SESI LAB

Climate change is no longer a distant threat; it is a current reality reshaping our daily lives. The familiar patterns of the past are shifting, giving way to a "new abnormal": extreme events, such as intense droughts, torrential rains, and heatwaves, are becoming increasingly frequent.

Addressing this complex reality requires more than scientific knowledge. We must reconsider our habits, cities, and relationship with the planet. The exhibition *Clima*, o *Novo Anormal* [Climate: The New Abnormal] highlights these challenges and encourages both reflection and action.

This booklet is yours to take home. Inside, you will find games and information that revisit what you saw in the exhibition, allowing you to continue reflecting on the paths that brought us here and the challenges that lie ahead in this changing world. Explore this booklet however you wish—there is no single right order to follow.

#### **EXHIBITION "CLIMA: O NOVO ANORMAL"**

October 10 to December 14, 2025

#### **OPENING HOURS**

Tuesday to Friday

9:00 a.m. - 6:00 p.m. (last entry at 5:00 p.m.)

Saturday, Sunday, and holidays

10:00 a.m. - 7:00 p.m. (last entry at 6:00 p.m.)

#### **TICKET PRICES**

Full price: R\$ 20.00

Half price: R\$ 10.00\*

\*according to current legislation

## **FREE ADMISSION**

Check our website for the free admission policy. Find out which days are free for all visitors.

#### **ACCESSIBILITY**

We have tactile flooring around the building and in signage for restrooms and elevators, as well as wheelchair-accessible entrances. Tactile models and raised floor plans allow visitors to explore the architectural structure of the building and its surroundings, as well as the exhibition spaces at SESI Lab. We provide captions and orientation texts in Braille and large print where applicable, as well as audio description and sign language (Libras) available via QR Code.

Every first Sunday of the month is Accessible Day, when the museum is adapted for neurodiverse visitors and those on the autism spectrum.

## **EDUCATIONAL PROGRAM**

SESI Lab offers educational visits for scheduled groups, professional training for educators, workshops, and other activities. For more information, contact us at educativo@sesilab.com.br

## **SESILAB**

Setor Cultural Sul, Bloco A - 70070-150 Asa Sul, Brasilia - DF www.sesilab.com.br @sesi.lab SESI Lab is an interactive science museum established by the Industry Social Service (SESI), part of the Brazilian National Confederation of Industry (CNI). Here, art, science, and technology converge to shape future possibilities. We believe everyone can be an agent of change—which is why we seek to inspire ideas and actions today.

Since opening, SESI Lab has worked with annual themes that keep its programming vibrant, connecting knowledge with industry and real life.

In 2025, the theme is **Energy and Energy Transition** — an urgent global issue that mobilizes companies, universities, and governments around the world in the effort to confront climate change.

It is in this context that we present the new temporary exhibition Climate: The New Abnormal, conceived by Universcience and first shown at the Cité des sciences et de l'industrie in Paris, with the support of the French Embassy in Brazil, and with Fernando Meirelles directing the Brazilian adaptation.

By hosting this exhibition, SESI Lab reaffirms its commitment to integrating science, society, and industry—promoting innovation, sustainability, and social responsibility. The exhibition broadens the dialogue, brings diverse perspectives, enriches visitors' understanding, and issues an urgent invitation to reflect on the climate and the planet's future.

Enjoy your visit!

# Claudia Martins Ramalho

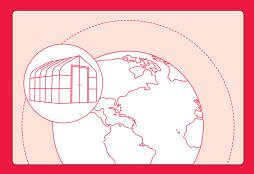
Director of cultural affairs, SESI Lab

Which data, images, or ideas stayed with you the most? Use this space freely to record your reflections, questions, or sleepless thoughts. Write, sketch, doodle — leave a personal record of your journey through these ideas.		

Now that you've visited th	e exhibition,	try to reca	II what you saw
to answer these questions	<b>S:</b>		

In the face of the climate emergency, what individual changes can you make?
What are the most important collective changes that need to happen? Try to list at least three possibilities.
Is there a solution for the problems caused by climate change? What did you see in the exhibition that points toward a better future?

# A CLIMATE VOCABULARY



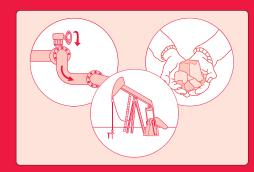
# **GREENHOUSE EFFECT**

Earth's atmosphere has a layer of gases that traps heat, like a blanket that keeps the planet from freezing. But over the past centuries, humanity has added so many extra layers of gases (by burning fuels and cutting forests) that the planet is heating up more and more.



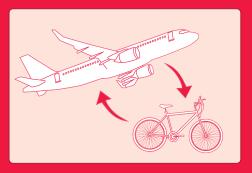
# GLOBAL WARMING/ CLIMATE CHANGE

An excess of greenhouse gases alters the Earth's climate: temperatures rise, evaporation increases, and extreme events like storms or droughts become more frequent.



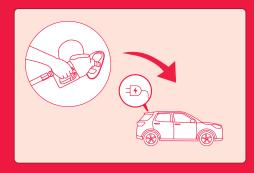
# **FOSSIL FUELS**

There are three main fossil fuels: coal, oil, and natural gas. They are made from ancient microorganisms and plants that decomposed and "cooked" underground for millions of years until only carbon and hydrogen molecules remained.



# **CARBON FOOTPRINT**

The "mark" each of us leaves on the planet—whether as an individual, a family, or a company—is measured by our energy use and consumption. The richer the lifestyle, the larger the footprint: the wealthiest 10% are responsible for two-thirds of the emissions that heat the planet.



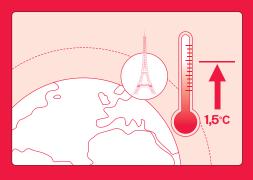
# **MITIGATION**

Actions that slow down greenhouse gas emissions—either by cutting them (for example, replacing fossil fuels with renewable energy) or by capturing CO<sub>2</sub> from the atmosphere (such as planting trees).



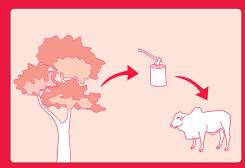
# **ADAPTATION**

When prevention fails, adaptation becomes necessary: changing the way we live. It can mean major engineering works, like building flood basins to prevent inundations, or simple actions, like installing air conditioning in a school.



# **PARIS AGREEMENT**

The first universal accord against the climate crisis was signed in 2015. Its goals: to limit global warming to below 2°C (ideally 1.5°C), to help societies adapt to climate impacts, and to align the world economy with decarbonization. Every five years, countries must submit new, more ambitious targets for emission reduction.



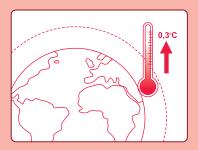
# **LAND-USE CHANGE**

When we transform natural landscapes into farmland or cities—for example, when a forest is cleared for cattle ranching—it goes from conservation to exploitation.

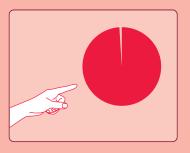
# WE CAN'T SAY WE **WEREN'T** WARNED.

From the smoke of the first coal factories to the hearings in the U.S. Senate, the warnings about climate change have been accumulating for centuries. Science evolved from suspicion to the IPCC's "unequivocal" certainty that human activity is heating the planet. The trajectory of the crisis is more than documented.

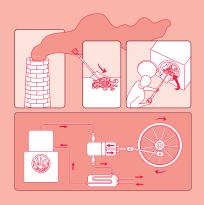
Estes quatro eventos marcam alguns dos marcos da história das mudanças climáticas. Numere os quadros de 1 a 4 para colocá-los na ordem cronológica em que eles aconteceram. O evento que aconteceu primeiro deve ser o número 1, e assim sucessivamente.



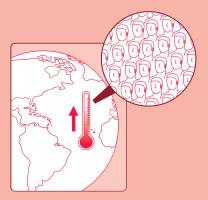
( ) British engineer Guy Callendar claims the world has warmed by 0.3°C since the Industrial Revolution due to greenhouse gas emissions.



( ) American scientist James Hansen testifies before the U.S. Senate, and The New York Times headlines: "Global Warming Has Begun."



( ) Steam-powered factories began operating in the United Kingdom.



( ) The IPCC (Intergovernmental Panel on Climate Change) releases its sixth report, stating that it is "unequivocal that human influence has warmed the atmosphere, the ocean, and the land surface."

# **OIL EVERYWHERE**

Oil is present in many aspects of our daily lives—far beyond the gasoline in our cars. In the crossword puzzle below, find fifteen objects made from petroleum derivatives. The illustrations give a few hints about what they are.

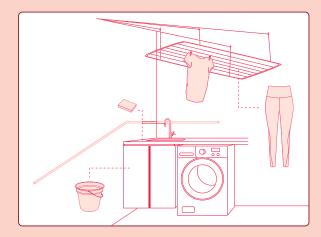


Now imagine a future where we no longer depend on oil-based products. What would your room or your home look like? Describe it in up to five lines. Try to imagine: how do people move around? How do they dress? How do they work and play?





You can also color the images however you like! But pay attention—could the coloring material you're using also be made from oil derivatives? How about trying a sustainable alternative, like plant-based crayons or eco-friendly colored pencils?



# DID YOU **KNOW THAT EVEN A** DOMESTIC **FLIGHT HAS** A HUGE **IMPACT? 11.500** árvores /

A round-trip flight between Rio de Janeiro and Brasília with 170 passengers emits around 34 tons of CO<sub>2</sub>. That number might seem abstract, but the comparisons below show its true scale..

Complete each sentence with
the correct option from the list.

1) The emissions from a single round-trip flight (Rio-Brasília) are equivalent to burning (1)

of coal.

**2)** The same amount of CO<sub>2</sub> represents <sup>(2)</sup> \_\_\_\_\_ of the average

Brazilian's yearly emissions.

**3)** To absorb all that carbon, it would take <sup>(3)</sup> \_\_\_\_\_ from the

Amazon working for an entire year.

**4)** The individual impact per passenger on this full flight is greater than what (4) \_\_\_\_\_ emits in a month.

Options:
25.5 TONS
THREE YEARS
11,500 TREES
AN AVERAGE BRAZILIAN

# THE PROBLEM ON OUR PLATES

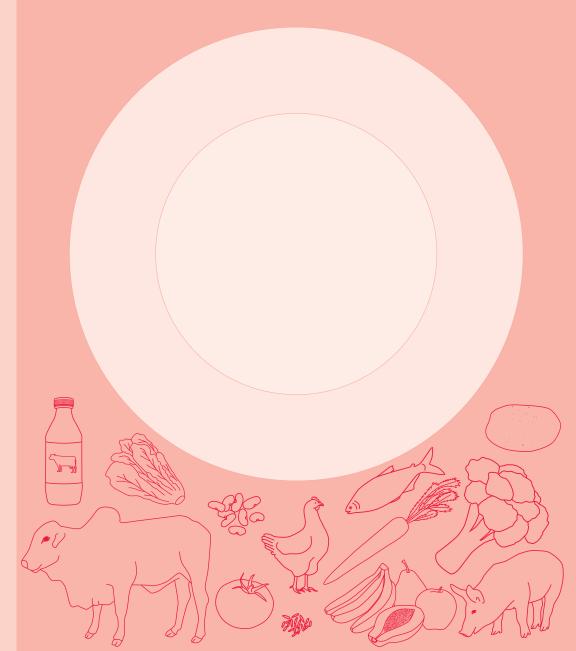
Here's how much CO₂ is emitted by 1 kg of each food:

These data come from SEEG (Greenhouse Gas Emission Estimates System, by Observatório do Clima). They include methane and nitrous oxide converted to CO<sub>2</sub> equivalent. For animal products, emissions consider to include enteric fermentation (the digestive process that releases methane), waste management, and manure use. For plant-based products, they consider emissions from residue decomposition.

# 7,13 2,82 0,95 0,44 0,30 0,158 pork rice milk beef beans corn 0,02 0,02 0,01 -0,18 -0,20 chicken potatoes apples tomatoes bananas

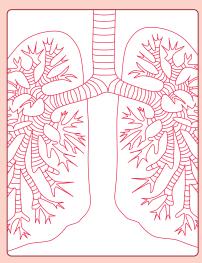
# Your challenge is to build a climate-smart meal!

Draw or describe a lunch or dinner that prioritizes low-emission foods.



# A SICK PLANET

Just like a body, the world also falls ill. Air pollution is its chronic bronchitis, releasing greenhouse gases that heat the planet. Traffic jams are a paralyzing thrombosis, pumping CO<sub>2</sub> nonstop. The loss of green cover—the planet's baldness—removes the lungs that cool the climate. Heat waves are a persistent fever, worsened by concrete and lack of trees. And corruption is the autoimmune disease that diverts vital resources needed to secure our future. Healing our cities means treating Earth's fever.





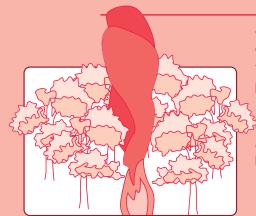


# The allergy season is getting longer.

With more CO<sub>2</sub> in the air, plants like trees and grasses produce more pollen and stronger pollen. Studies show that by the end of the century, pollen seasons will start 40 days earlier and end 15 days later. This is one reason why respiratory allergies are becoming more common and intense.

# Smoke that travels thousands of kilometers

Wildfire smoke, increasingly frequent in a warmer, drier world, knows no borders. It carries ultrafine particles that can reach the lungs and bloodstream. In 2020, smoke from fires in the Pantanal degraded the air in São Paulo, 1,500 km away.



Just as our cities can get sick, everybody can be cared for. Read the "symptoms" below and imagine a possible treatment for each one:

Example:

Air bronchitis (pollution) →

Plant more trees, promote cycling.

Traffic thrombosis (congestion) $ ightarrow$
Green baldness (loss of vegetation) →
Fever (heat waves) →
Autoimmune disease of corruption →

# Which of these symptoms would you heal first?

In the text above, pollution becomes bronchitis, and traffic becomes thrombosis. That's called a metaphor—when we describe one thing using the name of another to make similarities more vivid.

Now it's your turn: invent new metaphors for urban problems.

Example:

Traffic is the city's thrombosis.

The excess of plastic waste is	
The lack of public transport is	
The city's noise is	

# The more creative, the better!

Today I



# **SNEEZE JOURNAL**

With more pollen and smoke in the air, respiratory allergies are becoming stronger and longer-lasting. Imagine yourself living in a future where respiratory illnesses have worsened significantly; write three diary entries as if you were living that moment.

couldn't				
dreamed of				
				=
		0 (	0	

# WHERE DOES THE AIR I BREATHE COME FROM?

Air travels. It can carry pollen, smoke, sea breeze, or the scent of the forest. Write three things that the air could bring to you:

My air could bring	
My air could bring	
My air could bring	



# MITIGATE OR ADAPT?

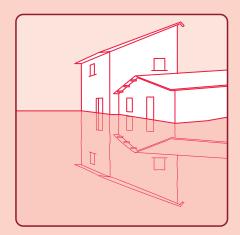
In facing climate change, we have two powerful tools for action: mitigation and adaptation.

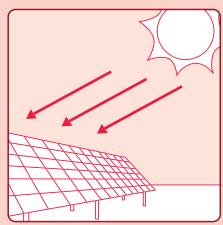
**MITIGATION** means addressing the root causes—cutting greenhouse gas emissions. It's an attack at the source of global warming.

**ADAPTATION** means protecting people and ecosystems from the impacts already happening. It doesn't reduce emissions, but it limits harm and suffering.

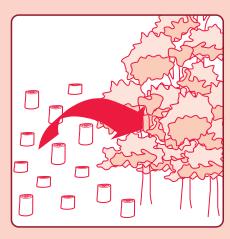
Your task: identify whether each action below is MITIGATION **(M)** or ADAPTATION **(A)**.

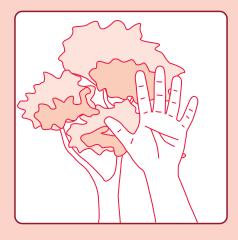
- ( ) A coastal city builds a levee to protect neighborhoods from rising sea levels.
- ( ) A company installs solar panels to power its factory with renewable energy.
- ( ) Farmers receive a new droughtresistant corn seed variety.
- ( ) A country commits internationally to end deforestation by 2030.
- ( ) A city government creates more parks and gardens to reduce urban heat islands.
- ( ) The government subsidizes electric vehicles to reduce gasoline use.

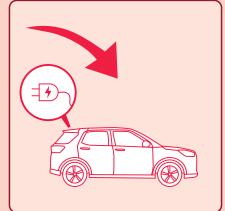












# **GAME ANSWERS**

# TIMELINE

- (1) Steam-powered factories begin operating in the UK. (1760)
- (2) Guy Callendar claims the world has warmed by 0.3°C. (1938)
- (3) James Hansen testifies before the U.S. Senate (NYT: "Global Warming Has Begun"). (1988)
- (4) IPCC releases its sixth report confirming human influence. (2021)

# **FLIGHT IMPACT**

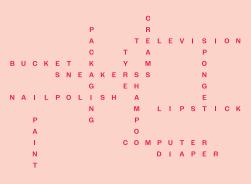
- (1) 25.5 tons
- (2) Three years
- (3) 11,500 trees
- (4) An average Brazilian

# **MITIGATE OR ADAPT?**

(with commentary):

- (A) The measure doesn't reduce emissions but protects a community from a climate impact (sea level rise)..
- (M) Installing solar panels replaces fossil energy with clean energy, directly cutting emissions.
- (A) The seed adaptation adjusts agriculture to drought, without reducing gases.
- ( M ) Ending deforestation avoids major CO<sub>2</sub> releases—a top mitigation action.
- (A) Parks cool the city and reduce heat islands, but don't cut emissions.
- (M) Subsidizing electric vehicles lowers transport emissions.

# **SOLUTION: WORD SEARCH**



# STYROFOAM

# PORTUGUESE VERSION

25



# **ENGLISH VERSION**



# **VERSION EN FRANÇAIS**



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Cité des sciences et de l'industrie

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FOR THE BRAZILIAN CONTEXT

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