



The **Water-Mining PlayDecide Game**: Ένα επιτραπέζιο παιχνίδι διαλόγου για το νερό και τη λειψυδρία στην Ευρώπη.

Αυτή η έκδοση είναι ιδανική για μαθητές και μαθήτριες (14-18 ετών) και για ταχύρρυθμα εργαστήρια. Η πλήρης έκδοση του παιχνιδιού (στα Αγγλικά) είναι διαθέσιμη εδώ.

Το παιχνίδι δίνει τη δυνατότητα στους παίκτες να εξοικειωθούν με ένα ζήτημα, να το δουν από διαφορετικές οπτικές γωνίες και να διαμορφώσουν ή να αποσαφηνίσουν τη δική τους γνώμη. Καλεί, επίσης, τους παίκτες να εξετάσουν τα ζητήματα ως ομάδα: μπορείτε να καταλήξετε σε μια συναινετική πρόταση;

Η διάρκεια είναι συνολικά περίπου 45 λεπτά (αλλά μπορείτε να παίξετε τμήματα του παιχνιδιού γρηγορότερα). Ο ιδανικός αριθμός παικτών είναι 4 έως 6. Σχηματίστε παράλληλες ομάδες, αν υπάρχουν περισσότερες από 6 παίκτριες.

Εδώ θα βρείτε όλα τα απαραίτητα στοιχεία για μια ομάδα 6 ατόμων.

Το παιχνίδι χρειάζεται έναν συντονιστή που θα αφιερώσει χρόνο για να εξοικειωθεί με τη ροή και το περιεχόμενο του παιχνιδιού πριν από το παιχνίδι. Ως συντονίστρια, θα βρείτε μια σειρά από πρόσθετες οδηγίες, για να καθοδηγήσετε τις ομάδες σας κατά τη διάρκεια του παιχνιδιού. Εάν υπάρχουν ομάδες μαθητριών που παίζουν το παιχνίδι στην τάξη, η δασκάλα μπορεί να ενεργήσει ως συντονίστρια, αλλά κάθε ομάδα θα πρέπει επίσης να ορίσει και έναν συντονιστή μεταξύ των μαθητών.

Μπορείτε επίσης να δημιουργήσετε τα δικά σας παιχνίδια χρησιμοποιώντας το πρότυπο PlayDecide ή να μεταφράσετε υπάρχοντα παιχνίδια στη δική σας γλώσσα.

Το παιχνίδι αναπτύχθηκε στο πλαίσιο του ευρωπαϊκού έργου Water-Mining που χρηματοδοτείται από την ΕΕ. Η παρούσα έκδοση έχει σχεδιαστεί από την Αλίκη Γιαννακοπούλου (Μουσείο Επιστημών NEMO), τον Δρ. Στέφανο Χερούβη (Ecsite - Ευρωπαϊκό Δίκτυο Επιστημονικών Κέντρων και Μουσείων) και τον Giuseppe Loveno Garofalo (Ecsite - Ευρωπαϊκό Δίκτυο Επιστημονικών Κέντρων και Μουσείων) και βασίζεται στην αρχική ιδέα και το παιχνίδι που σχεδίασε ο Michael Creek.

Για οποιαδήποτε ερώτηση ή πληροφορία, στείλτε μήνυμα στα scherounis@ecsite.eu & Giannakoroulou@e-nemo.nl.

Καλή διασκέδαση!



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Οδηγίες

Το παιχνίδι περιέχει:

- Κάρτες με πληροφορίες σχετικά με τη λειψυδρία στην Ευρώπη (πράσινα φύλλα)
- Κάρτες με ζητήματα σχετικά με τη λειψυδρία στην Ευρώπη (μπλε φύλλα)
- Ιστορίες ανθρώπων που παρέχουν διαφορετικές οπτικές γωνίες για το πώς το ζήτημα του νερού επηρεάζει τη ζωή τους
- Κίτρινες κάρτες
- Οδηγίες για την εκπαιδευτικό

Τι χρειάζεσαι:

- Εκτυπώστε και κόψτε τις κάρτες από αυτό το PDF. Για καλύτερα αποτελέσματα εκτύπωσης, χρησιμοποιήστε χαρτί 160g/m². Περιέχει όλα τα απαραίτητα στοιχεία για μια ομάδα 4-6 ατόμων. Για περισσότερους συμμετέχοντες, εκτυπώστε περισσότερα αντίγραφα.
- Ένα λευκό χαρτί A2 ή A3 για κάθε ομάδα
- Στυλό/μαρκαδόροι

Οδηγίες για έναν αυθεντικό διάλογο

Πριν από την έναρξη του παιχνιδιού, η συντονίστρια υπενθυμίζει σε όλους τους παίκτες τις βασικές αρχές ενός αυθεντικού διαλόγου. Ο καθένας μπορεί να σηκώσει μια κίτρινη κάρτα για να διακόψει τη συζήτηση σε περίπτωση που αισθάνεται ότι κάποιος δεν σέβεται τις βασικές αρχές. Όταν λυθεί το πρόβλημα, η συζήτηση συνεχίζεται. Πρέπει να υπενθυμίζεται στις παίκτριες ότι ο καθένας έχει:

1. Δικαίωμα στη φωνή: πείτε την γνώμη σας
2. Αλλά μην εμμένετε σε αυτή πριν ακούσετε και άλλες
3. Να σέβεστε τους συνομιλητές. Αφήστε τους να τελειώσουν πριν μιλήσετε εσείς
4. Εκτιμήστε τον πλουραλισμό των απόψεων
5. Εκτιμήστε την έκπληξη ή τη σύγχυση ως σημάδι ότι ψηλαφίζετε νέες σκέψεις ή συναισθήματα
6. Αναζητήστε κοινό έδαφος
7. Το "αλλά" τονίζει τη διαφορά - το "και" τονίζει τη συμφωνία

Πώς παίζεται:

Εκδοχή 1η:

- Split the class/group into teams of 4-6 people and give each team a set of the game, an A2 or A3 white paper, pens/markers
- Educator reads the **Introduction** to the whole group:

Introduction: *Planet Earth has 1.26 trillion litres of water. That's been the case for billions of years. The Earth does not create new water, so nothing is added, but not much is lost either – perhaps a little water escapes into space. Which means that we have to make do with 1.26 trillion litres. It's a cycle. The Earth is very good at reusing water... and we have to get good at that, too. Many citizens across Europe have the luxury of not worrying about how they will access water. But as the planet becomes more populated and demand for water increases - a crisis is pending. So what does this mean and how can we manage this precious resource? That's what we want to discuss but first we need to learn more about what are the facts and issues that surround the use of water today.*

- Each team to designate one member for the role of the facilitator to take notes
- Ask teams to pick up cards and discuss. Each team member to pick up and read out loud to the team one card. First, discuss the **Info** cards, then the **Issue** cards, and at the end, the **Story** Cards.
- Using the A2 or A3 paper, each team will create a mind map with important information, issues, interesting facts, challenges and concerns they come across during reading and discussing the cards. Check out the following basic instructions on mind mapping:
 - a. Start in the middle, with your central idea or topic
 - b. Use central branches (thicker) to focus on key concepts; add sub-topic branches (thinner) as you add detail
 - c. Write on lines, using single words if you can
- Teams will come up with two **Call-to-Action Plans** on the A2 or A3 paper. Part A of Action Plan concerns 'What can we do about the water scarcity issue as individuals.' Part B of the Action Plan concerns 'What can we do about the water scarcity issue as community members.' In both Action Plans teams should consider the following questions and suggestions:
 - a. Who are the people we need to engage?
 - b. What are the actions we propose to take?
 - c. Who are the stakeholders involved?
 - d. You may consider preparing a letter to the mayor, creating a Tik-Tok video about water scarcity, making a radio announcement, etc.

Option 2:

The teacher guides the discussion with the entire class, selecting the cards to discuss and sparking discussion with the group.

Info Card 1

Water, water everywhere

72% of the Earth's surface is covered with water, but less than 3% of this is suitable for uses like drinking and irrigation.

Info Card 2

Water stress around the Mediterranean

Around the Mediterranean, 20% of the population lives under constant water stress, where there is not enough quality water to meet demand. In summer, over 50% of the population is affected by water stress.

Info Card 3

Water shortages mean energy shortages

In the European droughts of summer 2022, the lack of stored water affected hydropower generation and cooling systems of other power plants.

Info Card 4

What drives water scarcity?

Water scarcity is driven by climate and water demand. The climate controls whether freshwater resources are available, and in what season. Water demand depends on how much we use water for activities like industry, agriculture, tourism, irrigating parks and street cleaning, for example.

Info Card 5

Europe wastes water

The water saving potential in Europe has been estimated at 40%. Water could be saved by making buildings and manufacturing more efficient, and reducing leakages in networks.

Info Card 6

Europe's rivers under pressure

Only 42% of the 1.7 million kilometres of rivers and streams in Europe have "good ecological status", meaning they only vary slightly from undisturbed conditions. Urban wastewater is currently the main threat to their status.

Info Card 7

Tourists put pressure on water

The service sector, including tourism, accounts for 11% of Europe's total annual water use. Small Mediterranean islands in particular are under severe water stress conditions as tourists can outnumber locals 15 to 1.

Info Card 8

Reused water can help biodiversity

Waste water can be reused to restore river flows or supplement water in lakes and wetlands, helping to preserve biodiversity.

Info Card 9

Who uses the most water?

Agriculture is the largest user of freshwater in Southern Europe, varying between 50 per cent in Italy and 80 per cent in Greece, followed by industrial and urban use, including tourism and commercial activities.

Info Card 10

Some EU countries reuse a lot of water

Cyprus already reuses more than 90% of its wastewater. In Malta, the figure is 60%. Greece, Italy and Spain reuse between 5 and 12% of theirs.

Info Card 11

Heat energy from wastewater

Much urban wastewater comes from warm sources like showers and washing machines. Studies show that wastewater contains nearly five times the amount of energy that is needed for the process of treating it. So treatment facilities could help heat and power the cities that produce it.

Info Card 12

How is water reused

Water can be reused for drinking. It can also be reused for agriculture, industrial processes, watering parks and gardens

Info Card 13

Reusing brine from seawater

Desalinating sea water produces a by-product, brine. It is often released back into the sea where it can damage the ecosystem. But new technologies mean the brine can be exploited as a source of raw materials for agriculture and the chemical industry.

Info Card 14

Desalination is mostly for drinking water

In the EU, most of the water produced by desalination is used for the public water supply. It makes up around 4.2% of the total used by the public on average.

Info Card 15

Agriculture and Europe's economy

44 million jobs in Europe are dependent on agricultural production. The EU is the world's largest agrifood exporter, with over 40% of our land mass devoted to agriculture.

Info Card 16

Europeans say yes to drinking recycled wastewater

According to a 2022 survey, 75% of respondents in the Netherlands favour recycling water to produce drinking water. In Spain the figure was 73%.

Info Card 17

"Forever chemicals"

PFAS are known as "forever chemicals" - widely used, man-made chemicals that can accumulate over time, threatening the health of humans and the environment at high concentrations.

Info Card 18

Water shortages affect crops

In the European droughts of 2022 water and heat stresses meant a much smaller yield of crops - particularly maize, soy beans and sunflowers

Issue Card 1

How do we regulate what we don't know?

Safety is regulated based on what is known. What about the risks that we don't know?

Issue Card 2

More, more, more

By finding technological solutions for water stress, aren't we letting people and companies get away with wasting even more water?

Issue Card 3

War for water?

In the 20th century, wars were fought for oil. Will the wars of the 21st century be fought for water?

Issue Card 4

Water as a human right

Access to safe drinking water and sanitation are internationally recognised human rights. How does this affect your view?

Issue Card 5

Even more future resources from wastewater

In the future, bioplastics, enzymes, metals and minerals could all be recovered from wastewater with advancing technologies - all valuable resources. Will they be relevant compared to what we consume?

Issue Card 6

Water seems cheap

If water cost us more, would we waste it less and value it more?

Issue Card 7

Treat more or pollute less?

Shouldn't we push industry to pollute water less, rather than investing in treatment to take the pollutants out?

Issue Card 8

Look to the future

It's hard enough to get governments to invest in solving current issues. How can we get them to address the future problems we face with water and nutrient scarcity?

Issue Card 9

Agriculture: go big or go small?

Do we want Europe's animal production to feed Europeans? Or to export as well?

Issue Card 10

Is water reuse cost-effective?

How can we measure the benefits?

Issue Card 11

Who owns sea water?

Does the sea belong to us all? Should private companies be allowed to make profit from desalination?

Issue Card 12

Global economy or local economy?

If we treat our wastewater or sea water, use it to water crops, and then export the vegetables to other countries, how is that helping local people?

Issue Card 13

Who pays to treat water?

The more we treat and reuse wastewater and sea water, the more it costs. Who is going to pay for that?

Issue Card 14

One size fits all?

Conditions in countries across Europe are so different - should we focus on local solutions?

Issue Card 15

The “yuck factor”

Do people reject the idea of treating wastewater as a source of drinking water because of the scale of the risks? Or because the idea disgusts them?

Issue Card 16

Transparency

How can we make sure water reuse is done transparently?

Issue Card 17

How can we ensure we help the poorest in Europe?

By investing in access to fresh water, or by investing in the economy to reduce poverty?

Issue Card 18

Who does sewage belong to?

Sewage comes out of me! Do I own it? Is it OK if companies make money from it?

Guidelines Yellow Card!

Use the yellow card to help the group stick to the guidelines. Wave it if you feel a guideline is being broken or if you do not understand what is going on.

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Story Card 1

Ekaterina, Cyprus



I work for the water department for the government of Cyprus. Ours is the most water-stressed country in Europe - lots of long droughts. Desalination of seawater is one way of producing more water, but it's expensive as it requires a lot of energy. We're looking into new technology that uses the brine to produce raw materials for industry and make desalination affordable. But honestly, times are tight and it's a struggle to find private investors to support the development of this new technology.

Story Card 2

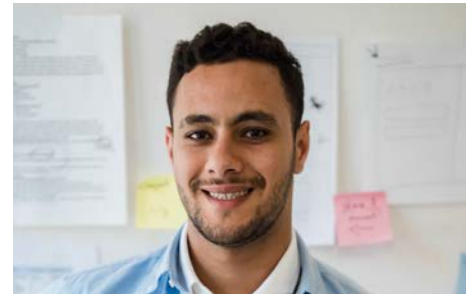
Alicia, Spain



I work in tourism for the city government in Almería - the most beautiful city in Andalucia! But of course water is a big issue for us and I'm glad the government is planning on desalinating sea water. I heard they use 80% of the desalinated water for agriculture and only 20% in the city - shouldn't more be used in our cities, where it benefits local people directly and supports the tourist industry?

Story Card 3

Thomas, France



We've been hit hard by droughts where I live in France and the heatwaves are getting worse and worse. It's a real worry for me that this situation is only going to get more serious over time. What I don't understand is why farmers here are trying to grow crops like maize, to feed livestock, that require a lot of water. They need to move on and adapt so we don't waste water and fertiliser trying to keep their farms going.

Story Card 4

Nikoleta, Bulgaria



I work at a wastewater treatment plant where we take contaminants out of sewage, producing fresh water. With new technologies we can do that even more efficiently. For me it's a tricky one. I understand that we need to find new sources of water but I'm still not sure I'd be comfortable with a whole generation growing up drinking water recovered from sewage. As much as I know it's sustainable, I do find the idea disgusting. We can never rule out the possibility that a disease like E coli enters the water system from treated sewage. I don't trust the government with my tax money - why would I trust them to keep my water safe?

Story Card 5

Antonia, Italy



I'm an environmentalist living on the Po river in Italy and it makes me so sad these days to see the state of the Po. It's been ruined over the years by industry and agriculture. And now with the droughts farmers are leaving fields empty. To me this is an ecological emergency. I have heard that fresh water can be recovered from wastewater and introduced to these ecosystems to help them recover. Is more technology the answer? For Italians here, the river is part of who we are!

Story Card 6

Annemarie, Netherlands



I'm a researcher and we've developed technology that can extract a valuable biopolymer from urban wastewater that can be used for fertiliser or in the textile industry, for example. It's very green - fully degradable and means we can rely less on other polymers. Now we're setting it up in Portugal and I'm excited to see how it can help things locally there, even if I'm a bit nervous about what the reaction will be like from local people. I'm learning to speak a bit of Portuguese so I can find out!

Story Card 7

Khadija, Sweden



In my city they're talking about starting to reuse wastewater for drinking water. Some people find that disgusting but it seems like a good ecological option to me. That said, one thing does worry me. I've been reading about antibiotics and even heavy metals that can accumulate in our bloodstream - if we reuse water, don't these pollutants come with it? I'm not sure we know all the long-term risks.

Story Card 8

Hans, Belgium



I work for a private water company here in Belgium and we have started producing drinking water at a desalination plant on the Belgian coast using canal water. 12 million litres a day! The new technology we're using is very exciting and we hope to expand rapidly, creating lots of jobs locally. Although I have to say my heart sinks every time I see my neighbours wasting water hosing their gardens!



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