Printing instructions

Print all the cards and enveloppes single-sided.
Print the board, puzzle pieces and additional elements from the second file single-sided, in A3 if possible.

This game is part of a series created in the Games for Goals project.

FIND THE OTHER GAMES AQUAHEROES AND TICKET TO RIGHTS ON WWW.GAMESFORGOALS.EU

Co-funded by the Erasmus+ Programme of the European Union

Please share your feedback on the game and help measure its impact!

https://tinyurl.com/GFG-impact-EN

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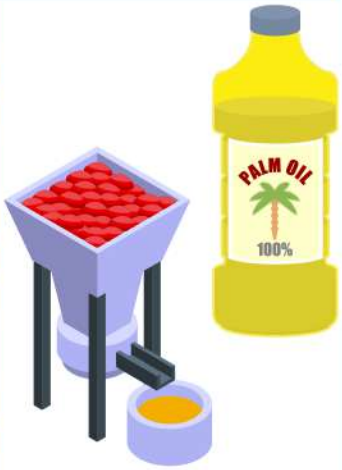
Add this presentation card to the game materials!

FOREST

FOREST

FOREST



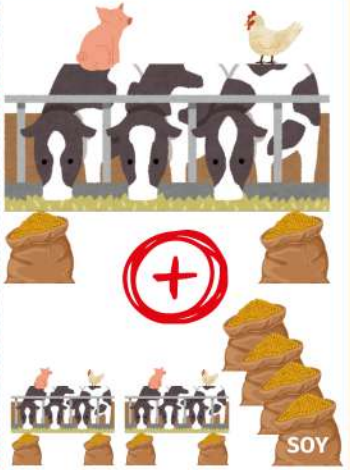
FOREST

FOREST

FOREST

FOREST

FOREST



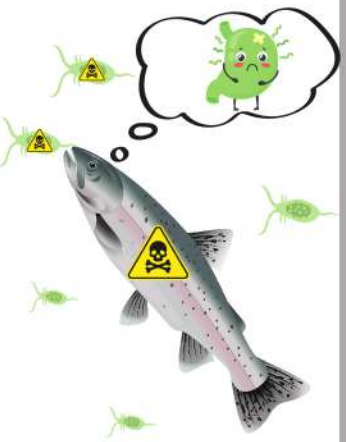
FOREST

FOREST

ARCTIC

ARCTIC

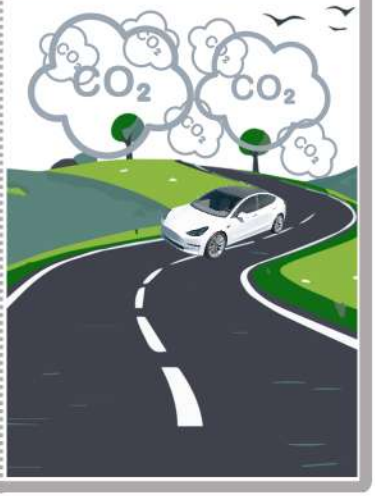
ARCTIC



ARCTIC

ARCTIC

ARCTIC



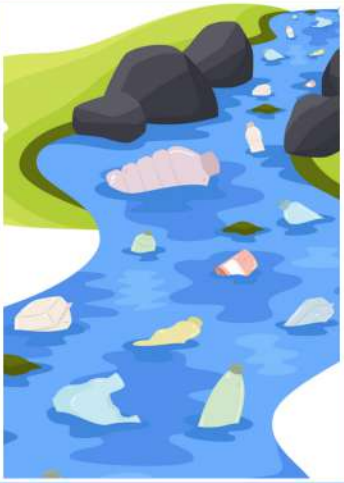
ARCTIC

ARCTIC

OCEAN

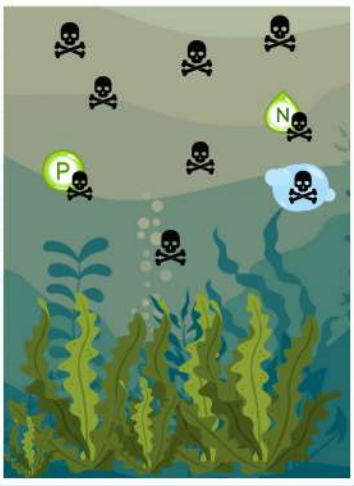
OCEAN

OCEAN



OCEAN

OCEAN



OCEAN

OCEAN

OCEAN

DESERT

DESERT

GOBI

Type: Cold in the winter, warm in the summer (mostly rocky and sandy).

Place: Mongolia & north of China.

DESERT

ANTARCTICA

Type: Very cold desert (covered with ice, extremely low precipitation).

Location: South Pole.

DESERT

SAHARA

Type: Hot desert (mainly sandy and rocky).

Location: North Africa (Algeria, Libya, Egypt, Morocco, Mauritania, Mali, Niger, Chad, Sudan).

DESERT

HIGHLANDS

Type: Cold volcanic desert (lava field, black sand, very little vegetation)

Location: Iceland.

DESERT

ATACAMA

Type: Very dry, temperate desert (lots of sand and rocks).

Location: Northern Chile & Southern Peru (South America).

DESERT

DESERT

DESERT

DESERT

DESERT

DESERT

DESERT

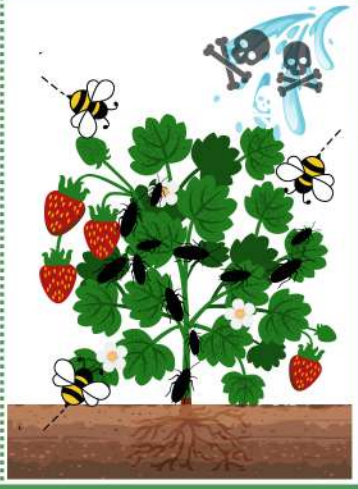
DESERT

only the top half of the page

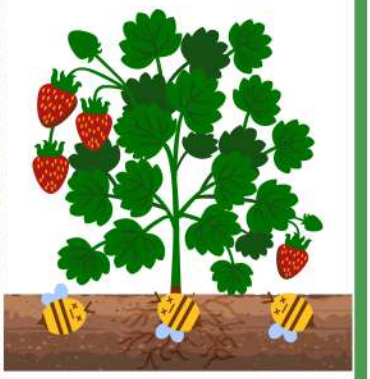
GRASSLAND

GRASSLAND

GRASSLAND



GRASSLAND



ARCTIC

Because of climate change,

^^ 5 (: foxes are taking over

the endemic* **23 8 % 20 5** foxes

in the Arctic .

**that only live in this region*

ARCTIC

# A	8 H	15 O	22 V
2 B	% I	16 P	23 W
3 C	10 J	17 Q	= X
(: D	11 K	^^ R	25 Y
5 E	12 L	19 S	26 Z
6 F	13 M	20 T	✪ Space
7 G	+ N	21 U	

GRASSLAND

If there aren't enough predators,

8 5 ^^ 2 % 22 15 ^^ 15 21 19

animals become too numerous

and plants can't **7 ^^ 15 23**.

GRASSLAND

# A	8 H	15 O	22 V
2 B	% I	16 P	23 W
3 C	10 J	17 Q	= X
(: D	11 K	^^ R	25 Y
5 E	12 L	19 S	26 Z
6 F	13 M	20 T	✪ Space
7 G	+ N	21 U	

OCEAN

Some very small bits of

16 12 # 19 20 % 3 go everywhere

in nature, even in the

2 15 (: % 5 19 of animals

(including humans).

GRASSLAND

Poaching is an illegal activity in

which **23 % 12 (:✪ 19 16 5 3 % 5 19**

are killed are captured

without permission,

often for **20 ^^ 15 16 8 % 5 19**.

OCEAN

# A	8 H	15 O	22 V
2 B	% I	16 P	23 W
3 C	10 J	17 Q	= X
(: D	11 K	^^ R	25 Y
5 E	12 L	19 S	26 Z
6 F	13 M	20 T	✪ Space
7 G	+ N	21 U	

GRASSLAND

# A	8 H	15 O	22 V
2 B	% I	16 P	23 W
3 C	10 J	17 Q	= X
(: D	11 K	^^ R	25 Y
5 E	12 L	19 S	26 Z
6 F	13 M	20 T	✪ Space
7 G	+ N	21 U	

FOREST

# A	8 H	15 O	22 V
2 B	% I	16 P	23 W
3 C	10 J	17 Q	= X
(: D	11 K	^^ R	25 Y
5 E	12 L	19 S	26 Z
6 F	13 M	20 T	✪ Space
7 G	+ N	21 U	

FOREST

Mangroves are forests that grow in **23 # 20 5 ^^** and where **2 % ^^ (: 19** and **6 % 19 8** reproduce.

ARCTIC

Permafrost is soil that normally stays **6 ^^ 15 26 5 +** but can release a lot of **7 ^^ 5 5 + 8 15 21 19 5** gasses when it gets warmer because of climate change.

DESERT

Some species that are not **+ # 20 % 22 5** to a place can become **% + 22 # 19 % 22 5** and harm the environment by taking over the other plants.

DESERT

# A	8 H	15 O	22 V
2 B	% I	16 P	23 W
3 C	10 J	17 Q	= X
(: D	11 K	^^ R	25 Y
5 E	12 L	19 S	26 Z
6 F	13 M	20 T	✪ Space
7 G	+ N	21 U	

ARCTIC

# A	8 H	15 O	22 V
2 B	% I	16 P	23 W
3 C	10 J	17 Q	= X
(: D	11 K	^^ R	25 Y
5 E	12 L	19 S	26 Z
6 F	13 M	20 T	✪ Space
7 G	+ N	21 U	

The following two pages are alternatives for the following challenges:

OCEAN

ARCTIC

GRASSLAND

DESERT

FOREST

You can choose to use either the coded messages above, or the rebuses below. If you use the rebuses, you do not need to use the corresponding envelopes below as the challenge will then consist of one card only.

Rebus: decode the word!

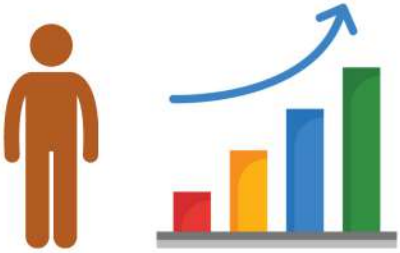
DESERT

A species which is **not native** to the place where it is found and that harm the environment:

Rebus: decode the word!

FOREST

A forest that grows in **water** and where **birds** and **fish** reproduce:



S, T, U, ...

Rebus: decode the word!

ARCTIC

Soil that normally stays frozen but can release a lot of **greenhouse gasses** when it gets warmer:

Rebus: decode the word!

OCEAN

Very **small bits** of plastic that go **everywhere in nature**, including animals:

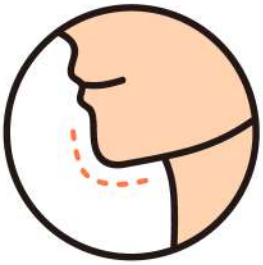
Me, __self, & I

___ter

Rebus: decode the word!

GRASSLAND

The **killing** or capturing of wild species **without permission**:



MODEL FOR THE IMAGE CARDS

1: FOLD FIRST AND GLUE THE BACKSIDE

2: FOLD SECOND (IMAGE INSIDE, TITLE OUTSIDE)

Your answer:

GRASSLAND

Your answer:

GRASSLAND

Your answer:

GRASSLAND

Your keywords:

GRASSLAND

Your keywords:

GRASSLAND

Your keywords:

OCEAN

Your keywords:

OCEAN

Your answer:

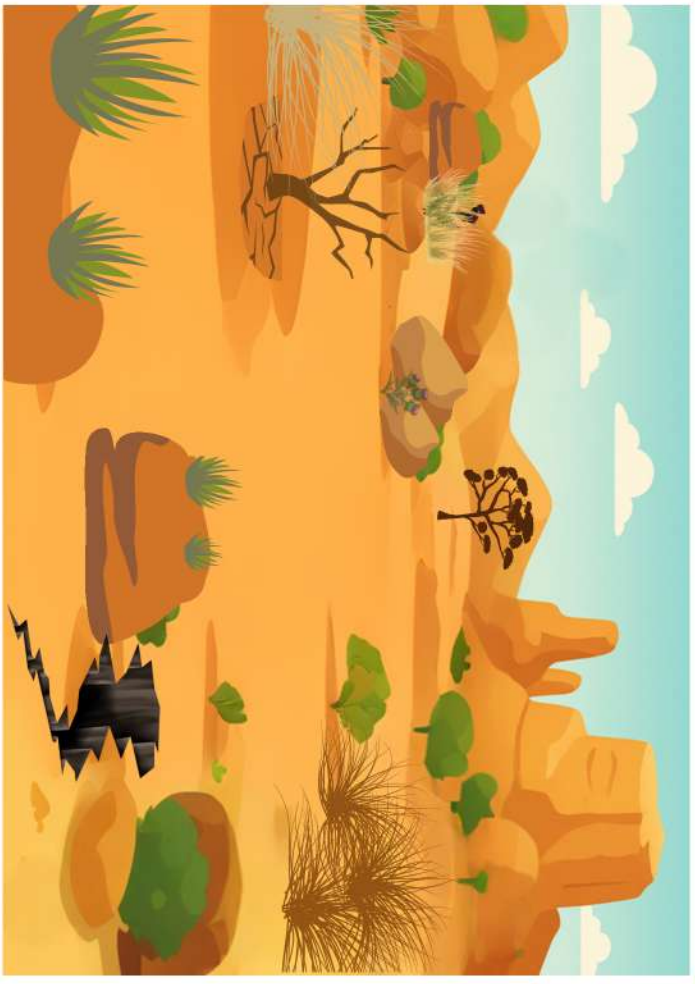
OCEAN

Your answer:

OCEAN

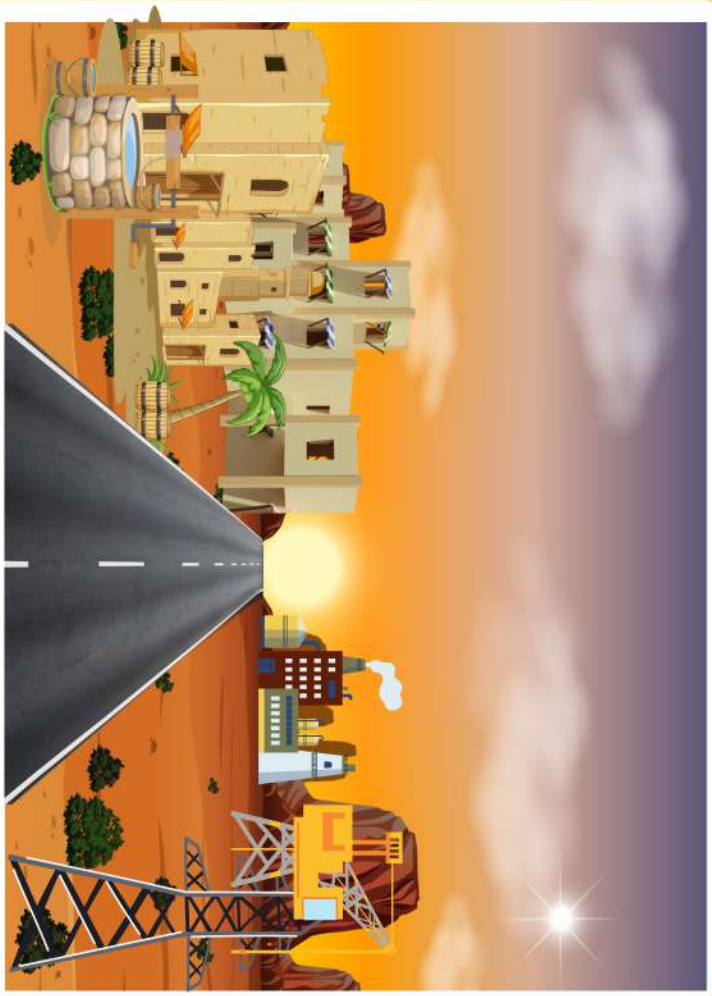
DESERT

DESERT

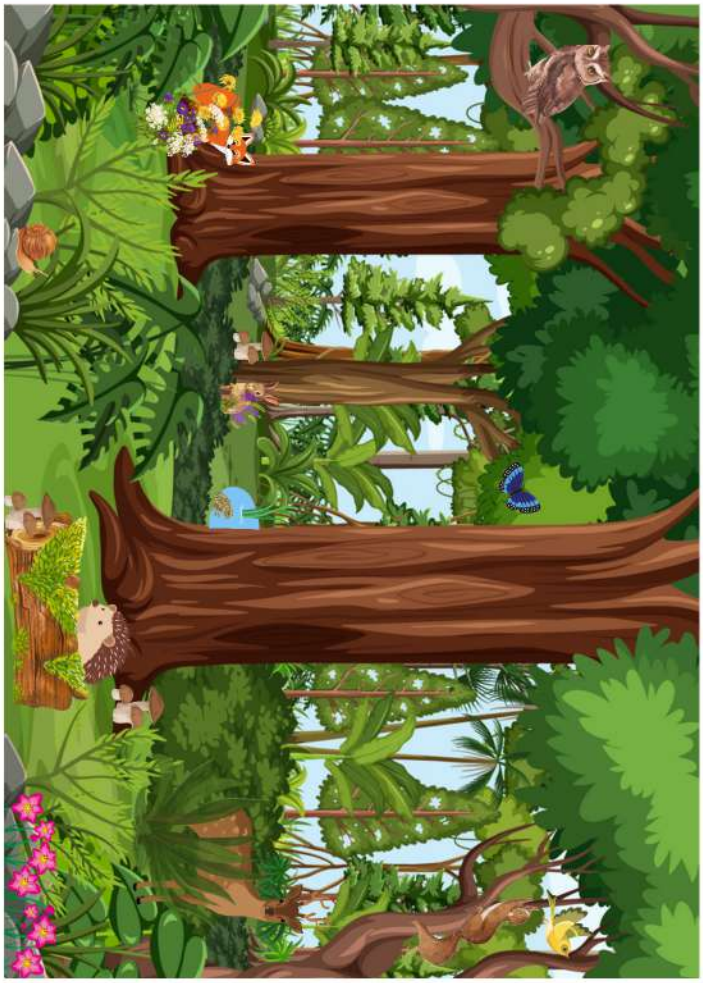


DESERT

DESERT

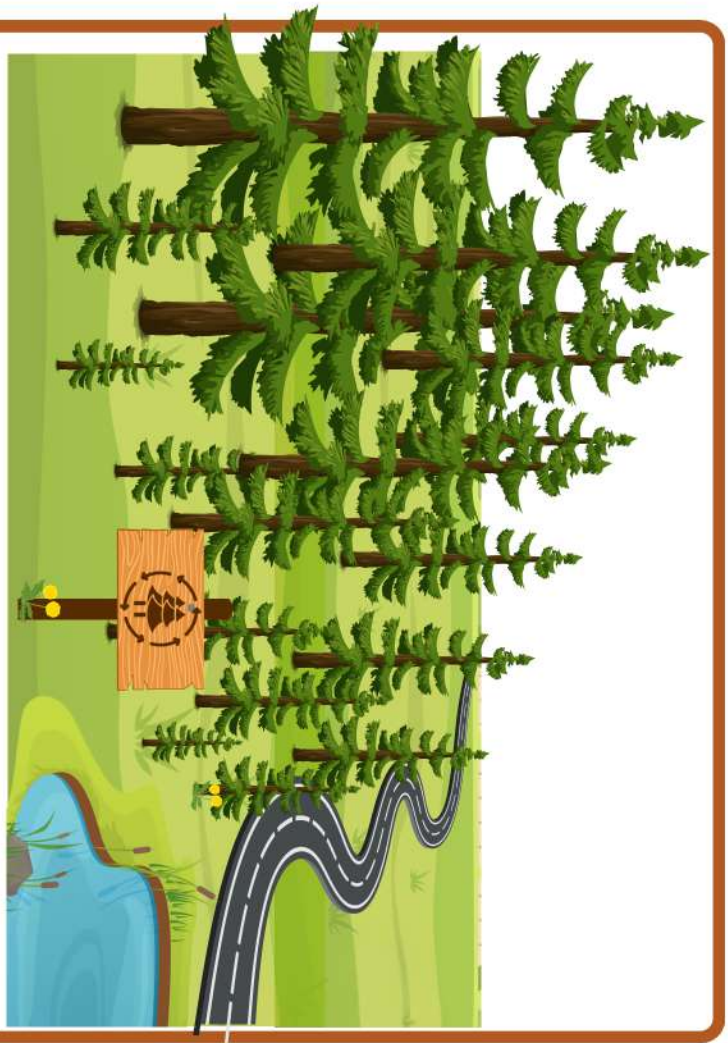


FOREST

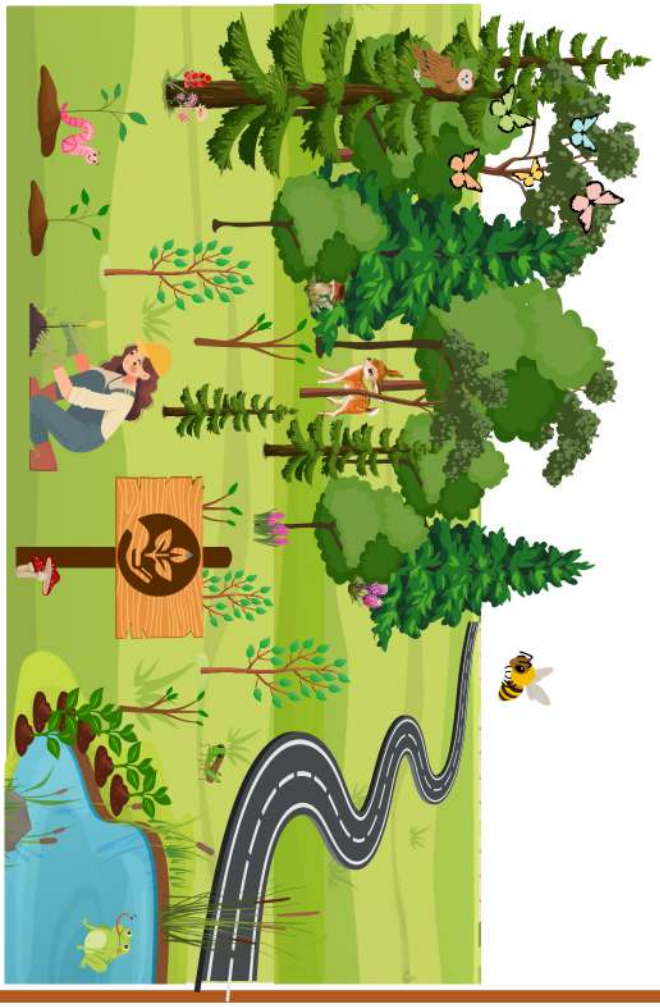


FOREST

FOREST



FOREST

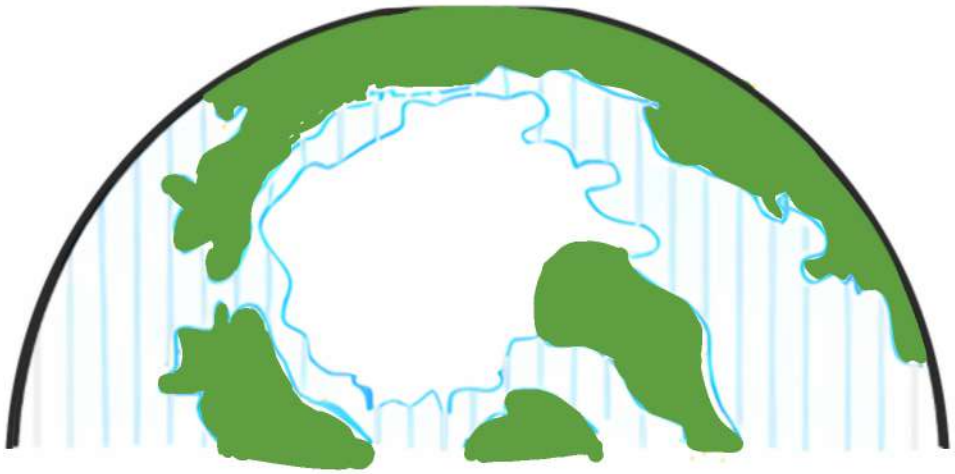


1980

Ocean

Ice cover

Land



ARCTIC

2025

Ocean ?

Ice cover ?

Land

ARCTIC

ENVELOPE CONTENT

The solution cards can either be included in the envelopes or distributed separately.

					
ARCTIC	2 coded message cards*	2 coded message cards	4 logical links cards	4 logical links cards	2 image cards
FOREST	5 logical links cards	2 image cards	2 coded message cards*	2 image cards	5 logical links cards
OCEAN	2 image cards	4 logical links cards	2 image cards	4 logical links cards	2 coded message cards*
GRASS-LAND	2 coded message cards	3 image cards	4 logical links cards	2 coded message cards*	2 image cards
DESERT	4 logical links cards	2 coded message cards*	2 image cards	2 image cards	10 logical pairs cards

*Alternatively, rebuses are provided if you want to use fewer coded messages. If used, the enveloppe for the corresponding challenge can be left out as rebuses consist of only one card per challenge and do not require instructions. Make sure to use the corresponding solution card.

STAPLE STAPLE

MODEL FOR THE ENVELOPES WITH **INSTRUCTIONS**

STAPLE STAPLE

FOLD AND STAPLE THE SIDES.

KEEP THE TOP OPEN!

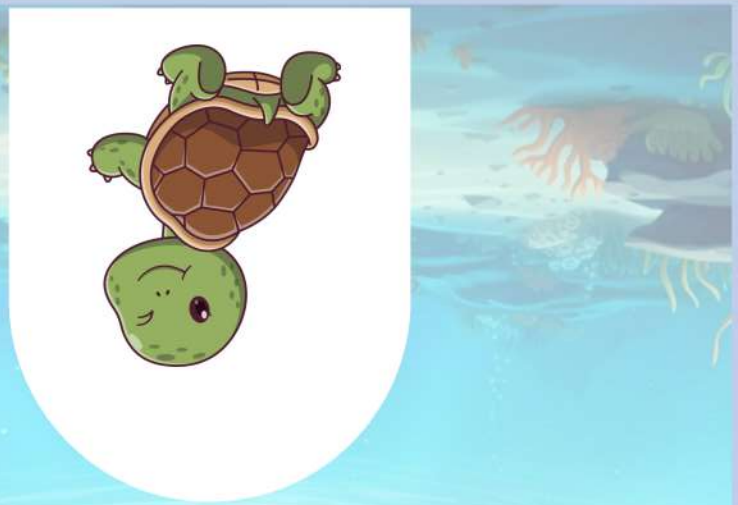
INSTRUCTIONS

Look at the two coral reef images. Match each keyword to the image where it belongs.
Then explain: Which reef is healthier — and how can you tell?
Possible keywords to associate with one image or the other: colorful, empty, coral, pollution, clean water, biodiversity, unhealthy.

INSTRUCTIONS

Two ocean areas are facing pollution.
Luckily, some sea creatures help clean up the trash.

Get rid of the pollutants using the creatures.
Count how much pollution is left in each ocean, and how many creatures survive in the end (non used).
Can you figure out why there is a difference?



OCEAN CHALLENGE

OCEAN CHALLENGE

INSTRUCTIONS

Put the cards in logical order. How does using fertilizers on land affect life in the ocean? Try to explain the chain. (Tip: O2 = oxygen).

When this happens...

... this happens. Because of that...

... this happens. In turn, ...

OCEAN CHALLENGE

INSTRUCTIONS

Put the cards in logical order. What happens in the ocean when we don't manage waste properly? Try to explain the chain.

When this happens...

... this happens. Because of that...

... this happens. In turn, ...

OCEAN CHALLENGE

INSTRUCTIONS

Look at the two forest images. Can you find what has changed? Mark the differences on the images. What is the reason behind all this?

INSTRUCTIONS

Look at the two images of replanted forests. Can you find how many different plants and animals there are in each picture? Mark one of each species on the images
Why are the two situations different?

INSTRUCTIONS

Put the cards in logical order. What is needed to produce the chocolate spread and how does it affect forests? Try to explain the chain.

To produce this...

we need this. Because of that, ...

tthis happens. In turn,, ...

INSTRUCTIONS

Put the cards in logical order. What happens to forests when people want to eat more meat? Try to explain the chain.

To produce this...

we need this. Because of that, ...

tthis happens. In turn,, ...

FOREST CHALLENGE

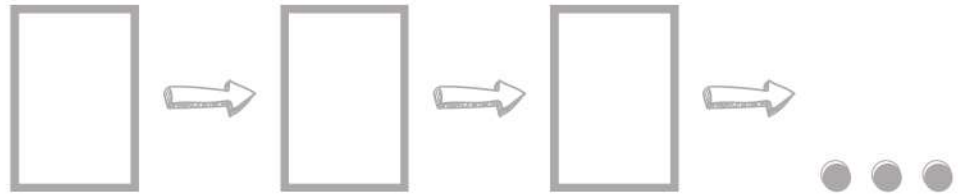
FOREST CHALLENGE

INSTRUCTIONS

Crack the secret code to find out how climate warming is affecting foxes in the arctic.

INSTRUCTIONS

Put the cards in logical order. What happens when toxic waste is dumped into the Arctic Ocean? Try to explain the chain.



When this happens...

... this happens. Because of that...

... this happens. In turn, ...

ARCTIC CHALLENGE

ARCTIC CHALLENGE

INSTRUCTIONS

Put the cards in logical order. What's the effect of human activities, like driving cars, on animals living in the arctic? Try to explain the chain.

When this happens...

... this happens. Because of that...

... this happens. In turn, ...

INSTRUCTIONS

Look at the maps of the Arctic, where land was colored green. Can you figure out which parts are ocean or ice in each map? On both maps: color water blue, and leave ice white. Compare the old and new map: how has the Arctic changed over time?

1980 → 2025

ARCTIC CHALLENGE

ARCTIC CHALLENGE

INSTRUCTIONS

Put the cards in logical order. What happens to migratory birds when land turns into desert? Try to explain the chain.

This → ... this happens. Because of that... → ... this happens. In turn, ... → • • •

INSTRUCTIONS

Compare the two desert images. How many different animals and plants can you find in each? Mark them on the images.

INSTRUCTIONS

Look at the two desert images. Where can you find more (signs of) life? Mark them on the images.

INSTRUCTIONS

Look at the different types of deserts. Match each description to the correct image.

INSTRUCTIONS

Crack the secret code to find out how farm animals can affect grassland ecosystems.

INSTRUCTIONS

Look at the three grassland images. Use the grid to count **how many squares** each animal can move in without being blocked by fences or walls. Write the numbers down in the boxes on each card. Where can the elephant, ostrich, and rhino live freely? Where are they trapped ? Why are some animals already missing?

 ?  ?  ?

GRASSLAND CHALLENGE

GRASSLAND CHALLENGE

INSTRUCTIONS

Put the cards in logical order. How do pesticides affect life in grasslands? Try to explain the chain.

When this happens...

... this happens. Because of that...

... this happens. In turn, ...

INSTRUCTIONS

Compare the two grassland images and zoom into the soil. Match each keyword to the image where it belongs. How are the soil and its creatures different in these farming systems? Why is it different?

Keywords: monoculture, intensive farming, diverse, insect friendly, natural farming, unhealthy soil.

Pages 34-36 are for the following challenges:

OCEAN

ARCTIC

GRASSLAND

DESERT

FOREST

You can choose to use the enveloppes below with the two challenge cards for the coded message. If you use the rebuses, you do not need to use the corresponding envelopes below.

INSTRUCTIONS

Decode the message using the grid!

Replace each character by the corresponding letter to find the missing words and to understand the meaning of the sentence!

INSTRUCTIONS

Decode the message using the grid!

Replace each character by the corresponding letter to find the missing words and to understand the meaning of the sentence!

INSTRUCTIONS

Decode the message using the grid!

Replace each character by the corresponding letter to find the missing words and to understand the meaning of the sentence!

GRASSLAND CHALLENGE

ARCTIC CHALLENGE

INSTRUCTIONS

Decode the message using the grid!

Replace each character by the corresponding letter to find the missing words and to understand the meaning of the sentence!

INSTRUCTIONS

Decode the message using the grid!

Replace each character by the corresponding letter to find the missing words and to understand the meaning of the sentence!

1: FOLD FIRST AND GLUE THE BACKSIDE

MODEL FOR THE SOLUTION CARDS

2: FOLD SECOND (SOLUTION INSIDE, TITLE OUTSIDE)

Consuming products with palm oil causes deforestation and impacts forest animals. **What can you change at home to improve the situation?**

1. 

2. 

3. 

4. 

5. 

SOLUTION

FOREST CHALLENGE

Replanting forests with different trees and space for plants helps animals return. But if only one type of tree is planted in rows, there's not enough food or shelter. **Think about at least 5 natural elements needed for a good forest.**

SOLUTION

FOREST CHALLENGE

In a healthy forest, many animals and plants are living together. When forests are cut down, not only trees are gone, but also most of the animals because they lose their homes. **What could be done in your school to reduce the use of paper?**

SOLUTION

FOREST CHALLENGE

Consuming much meat requires lots of space and causes deforestation. **Can you think of a balanced dish without meat that you all like?**

1. 

2. 

3. 

4. 

5. 

SOLUTION

FOREST CHALLENGE

Mangroves are forests that grow in **water** and where **birds** and **fish** reproduce.

Discuss how you would feel as a newborn fish in a mangrove forest. Think about the tree roots around you and about the predators beyond!

SOLUTION

for the coded message

FOREST CHALLENGE

We produce too much waste and don't manage it properly. Part of it reaches the environment and flows all the way to the ocean where it has an important impact on wildlife.
It's so much that we even call this phenomena the 'plastic soup'! **Name one thing you already do to reduce your waste production!**

1. 
2. 
3. 
4. 

SOLUTION

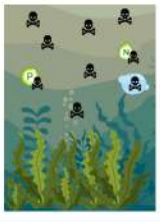
OCEAN CHALLENGE

Using too many chemicals like fertilizers can result in an overload of nutrients downstream. This can cause zones in the ocean to die completely because the oxygen disappears.
Discuss how a compost works: what can you put in it? Did you know it can be used instead of chemicals to feed plants?

1. 

2. 

3. 

4. 

SOLUTION

OCEAN CHALLENGE

Some very small bits of **plastic** go everywhere in nature, even in the **bodies** of animals (including humans). They're called microplastics.

Look at the objects around you with plastic in it, and discuss which one would be the most easy to replace by something without plastic!

SOLUTION

for the coded message

OCEAN CHALLENGE

The ocean with more biodiversity is more resilient to changes. The creatures able to remove the pollution are so small that they're called microorganisms. The more diverse they are, the better the ocean will defend itself. **Yet, do you agree it would even be better not to pollute it at all?**

1	0	1	2	0
0	0	0	0	1

0	3	0	2	0
2	0	2	0	4

SOLUTION

OCEAN CHALLENGE

Healthy fish and sea animals can be found in the biodiverse coral reef, where plants also grow unharmed. Pollution damages the oceans, and coral reefs in particular. The biodiversity that used to thrive around it suffers in turn. **Look well at the pictures, what exactly is the cause of the differences?**

Colourful, coral, clean water, biodiverse.

Empty, pollution, unhealthy.

SOLUTION

OCEAN CHALLENGE

If there aren't enough predators, **herbivorous** animals become too numerous and plants can't **grow**.

Can you think of solutions to reduce this phenomenon, called overgrazing?

SOLUTION

GRASSLAND CHALLENGE

Poaching is an illegal activity in which **wild species** are killed are captured without permission, often for **trophies**.

Think of an action that judges could ask poachers to do in order to restore the biodiversity.



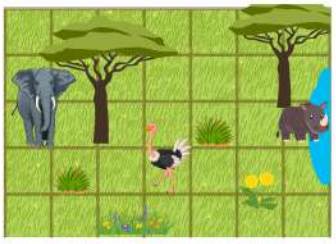


SOLUTION

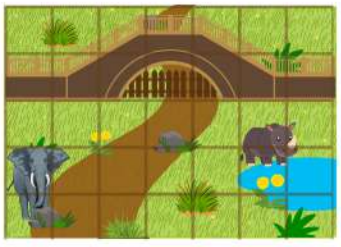
for the coded message

GRASSLAND CHALLENGE

Habitat fragmentation can make some species disappear. **Think of different places where wildlife corridors (like bridges or tunnels) should be built to help animals move between areas.**



35	35	35



21	✗	21

✗	✗	3-6 *

* depending on calculation method

SOLUTION

GRASSLAND CHALLENGE

Natural farming systems with crop rotation and mixed plants help keeping the soil healthy (worms, insects, fungi). In soil from intensive farming systems, with monocultures (only one type of crop in a big area), there's much less life. **Discuss what you would prefer to do if you were a farmer, and why.**

Monoculture, intensive farming, unhealthy soil.

Diverse, insect friendly, natural farming.

SOLUTION

GRASSLAND CHALLENGE

Pesticides usually target more than the intended species, and often lead to a decrease in the well-being of different lifeforms. **Reflect on whether the benefits are more short-term or long-term.**

1. 

2. 

3. 

4. 

SOLUTION

GRASSLAND CHALLENGE

Transforming deserts to use the land for human activities (such as resource extraction) impacts the fragile animals and plants that had adapted to live in these specific conditions.

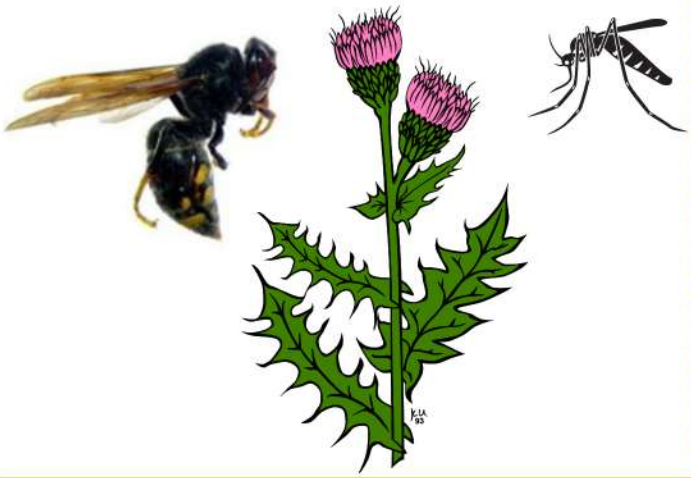
Think about cities that have been built in the desert (like Dubai or Las Vegas), and discuss where you would like to move them if you could.

SOLUTION

DESERT CHALLENGE

Some species that are not **native** to a place can become **invasive** and harm the environment by taking over the other plants.

Discuss if a similar principle could also apply to animals, and try to find at least two examples of insects who are more and more present in Europe.

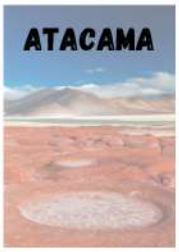


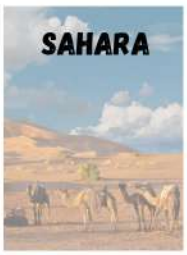
SOLUTION

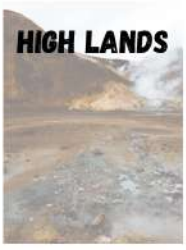
for the coded message

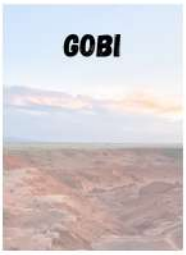
DESERT CHALLENGE

In the world exists a large variety of deserts: some are bigger than others, some are warmer than others, they have different soil composition and declination.
Find the one thing they all have in common (tip: think of the weather).









SOLUTION

DESERT CHALLENGE

Although deserts might seem like a biodiversity-poor area, they can be rich in different animals and plants that have adapted to these extreme conditions. This is worth protecting because the biodiversity there is quite unique and vulnerable. **Imagine how much water you would need to carry to spend one week in the desert!**




SOLUTION

DESERT CHALLENGE

Migratory birds, among other species, are impacted by desertification: a phenomena where biodiversity-poor and arid areas take over land where many living beings used to cohabitate. This is a consequence of different factors, including climate change.

Think about possible actions to fight against desertification.

1. 

2. 

3. 

4. 

SOLUTION

DESERT CHALLENGE

Permafrost is soil that normally stays **frozen** but can release a lot of **greenhouse** gasses when it gets warmer because of climate change.

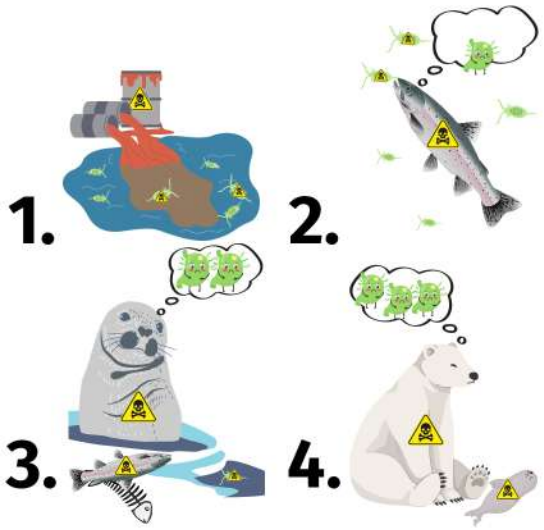
Explain how the melting of permafrost if a vicious cycle, and what the relation is with climate change. (Tip: a vicious cycle is when two bad things amplify each other).

SOLUTION

for the coded message

ARCTIC CHALLENGE

Poisons accumulate along the food chain and are transmitted throughout time. **Reflect about who's on top of the food chain and what it means.** Maybe humans are more related to plankton than we can imagine!



SOLUTION

ARCTIC CHALLENGE

Because of climate change, **red** foxes are taking over the endemic **white** foxes in the Arctic.

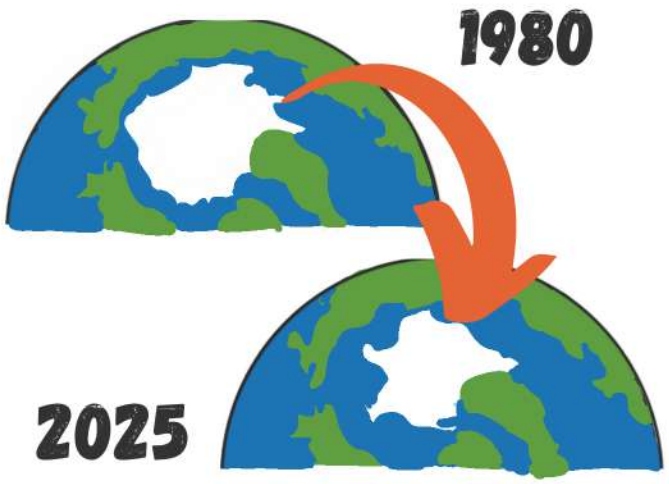
Reflect on the reason why white foxes have more difficulty living in the Arctic now? Think of the colour of their environment!

SOLUTION

ARCTIC CHALLENGE

The colours below show that the ice cover in the Arctic has decreased in the last decades.

What could we do to slow down the process?



SOLUTION

ARCTIC CHALLENGE

Human activities that produce greenhouse gases cause global warming. This is particularly visible in the poles, where climate change happens very fast.

Think of an action that the adults around you should do to reduce climate change, and tell them!

1. 

2. 

3. 

4. 

SOLUTION

ARCTIC CHALLENGE

Pages 50-52 are the alternative solution cards for the following challenges (rebus) :

OCEAN

ARCTIC

GRASSLAND

DESERT

FOREST

Please use the corresponding solution card depending on the challenge you use in the game (rebus or coded message).

Man - Grow - V

=

Mangrove

Discuss how you would feel as a newborn fish in a mangrove forest. Think about the tree roots around you and about the predators beyond!

SOLUTION

for the rebus

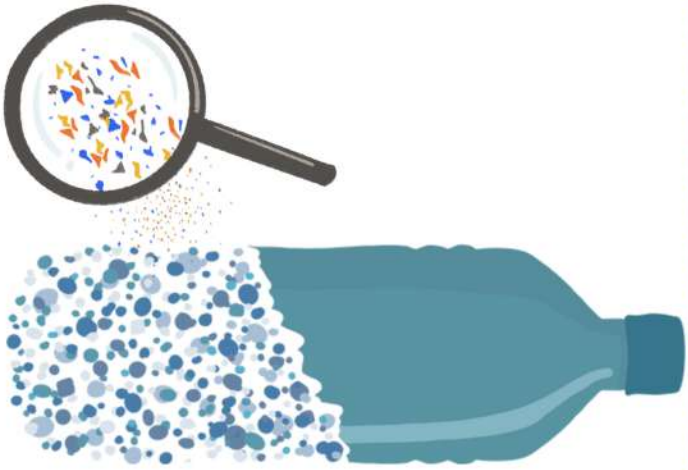
FOREST CHALLENGE

My - Crow - Plas - Tick

=

Microplastic

Look at the objects around you with plastic in it, and discuss which one would be the most easy to replace by something without plastic!



SOLUTION

for the rebus

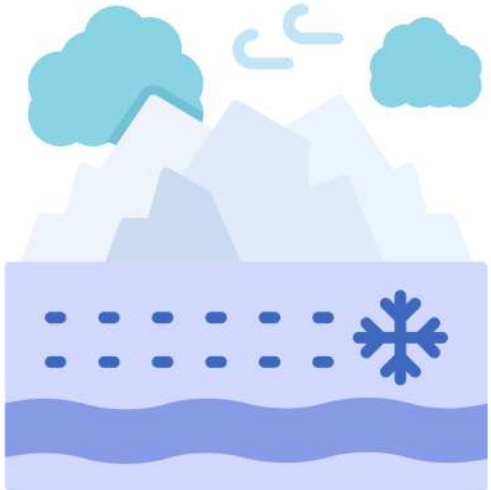
OCEAN CHALLENGE

Pear - Ma - Frost

=

Permafrost

Explain how the melting of permafrost if a vicious cycle, and what the relation is with climate change. (Tip: a vicious cycle is when two bad things amplify each other).



SOLUTION

for the rebus

ARCTIC CHALLENGE

Paw - Chin - G

=

Poaching

Think of an action that judges could ask poachers to do in order to restore the biodiversity.





SOLUTION

for the rebus

GRASSLAND CHALLENGE

Inn - Vase - Eve

=

Invasive

Discuss if a similar principle could also apply to animals, and try to find at least two examples of insects who are more and more present in Europe.

SOLUTION

for the rebus

DESERT CHALLENGE