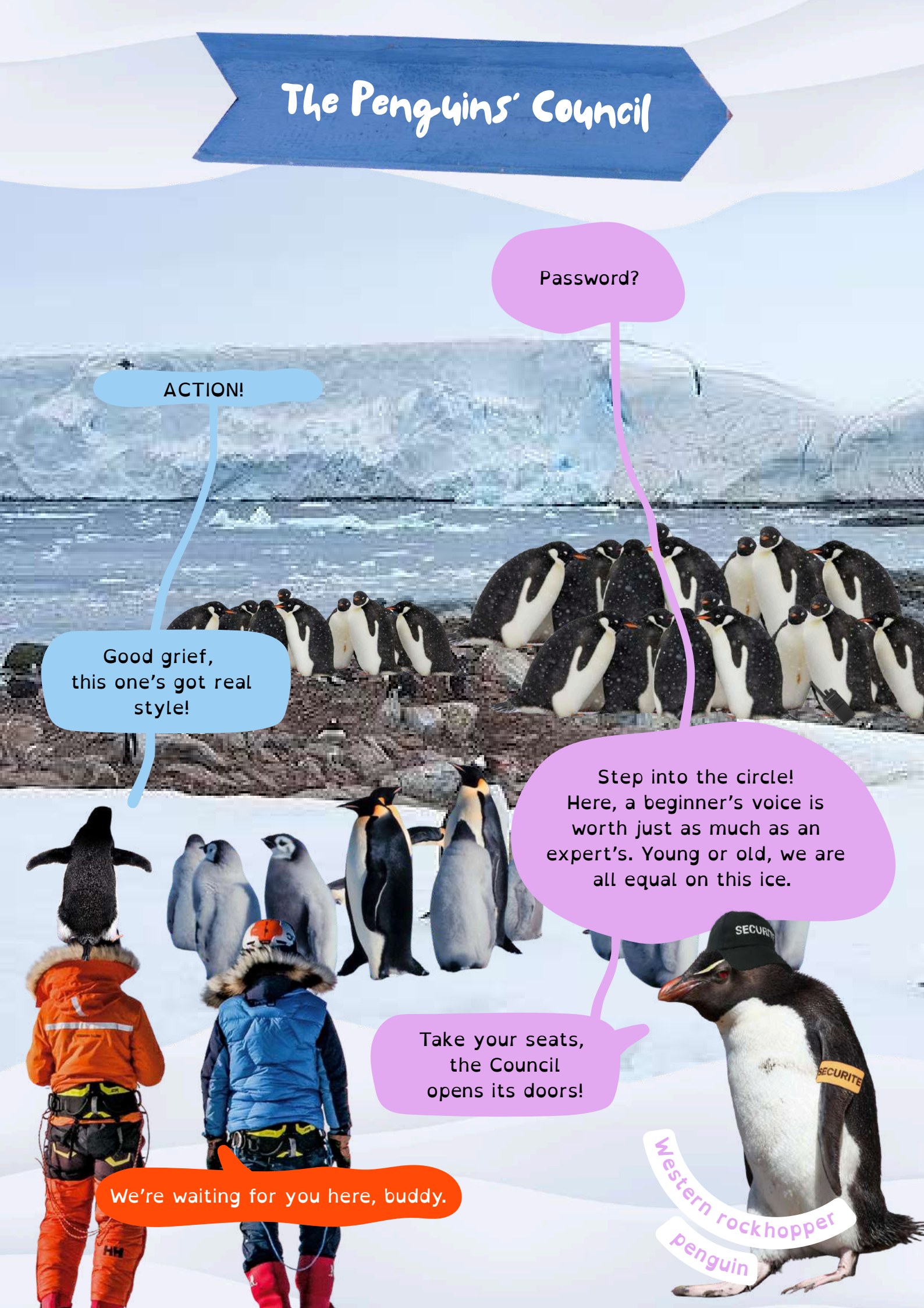
Good grief,
this one's got real
style!

Step into the circle!
Here, a beginner's voice is
worth just as much as an
expert's. Young or old, we are
all equal on this ice.

Take your seats,
the Council
opens its doors!

We're waiting for you here, buddy.

Western rockhopper
penguin





Dear cousins, I'm Paco.

I left my beach and crossed Antarctica by ski-kite to answer your call. After 4,000 km in the cold, extraordinary characters encountered, and nights spent listening to the snoring of two humans, I believe I've understood the origin of all your troubles.



Ohhh! It's the rude chick from last time...

So it was you, the Cape penguin, who found my letter...

Friends, Paco's investigation concerns all of us. He is not just a simple messenger; he is the one who connects our destiny to that of the rest of the world. Let us listen together. Paco, the floor is yours.

Hey, I know that one!

Emperor penguin



First of all, I would like to remind everyone of **the rules of this council**, so that everyone may speak freely, without judgment, and with mutual respect.

1 Active listening

I give my full and kind attention to the person speaking, without interrupting.

Speak in the "I" **2**

When expressing my opinions and feelings, I use "I" ("I think...", "I believe...") rather than "we" to avoid generalizations and take responsibility for my personal opinion.

3 Right to make mistakes

I accept that I don't know everything, that I can be wrong, or that I can change my mind, without fear of being judged.

Talking stick **4**

I only speak when I have the talking stick, ensuring a fair and respectful turn to speak.



5 Collective intelligence

We seek solutions and new ideas together, valuing diverse points of view rather than trying to "win" the debate.



Psst, you can use these rules for your next discussions with your friends!

After your long journey, could you explain to us why it's getting warmer and what the consequences are?

Let me make a diagram for you! It all starts with fossil fuels.

Humans rely on them for many aspects of their daily lives!

CAUSES

USE OF FOSSIL ENERGIES



THE GREENHOUSE EFFECT BECOMES TOO STRONG



CO₂ CH₄



The greenhouse gases they emit trap some of the heat reflected by the Earth and warm the entire planet.

CONSEQUENCES

IT GETS HOTTER



+1,3°C
depuis 1850

THE GLACIERS MELT



More than 2 billion people also depend on glaciers for drinking water.

THE SEA ICE MELT



THE EARTH'S WHITE T-SHIRT IS TURNING DARK



BIODIVERSITY IS DECLINING



OCEAN LEVELS ARE RISING



In summer, the sea ice becomes a garden of microscopic algae that krill feed on. The less sea ice there is, the less krill there is.

Thank you, Professor Paco!

I'm not a professor! What I've learned is thanks to Heïdi, Matthieu, and everyone I've met along the way. Whether as scientists or as **witnesses of climate change**, everyone has a voice.

By the way, here are a few people who wanted to send you a little message:

Hello to all the little balls of feathers!

With my thousands of years of existence, it's hard for me to move, but I must carry the voice of my 275,000 peers. We are the guardians of Earth's climate memory: our role is crucial for regulating the climate, preserving freshwater, and protecting biodiversity.

Climate warming is real, as shown by these photos of France's largest glacier. Yet, all is not lost: every ton of CO₂ avoided saves a bit of ice.

So, I'm counting on you.

Mr Glacier



From up here, I see everything: the ice is losing height. Polluters and cheaters are in my sights. With your actions and my sharp eyes, together, we'll be a team of brilliant superheroes!

I dance in the endless cycle of water,
Compacted, I keep the secrets of the past.
I fear becoming too warm,
For as a liquid, the oceans will rise.



I am not evil, far from it,
Life on Earth exists thanks to me.
But in excess, I make it suffocate,
And the planet begins to overheat.



Before drooling, let's make a pact:
protect the sea ice, and the krill will thrive!

Your meals will be heavenly,
And the Earth will breathe.

Krill



Yum yum!

Macaroni penguin



The skeptic



Western rockhopper penguin

Yeah... You say it's melting, but last winter my feet were nice and cool! Besides, the climate has always changed!

The climate has always evolved, but never this fast, which doesn't give us time to adapt. As for last winter, you're mixing up weather, which is like a snapshot of conditions at a specific moment, and climate, which describes temperature trends over the long term.

Uh, what he's saying really scares me... What if we starve? What if the ice melts under our feet, where will we go?

It's normal to be scared. But it's not inevitable: it's a challenge we can face together. The best way to fight **eco-anxiety** is through **ACTION**. It restores hope and prevents you from staying in panic. And above all, the more of us who act, the faster the changes will come!

The eco-anxious



Antipodean penguin

The fatalist



King penguin chick

Why bother? If the krill disappears and the water rises, we'll end up sinking, that's all. It's the way things are. We penguins are too small to change anything.

I understand... But this disruption is mainly caused by **human choices**. If humans reverse their efforts, this time to save the planet, they can make up for it!





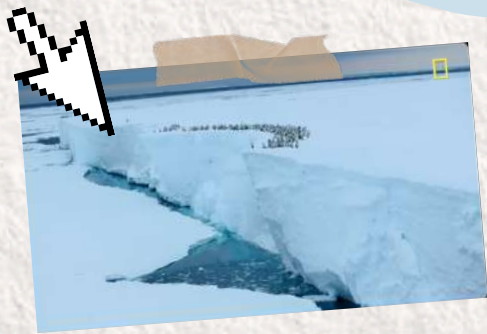
I believe we need to create new visions, a way of life that consumes less but is just as **desirable**.

In the face of these changes we're seeing, we need to stick together.



Like us, do the "turtle formation": huddle close together!

Exactly! If the ice breaks, we don't stop: we dive in and forge a new path. Changing our habits also means discovering **new horizons!**



Emperor penguin chicks leap off a 15-meter cliff in Antarctica.



Chinstrap penguin

Here, we live with the bare minimum on the most barren ice in the world. Humans could learn to distinguish what's essential from what's **superfluous**.

Moreover, taking care of the Earth means keeping water clean and air fresh for all living beings.



Paco, what can they actually do in practice?



The key is to reduce your **greenhouse gas emissions**. Individually, it's possible to apply these methods before consuming.



The 4 R



REDUCE

consume less and only what is necessary.



REUSE

give objects a second life, sell or buy second-hand.



REPAIR

try to fix things instead of replacing them! It's often cheaper in both money and resources.



RECYCLE

recycle items to limit waste and pollution. There are even bins made for that.

The B.i.S.O.U. method

BASIC NEED

Do I really need this item? Where does this desire come from?

IMMEDIATE

Do I need it now? Is it urgent?

SIMILAR

Do I already have a similar item?

ORIGIN

Where does the item come from? How was it made?

USEFUL

Will I really use it? How many times?

Also, we should try to prioritize carpooling, public transport, and walking. We can replace the car with a bike, and the plane with a train!



1 km
by plane 
=
80 km
by train 

And include more vegetarian or vegan recipes in our diet!



Wow... All these possible actions give us **hope!**



You're in a world of rainbows and penguin-unicorns, where individuals are too small to change anything! And it's the companies that pollute and the governments that do nothing!



It's too easy, grumpy penguin, to put the blame on others! This is what's called the "triangle of inaction."

Citizens



"Politicians do nothing for the public good and only think about the next elections."

"Companies pollute; they slow down ecological initiatives."

"We get the politicians we deserve: it's up to citizens to vote for the leaders they want."

"It's someone else's fault..."
"What's the point..."

"We're just meeting customer needs; it's up to the consumer to make the choices."



Government



Companies

"If I impose too many restrictions on companies, they will leave."

"It's up to the government to set new rules: if we act before our competitors, we'll lose money."



We can transform this triangle into a **triangle of action**: by becoming aware of our own power, acting at our own level, inspiring others, and believing in the cumulative effect ($1+1+1+\dots = \text{lots of people}$).

Well spotted, Paco!



Here is our **guide**, the result of everyone's work. It lists collective action solutions to act as quickly as possible! Alone, I am a wave; together, we are the ocean.

We've seen that we can act individually, but this triangle of action shows us the importance of **collective action**! How about we get moving and share some ideas that everyone could be inspired by?



TAKE ACTION!

Join a local association or a collective



Near you, many associations or collectives exist: community gardens, clean walks, raising awareness about the environment among friends and family. Anything is possible! Why not join one of these initiatives?

Vote and protest for a better future



As a democracy, our vote at the European, national, regional, and local levels influences environmental decisions.

Protesting is a way to make your disagreements and desires heard when they aren't being listened to. It's a right given to all citizens, regardless of age.

Boycott : an effective way



Boycott means, for example, not buying the products or services of a brand or company that does not respect the environment.

Instead, we can support companies that produce responsibly and commit to protecting the environment.

And you, which brand would you like to support for its positive impact on our planet?

Unite for a just world



On our planet, many people fight not only for the environment but also to defend their rights, equality, and better living conditions.

By supporting these causes together, we become stronger and can build a fairer future for everyone.

At 15, Greta Thunberg launched a student protest against her Swedish government for climate inaction. Her movement grew to a global scale. In March 2019, 1 million students across 125 countries protested for the **protection of the planet**.

Heidi, Matthieu,
join us!


Heidi, Matthieu, thank you for sharing your knowledge and taking one of ours under your wing across the vast white expanse. On behalf of the entire colony, we hope your research will bear fruit and that your concern for climate issues reaches the hearts of children. Do you have a few final words?

Thank you for joining us on this exceptional adventure. We hope Paco has brought you enriching knowledge...

...and that his passion has sparked your curiosity for this continent and for the preservation of our environment!

Now, to close our council, let's "jabber" together so that our ideas cross the oceans and land in attentive ears.





I have traveled far, far from home, well beyond the borders of my colony. In this vast expanse of ice, where the wind tears through the silence of the white desert, I have understood that Antarctica is not the end of the world, but the beating heart of an interconnected planet. A sanctuary of a magnificent and unique ecosystem, an invisible regulator of our climate, it also embodies, for humanity, a model of peace and scientific cooperation. Its ice, a library of past climates, whispers essential lessons to help us anticipate the future.

Today, we know what the problem is, and knowledge allows us to act.

So, to protect our glaciers, our oceans, our forests, and all the animals we love so much, there is only one word of command: **ACTION**

Paco

And all his friends met
along the way

**Put yourself in
Paco's shoes!**

Ask someone to read Paco's letter to you, and write the text while trying to make as few mistakes as possible!

WHAT IS/ARE THE MAIN
DIFFERENCE(S) BETWEEN A
GLACIER AND SEA ICE?

- SEA ICE IS MADE OF SALTWATER, GLACIERS ARE MADE OF FRESHWATER. ☐
- SEA ICE FORMS FROM ACCUMULATED SNOW, GLACIERS FORM FROM RAIN. ☐
- SEA ICE IS THICKER THAN GLACIERS. ☐

WHAT SPECIES OF
PENGUIN IS PACO?

- EMPEROR PENGUIN ☐
- ADÉLIE PENGUIN ☐
- CAPE PENGUIN ☐
- MAGELLANIC PENGUIN ☐



BIG FINAL QUIZZ

Have you become an
expedition expert?

Tick the correct answer(s) for
each question. You can use your
previous notebooks to help you
answer!



WHAT JOB DOES PACO
WANT TO DO?

- EXPLORER ☐
- GLACIOLOGIST ☐
- DOCTOR ☐
- RAP SINGER ☐

WHAT WAS THE MAIN
OBJECTIVE OF THE ANTARCTIC
MISSION?

- TO ANALYZE THE ICE USING RADAR, IN ORDER TO BETTER UNDERSTAND ITS CHARACTERISTICS AND TRY TO PREDICT FUTURE SEA-LEVEL RISE. ☐
- TO TEST WHETHER PENGUINS WOULD AGREE TO DO "CO-PULKAGE" (PULK SHARING) ACROSS ANTARCTICA. ☐

Lexicon

e

Eco-anxiety: the distress linked to becoming aware of ecological upheavals and the uncertainty surrounding the future of the planet. It can take different forms, ranging from simple worry to the development of anxiety or depressive disorders. The best way to fight it is through action.

j

To jabber: a verb meaning to talk a lot, to make small sounds in order to communicate with others.

S

Sanctuary: a protected and preserved place, a natural refuge where an exceptional ecosystem can thrive, sheltered from human disturbance.

Skeptic: a person who doubts claims or beliefs. A climate skeptic is someone who questions, downplays, or denies scientific conclusions about climate change, particularly the influence of human activities on this phenomenon.

Superfluous: something you can do without easily, because it isn't really necessary to live well. When protecting the planet, avoiding the superfluous means, for example, keeping only what is useful and not wasting resources.

To go further



Thanks to this little game, which you can play with family, in class, or with friends, protect your planet with small everyday actions!



For parents, teachers, and curious minds who want to measure their carbon footprint.

Give your opinion on The booklets!

Attention readers, the floor is yours, it's time to speak up! Take a few minutes to answer our questionnaire and share your experience with Under Antarctica. We can't wait to read your feedback.



Who are we?



We have a message for you!

Click here to watch our thank-you video made especially for you. You'll learn more about our professions and how we worked on the project..



The goal of Témoins Polaires (Polar Witnesses): to raise awareness among young people about the climate transition through science and the wonder of polar regions. More than 60,000 people have already been reached alongside us.

Our different educational programs that might interest you:

- **The Polar Workshop (and its Polar Fresk):** half-day climate change awareness workshops, using the beauty and fragility of the poles, held aboard a tall ship or in immersive settings. We offer three formats adapted to different levels, from CM1 (4th grade) to higher education, in line with school curricula. Register your class via our website.
- **The Polar Summit:** year-long monitoring and support of student-led study projects during the school year. Classes benefit from in-depth training and meetings with polar specialists (scientists, explorers, etc.). To learn more, visit the dedicated webpage.
- **The Silartik board game:** facilitation of Silartik sessions, an educational board game designed to understand the climatic, economic, and geopolitical challenges of the Arctic. Whether you are a high school teacher, a higher-education instructor, or a professional, there's a version for you—discover them here!

To learn more about how we work and our different programs:
temoinspolaires.fr



Théo



Charlotte



Marguerite



Corentin



Marc



Matthieu



Jeanne

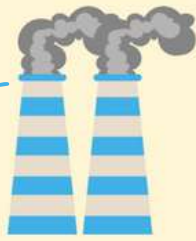


Mathilde

And a HUGE thank-you to Claude and Lana for their expertise on these polar regions, as well as to Hilary and Stéphanie for their invaluable proofreading.

Polar fresh cards to cut out

USE OF FOSSIL
ENERGIES



THE EARTH'S
WHITE T-SHIRT
IS TURNING
DARK



THE GLACIERS
MELT



BIODIVERSITY
IS DECLINING



THE SEA ICE MELT



THE GREENHOUSE
EFFECT BECOMES
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IT GETS
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OCEAN LEVELS
ARE RISING



GAMES SOLUTIONS

Big final quizz

What is/are the main difference(s) between a glacier and sea ice?

Sea ice is made of saltwater, glaciers are made of freshwater.

What species of penguin is Paco?

Cape penguin.

What was the main objective of the Antarctic mission?

To analyze the ice using radar, in order to better understand its characteristics and try to predict future sea-level rise.

What job does Paco want to do?

Glaciologist.