

# vision

A COOPERATIVE CARD GAME ABOUT  
PROTECTING THE AIR WE BREATHE

VISIONAIR



Co-funded by  
the European Union





# Instructions



Air pollution has neither a single cause nor a simple solution. **It stems from many sources acting simultaneously**, such as transportation, industry, energy, urbanization, climate, and daily habits, within a complex system.

Understanding it involves observing **how environmental, social, and economic factors are related**, and how their effects accumulate, impacting health, the economy, and the environment.

Improving air quality **requires informed and coordinated decisions** at various levels, from individual actions to collective policies, supported by data and scientific knowledge.

In the *visionAir* card game, **you will cooperate to maintain good air quality before a critical situation is reached.**

You will face problems such as urban traffic, intensive industry, heat waves, and photochemical smog. In response, you will be able to promote solutions such as active mobility, public transport, renewable energy, and reforestation.

But be careful: **every move can have both immediate and long-term consequences.**

Keep in mind that what seems unimportant today can become a major problem tomorrow due to accumulation; and what solves an immediate emergency may fall short in the long run.



**Only by cooperating, thinking with perspective, and acting in time will you achieve better air quality for everyone.**



## Number of players

- 1 person (solo mode)
- 2 to 5 players (cooperative mode, recommended)

# Components

- 40 cards from the base deck
- Playing area in the form of a 5 row x 5 column grid

If you don't have a physical board, the grid is formed by placing the cards on the table as such.

# Game preparation

- Please print this document double-sided.
- Cut out all the cards.
- Choose 1 of the 3 starting cards (**yellow** deck ).
- Place that card in the first row and first column of the grid (top left corner).
- Remove the other 2 starting cards and the 2 special cards (**grey** deck ).
- Shuffle the drawing deck, including solution cards (**blue** ), problem cards (**red** ), and mixed cards (**purple** ).
- Place the drawing deck face down within reach of all players.
- The youngest player draws a card and starts the first turn.

## Short-term and long-term pollution

**Positive values (+)** increase air pollution.

**Negative values (-)** decrease it.

Each card displays two values.

The short-term value adds or subtracts pollution vertically (**column**). The long-term value adds or subtracts pollution horizontally (**row**).

## Game turn

On their turn, each player **draws a card and must place it on a valid free space**, unless a specific rule on the card states otherwise. *visionAir* is a game of cooperation and shared analysis. Therefore, **before placing a card, everyone can talk, discuss options, and work together** to find the best location for each card.

After placing the card, **the value of the corresponding row and column is recalculated.** If a row or column reaches 10 or more points, the game ends and all players lose. If the stolen card cannot be legally placed in any free space without causing a collapse, the game is lost immediately.

**If air quality remains satisfactory, the turn passes to the next person clockwise.**



Drawn cards must be placed in spaces adjacent to those already occupied in the 5x5 grid.

Other cards necessarily cover a card that has already been played.



# Game objective

You must **complete all 25 spaces of the grid** without any row or column adding up to 10 or more points.

If you complete the grid while respecting these limits, air quality will remain at good levels, and therefore everyone wins. Furthermore, you have demonstrated that sustainability requires coordination, foresight, and teamwork.

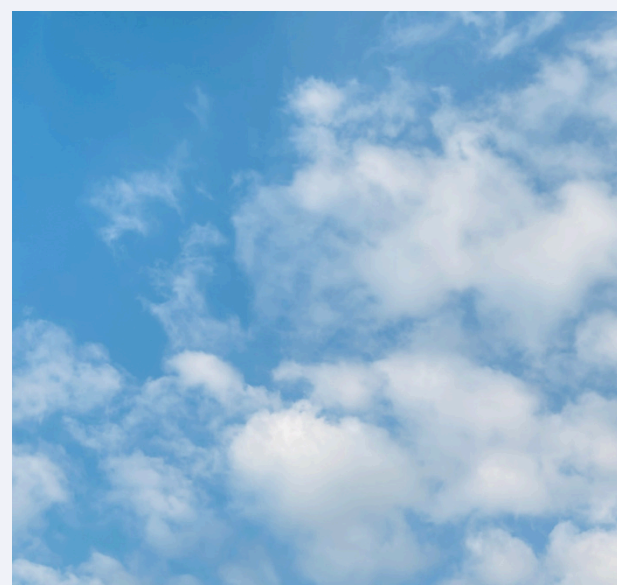
## Other game modes

**Solo mode** plays by the same rules.

Alternatively, the **difficulty level** can be increased by lowering the maximum pollution level from 10 to 8 or 5 points, for example.

## Types of cards

- ▶ **Starting cards:**  
**Yellow** deck of 3 cards. Starting situations in which air pollution already exists.



- 🔗 **Problems:**  
**Red** deck of 15 cards. They increase pollution in the short term, the long term, or both.



- 🌿 **Solutions:**  
**Blue** deck of 15 cards. Situations or actions that reduce pollution and, in some cases, neutralize negative cards.



- ↔ **Mixed:**  
**Purple** deck of 5 cards. They represent complex phenomena that can both help and harm.



- 🕒 **Specials:**  
**Gray** deck of 2 cards. They are automatically activated when certain combinations appear. They must be placed on the board on top of one of the cards that triggered the combination.



**Cards that cover other cards:** Some cards can or must be placed on top of another card that has already been played. For example, 'Industrial Filter' on top of 'Heavy Industry', or 'Sustainable Agriculture' on top of 'Intensive Livestock Farming'. The top card replaces the values of the bottom card.

### Heavy industry

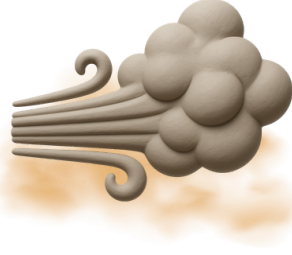


⌵ **+3** ⌵ **+3**

▶ Added solar radiation and thermal inversion will activate smog.

Large factories can emit polluting particles and gases continuously if they do not implement effective controls.

### Dust haze



⌵ **+3** ⌵ **+1**

▶ -

Dust suspended in the air from arid areas benefits the soil, but aggravates respiratory diseases.

### Global warming



⌵ **+2** ⌵ **+4**

▶ -

Rising temperatures favor more intense and longer-lasting heat waves, fires, and pollution episodes.

### Photochemical smog



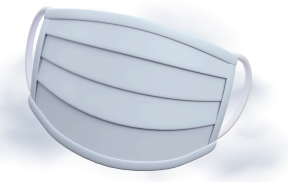
⌵ **+4** ⌵ **+1**

▶ -

It appears if solar radiation and thermal inversion coincide, along with increased traffic or heavy industry.

Sunlight reacts with gases from traffic or industry and forms harmful ozone near the ground.

### Abrasive contamination



⌵ **+3** ⌵ **+2**

▶ It appears if closed topography coincides with construction or haze.

Fine dust in high concentrations irritates the eyes, throat, and lungs, especially in sensitive people.

### Active mobility



⌵ **-2** ⌵ **-1**

▶ -

Walking or cycling replaces motorized journeys and reduces polluting emissions in the city.

### Public transport



⌵ **-3** ⌵ **-1**

▶ -

When many people share a vehicle, emissions per passenger and urban congestion decrease.

### Reforestation



⌵ **-1** ⌵ **-5**

▶ -

It can cover the Urban Heat Island card.

Trees capture carbon, filter particles, and help cool urban environments.

### Renewable energy



⌵ **-2** ⌵ **-5**

▶ Can cover the Heavy Industry card.

It generates electricity with less air pollution than coal, oil, or gas.

### Energy efficiency



⌵ **-2** ⌵ **-4**

▶ -

Consuming less energy in buildings and homes reduces emissions linked to its production.

### Rain



⌵ **-3** ⌵ **0**

▶ -

Rain temporarily cleans the air by washing away particles and some pollutants.

### Social awareness



⌵ **-1** ⌵ **-1**

▶ -

Draw an additional card.

Collective changes in mobility, consumerism, and energy improve air quality.

### Oceanic absorption



⌵ **0** ⌵ **-4**

▶ A more acidic ocean absorbs less CO<sub>2</sub> from the atmosphere.

The ocean absorbs some of the carbon dioxide emitted by human activities.

### Industrial filter



⌵ **-1** ⌵ **-1**

▶ -

It can cover heavy industry.

Filters retain particles and certain gases before they are released through industrial chimneys.

### Telecommuting



⌵ **-1** ⌵ **-1**

▶ -

It can cover urban traffic.

Reducing daily commutes decreases traffic, noise, and urban emissions.

### Low emission zone



⌵ **-3** ⌵ **-1**

▶ -

It can block urban traffic.

Restricting the most polluting vehicles improves air quality in areas with heavy traffic.





### Electrification



≡ -1 ≫ -2



Replacing fossil fuels with electricity reduces local emissions in transportation, industry, and homes.

### Sustainable agriculture



≡ -2 ≫ -1



It can cover intensive livestock farming.

Good agricultural practices reduce burning, excess fertilizers, and polluting emissions.

### Climate data



≡ -1 ≫ -2



It allows you to reposition one card.

Measuring pollution and climate allows for the design of more effective policies.

### Pedestrianization



≡ -2 ≫ -1



Giving more space to pedestrians reduces motorized traffic and improves the urban environment.

### Urban trafficking



≡ +5 ≫ +2



Solar radiation and thermal inversion activate smog.

Urban traffic emits gases and particles that worsen air quality and health.

### Intensive industry



≡ +6 ≫ +5



-

Uncontrolled industrial production can constantly pollute the air.

### Forest fire



≡ +8 ≫ +2



-

Smoke from fires contains fine particles that damage breathing.

### Intensive livestock farming



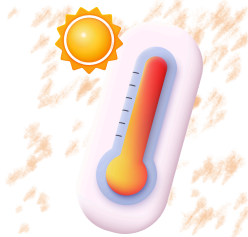
≡ +4 ≫ +4



-

It can emit methane and ammonia, gases linked to global warming and pollution.

### Heat wave



≡ +4 ≫ +1



-

Intense heat favors the formation of tropospheric ozone and aggravates pollution episodes.

### Maritime transport



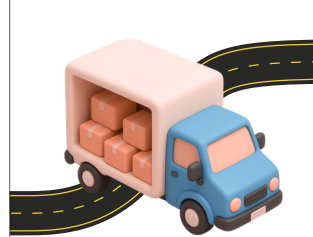
≡ +3 ≫ +2



-

Some ships use fuels that generate particles and sulfur oxides.

### Heavy transport



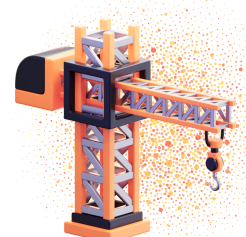
≡ +5 ≫ +3



-

Trucks and heavy vehicles emit more pollutants for every kilometer traveled.

### Urban works



≡ +5 ≫ +3



With a closed topography, it activates abrasive contamination.

The construction work generates dust and machinery emissions in the streets and neighborhoods.

### Fossil dependency



≡ +3 ≫ +6



-

Using oil, coal, and gas maintains high polluting emissions.

### Polar ice melt



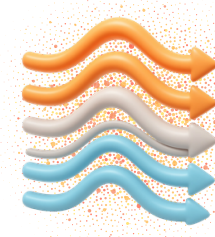
≡ +1 ≫ +5



-

The loss of the polar ice caps means less reflection of solar radiation and the heat exacerbates air pollution.

### Thermal inversion



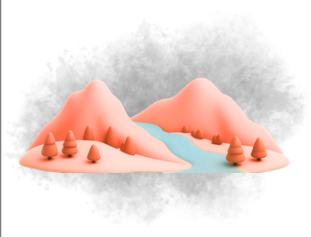
≡ +3 ≫ +1



It can trigger smog.

A layer of warm air prevents the dispersion of pollution at ground level.

### Closed topography



≡ +2 ≫ +3



With urban works or haze, it activates abrasive pollution

Valleys and basins can retain pollutants for longer by blocking air currents.





### Domestic pollution



$\preceq +5 \succcurlyeq +4$   
 -

Cooking, stoves, or indoor smoke affect respiratory health.

### Urban heat island



$\preceq +4 \succcurlyeq +2$   
 -

Asphalt and concrete retain heat and raise temperatures, thus worsening air quality.

### Ocean acidification



$\preceq +1 \succcurlyeq +5$   
 Cover the ocean absorption chart.

Excess CO<sub>2</sub> acidifies the oceans, damages marine ecosystems, and alters microorganisms that help produce oxygen.

### Environmental regulation



$\preceq -2 \succcurlyeq -2$   
 After debate and consensus, it can cover up any problem card.

Evidence-based and well-implemented standards reduce emissions and protect public health.

### Economic crisis



$\preceq 0 \succcurlyeq -2$   
 Cover a solution letter.

It can reduce polluting activity, but it can also hinder clean investments.

### Solar radiation



$\preceq 0 \succcurlyeq 0$   
 It can trigger smog.

Sunlight triggers reactions between polluting gases that form tropospheric ozone.

### Drafts



$\preceq -2 \succcurlyeq +2$   
 -

They disperse local pollution, although they can also transport it far away.

### Online shopping



$\preceq 0 \succcurlyeq +3$   
 -

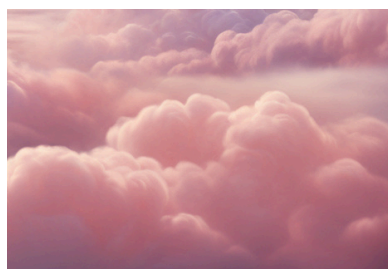
It reduces some personal travel, but increases delivery and logistics.



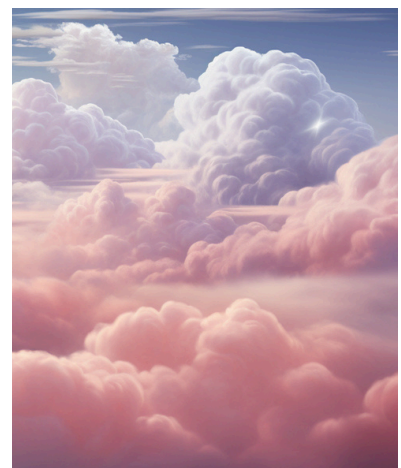
This game is part of the VISIONAIR project, a European initiative that helps to better understand air quality and its effects on health.



The project brings together universities and students to analyze information on air pollution, identify its environmental, social and economic consequences, and propose useful solutions to improve the air we breathe.



It also promotes new digital skills and innovative tools to interpret environmental data in a clear and accessible way.





### Conceptualization

Esther Sendra Nadal and Marina Cano Lamadrid  
University Institute for Agro-food and Agro-environmental  
Research and Innovation  
Miguel Hernández University of Elche

### Design

**Ángeles C. Gallar Martínez**  
Scientific Culture and Innovation Unit UMH



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