



GAMES CATALOGUE

Developed by Games with a Heart

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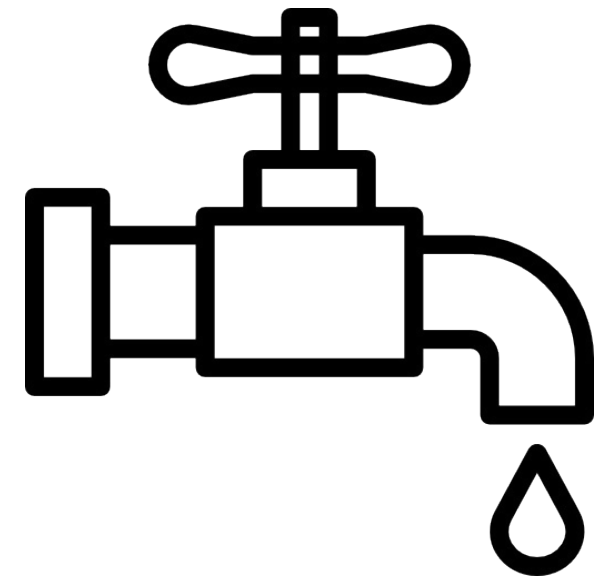
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Agriculture, Water and WASH Games

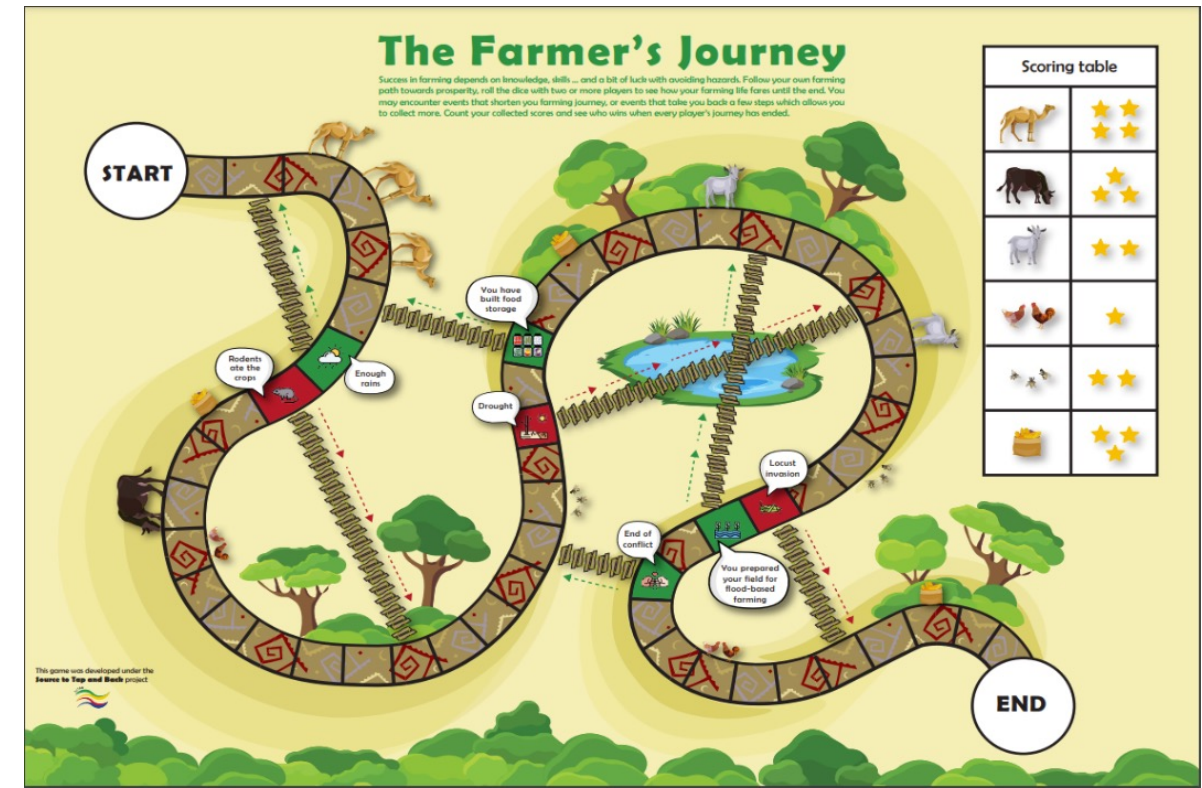
The Farmer's Journey

General info

Farmer's Journey is a board game that encourages players to find the best ways to run their farm and gain as much wealth in the form of stars as possible. This game is dictated by a player's luck. The player rolls a dice and requires no knowledge or skill. The messages and visuals on the playboard will allow children and adults alike to discuss what a farmer's journey can look like when uncontrollable and/or unpredictable events affect their water supply and agriculture practices. This will either lead to a longer or shorter journey and hence collected stars at the end of it.

Rules

The players roll the dice and move along the path, collecting points in the form of animals or agricultural products. With a bit of luck with the dice, they will be able to move on the path, gathering as many points as possible. However, some uncontrollable events can take the players back and forth and thus shorten or lengthen their journey. Once everyone has finished, the player with the most points at the end of the game is the winner.



Didactic aspect

Individual skills, awareness, impartment of knowledge

Number of players

2-4 players

Age group

7+ years old

Land Use Game

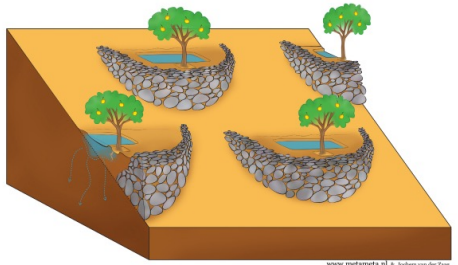
General info

The Land Use game was developed in collaboration with GIZ and the Ethiopian Ministry of Agriculture. This is an interactive game where players mainly community members, explore their area with their fellows and identify the land-use practices that can help them restore and maintain their area. With the facilitator, players can explore which land use practice is suitable for their area and which steps are needed to implement it.

Rules

Players are asked to draw a map of their area (including water resources, water ways, agricultural areas, topography, roads, settlements, main buildings, etc.). After this, each player is given a card which displays a specific water and soil conservation practice. Each practice has its own characteristics and practicalities which are mentioned on the back of the card. The goal of the game is to find the right locations for each specific practice within their area and to explain to the rest of the players what the benefits of applying this practice will be, how the practice can be carried out and sustained, and by whom. In cases where a practice is not suitable for a context, there can be a discussion on the reasoning not to include it and why it would not be successful, if implemented. On the back side of each card, detailed information can help facilitators to explain players the pros and cons of each practice.

Half-moons



The diagram shows a cross-section of a slope with several semi-circular stone structures (half-moons) built across it. Each structure has a small tree growing in the center. The structures are designed to catch runoff water and allow it to infiltrate the soil.

Half-moons

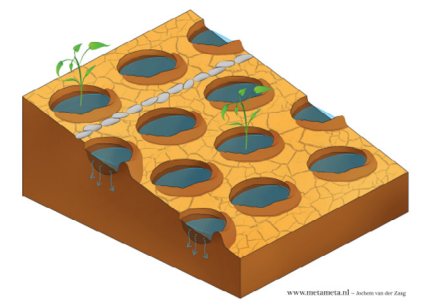
Introduction
Half-moons, also known as semi-circular bunds, eyebrows or demi moons, require the creation of small bunds in the shape of half-moons with their tips on the contour. The ponding area inside the half-moon retains water flowing down the slope from above the bund. Their designs vary depending on the chosen plant requirements to be cropped on them (tree, crops or grasses), the topography and the climatic conditions. They are more efficient than trapezoidal bunds in the ratio between the bund volume and the ponded area.

Purpose
They capture runoff for and help increase the production of grass, trees, and crops. They are also used to regenerate rangelands. Function: water retention and re-use.

Geographical suitability
Soil moisture storage

Area/physical requirements	Construction requirements	Advantages	Limitations
<ul style="list-style-type: none"> Slope: <math>1-4\%</math> Radius: <math>2-20m</math> Geographical suitability: soil moisture storage. It can be used for rangeland restoration. 	<ul style="list-style-type: none"> In dry conditions, the bunds are bigger and equipped with spillways. It is necessary that they enclose a relatively large catchment area compared with the cultivable area. In wetter conditions, more bunds of smaller radius are constructed per hectare. To avoid the risk of breakage, diversion ditches can be carefully laid out on the half-moons to avoid excessive stress. 	<ul style="list-style-type: none"> On very steep slopes half-moons can be used to grow tree species. Combined with controlled grazing further helps the vegetation regeneration. 	<ul style="list-style-type: none"> When the half-moons are constructed using soil, the first rain season may form breaches in them as the soil needs some time to get consolidated. The structure can get breaches, due to animal grazing or other reasons. They should be repaired immediately.

Planting pits (zai pits)



The diagram shows a cross-section of a slope with several circular holes (zai pits) dug into the soil. Each pit contains a small tree. The pits are designed to catch runoff water and allow it to infiltrate the soil.

Planting pits (zai pits)

Introduction
Planting pits consists of the creation of circular holes on the soil to catch and retain runoff water. Planting pits vary in dimensions, shape, and husbandry systems according to the tree or crop type planted on it. The best known is the western African 'zai'. It is a technique traditionally used to plant trees, although increasingly used for crops. It shares similarities with the technique of half-moons.

Purpose
Collect runoff, rainfall and concentrate soil moisture for increase production of trees and crops. Function: soil conservation, water recharge and water retention.

Area/physical requirements	Construction requirements	Advantages	Limitations
<ul style="list-style-type: none"> Applicable in not sandy and loose soils. Geographical suitability: soil moisture storage. 	<ul style="list-style-type: none"> High amount of manual labour. It is suggested to do the excavation on the dry season (right after the rain period) when the soil is easier to work with. To decrease the runoff speed, stone lines are laid on the contour every 20-30 lines. 	<ul style="list-style-type: none"> Restoration of degraded land and a significant increase in yield. Groundwater levels raise. Improve water retention and buffers the agroecosystems capacity. Trees and crops are grown in the pits and benefit for higher moisture content. If compost and/or manure is added, this adds nutrients and attracts termites that loosen up the soil around the planting pits which increases the soil capacity to absorb runoff water. 	<ul style="list-style-type: none"> Planting pits are not recommended for steep lands. It is not suitable for sand and loose soils since there is risk of collapse. If applied in pastoral lands, when land is rehabilitated with pits, the field must be protected from excessive grazing that could damage the structures.

Didactic aspect

Cooperative and individual skills, sharing knowledge, involvement of actors

Number of players

4+ players

Age group

16+ years old

Wash quartet

General info

WASH Quartet is a version of the Austrian card game ‘Quartets’, designed by Games with a Heart to playfully educate its audience on water, sanitation and health issues. Previous iterations have been widely tested in Ethiopia (2018), Yemen (2020), Uganda (2021) and Greece (2022), and have been released in multiple languages, including Amharic, Arabic, English, Greek, Kakwa and Spanish. WASH Quartet is a game that fosters discussion among peers and help them incorporate new habits and change behaviors.

Rules

Players take a hand of cards and try to collect all the cards in one category by taking turns trying to guess if an opponent has the specific card they need. The goal is to collect as many matching series of cards, or ‘quartets’, as possible to win. Taking turns asking the other players for missing cards from one category (for example, “Do you have the ‘Use water and soap’ card from the category ‘Clean Hands?’”) leads to an entertaining and educative experience. The current game categories include:

- Safe Drinking Water
- Always Clean Hands
- Safe Sanitation
- Safe Food
- Unhappy Flies
- Health
- Disease Prevention

The game can easily be expanded with new categories and practices, to allow for easy adaptation to local themes and expansion of the maximum number of players.



Didactic aspect

Individual skills, support for vulnerable people, sharing knowledge, incorporating new habits


Number of players

2-4 players

Age group

9+ years old

OVERVIEW OF ALL CARDS



Safe Drinking Water						
	Always Clean Hands					
		Clean Hands when Caregiving				

Safe Sanitation						
	Safe Food					
		Unhappy Flies				
			Disease Prevention			

Wash code cards

General info

Utilizing the same cards used in the WASH Quartet, Code Cards is a new ruleset that has been tested in Lesbos, Greece by Games with a Heart. This game fosters discussion and learning of new lessons among players and helps them incorporate new habits and change their behaviors.

Rules

The goal of the game is to collect as many sets as possible. The winner is the person with the most sets. However, there is more to it:

1. The players shuffle the cards and put nine of them on the table with the images face up in three rows of three cards. The next nine cards are added in the same way on top of the first, until all cards have been distributed over the nine piles
2. The main objective of the game is to create horizontal or vertical rows of cards that all have the same category, yet have different symbols. If you manage to do so you can take these three cards from their piles and keep the set.
3. During your turn, you are allowed to do one of three things:
 - Take a card and put it face up on another pile, trying to make a series.
 - Take a card and put it face down on another pile - try to remember the symbol on the card and wait for a next chance!
 - Turn a card over so that is face up and try to make a series.
4. The game is over when there are no more series to make. Each set that is formed gives the player score 1 point. If you have two series of the same category you get double points for that series. The player with the most points wins!



Didactic aspect

Individual skills, support for vulnerable people, incorporating new habits

Number of players

3-4 players

Age group

7+ years old

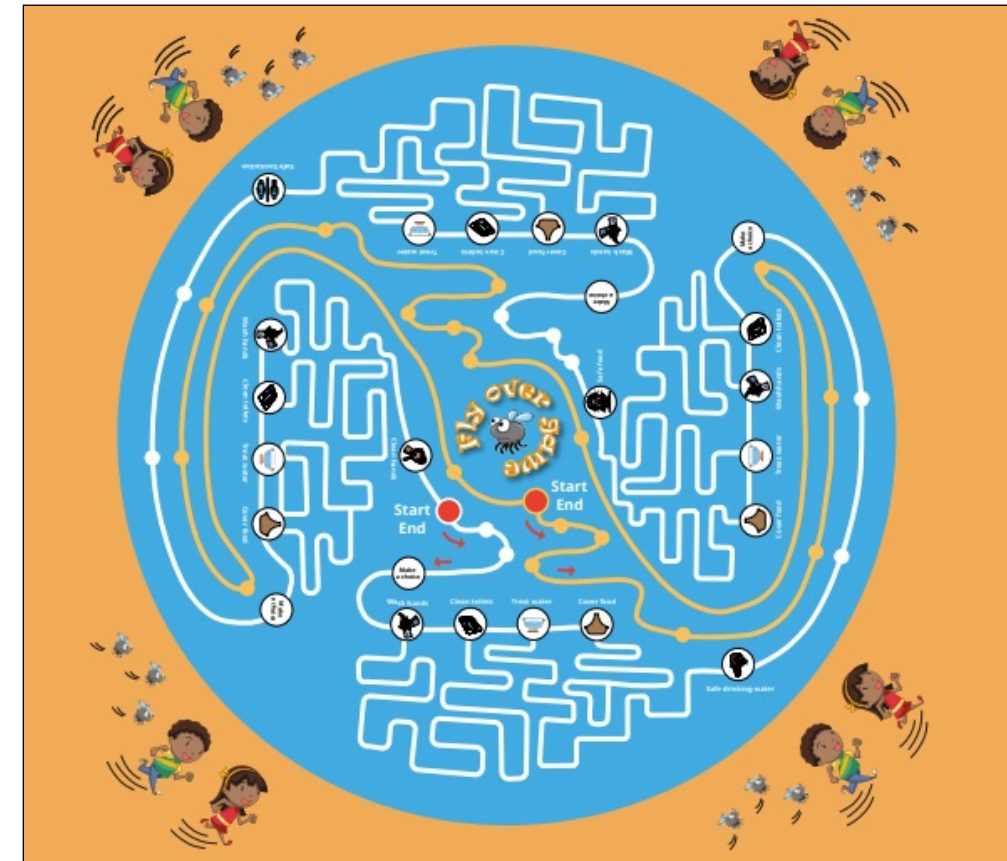
Fly over

General info

The Fly Over game takes players on a promotional journey of hygienic practices through the water cycle at the household level, starting from the tap and ending at the toilet. It promotes actions related to safe drinking water, sanitation and hygiene. The game consists of a playboard, pawns and a WASH Dice (with sides portraying either a fly or a child). The game fosters discussion and learning on new lessons in a playful manner.

Rules

In this cooperative game, players work together as a team and throw the dice to move forward. If it lands on the child facing, their pawn can move up one space, however, when it lands on the fly facing, the opposing pawn gets to take a step. This continues until the players land on a 'Make a Choice' icon. When arriving on such an icon, a WASH-related question is read out loud to test the players' knowledge on water, sanitation, and hygiene at the household level. On a correct answer, the players can take the right path forwards. To improve the replay value, educators are encouraged to cover up the answer mazes themselves with a piece of paper so the participating students can really focus on getting to the right answer with knowledge. Will the players be able to reach the end of the labyrinth before the dirty fly does to win the game?



Didactic aspect

Cooperative skills, impartment of knowledge, more attractive education

Number of players

3-4 players

Age group

7+ years old

Wash mazes

General info

A selection of simple mazes made to practice the knowledge on WASH topics, like disease prevention (shown below), safe drinking water and safe food. This game fosters learning of new good habits and helps players to change behaviors on various topics.

Rules

WASH mazes is played either individually or as a team. Players should identify the right practices for achieving certain objectives such as safe drinking water, safe food and disease prevention, cut them out and paste them in the right order on the maze.

Once successfully filled in, mazes can be used as posters to promote the messages about good hygienic practices.

Didactic aspect

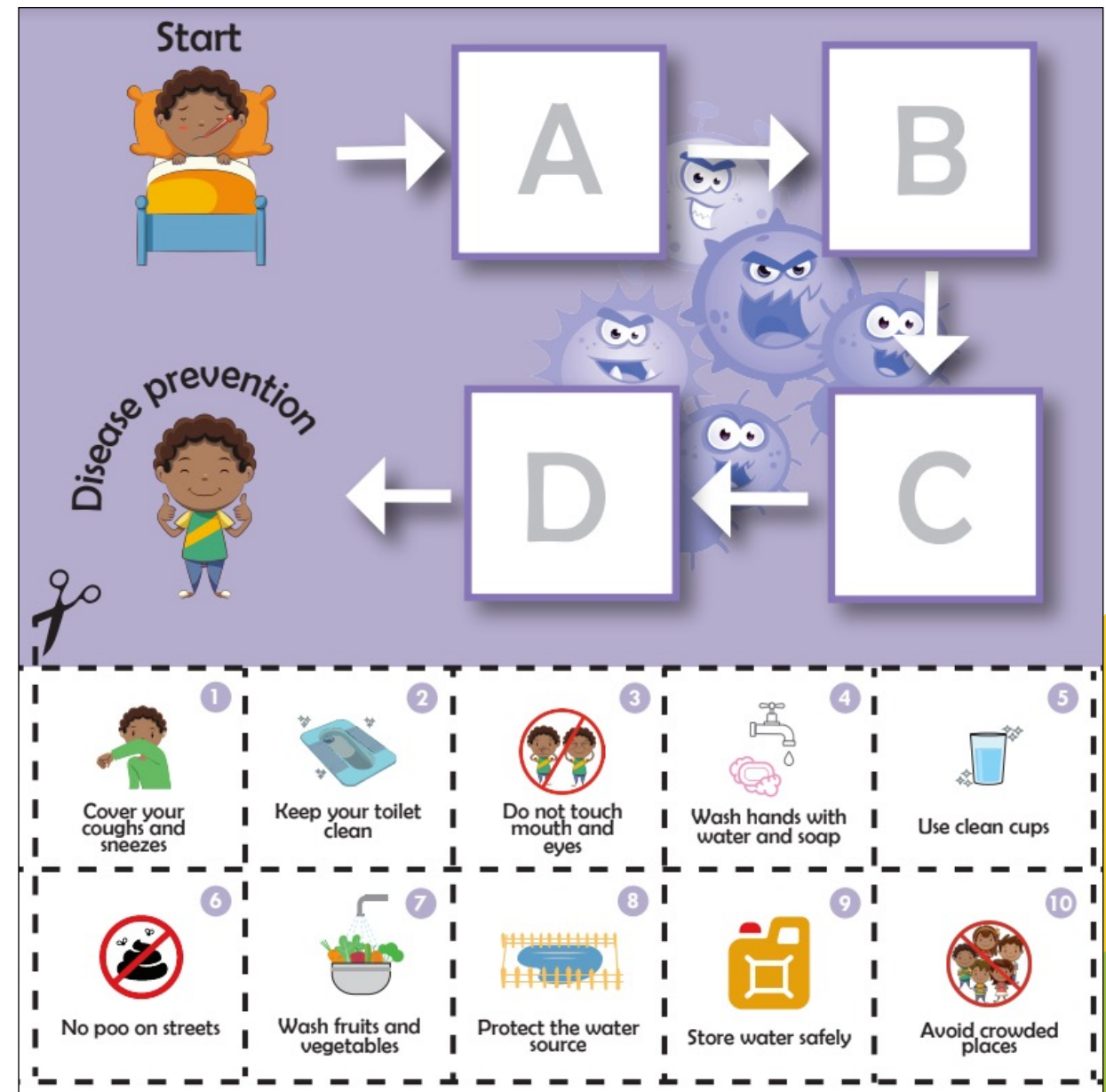
Making education more attractive, individual skills, awareness.

Number of players

1+ players

Age group

7+ years old



Start

A → **B**

↓

C → **D**

Disease prevention

1 Cover your coughs and sneezes

2 Keep your toilet clean

3 Do not touch mouth and eyes

4 Wash hands with water and soap

5 Use clean cups

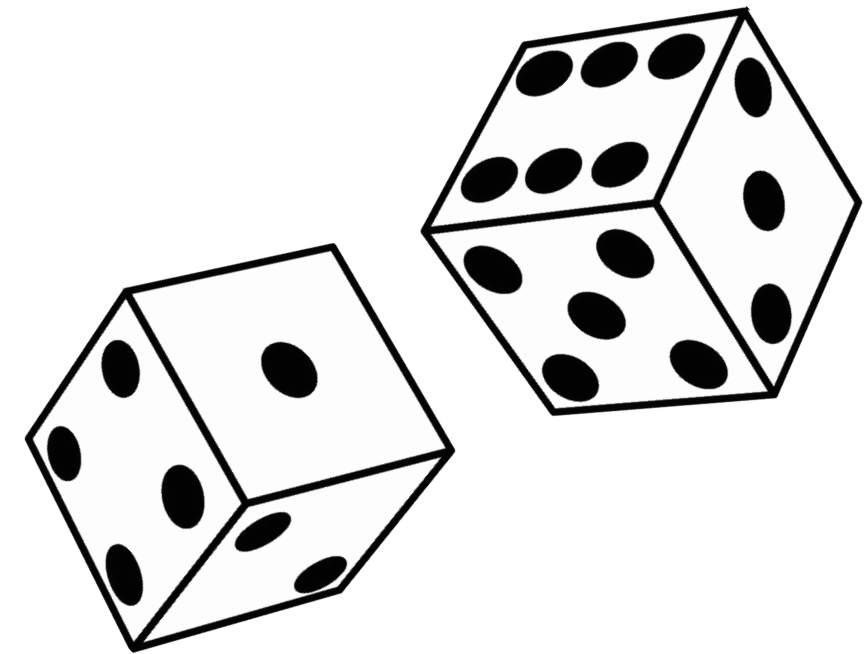
6 No poo on streets

7 Wash fruits and vegetables

8 Protect the water source

9 Store water safely

10 Avoid crowded places



Physical Board Games

Arctic sea

i General info

The goal of this game is to get the boat across an icy sea (the playing board). This can be accomplished by pushing ice floes on to the playing board. There are a few variations to play the game, which are explained below. This game educates the participants on individual skills and teach them about topics such as climate change.

Rules

One player begins by putting as many ice floes as possible on to the playing board. The floes that remain are put aside. The first player takes one floe from the remaining floes and shoves the floe over the playing board (see image 2 for where on the board). The floes that fall off are left alone and are used by the next player in his turn. The next player takes the fallen floes and shoves them one by one over the playing board. When there are none fallen or remaining floes, the players take a floe that is about to fall off from their side of the board game.

When a boat sails out of the marked area on the playing board, the players' turn is over, and they should start over in their next turn. This also applies when their boat sails out of the marked area due to their opponents' game. A player wins when his/her boat sails of the board in the right area.

VARIATION 1 (MAX. 4 PLAYERS):

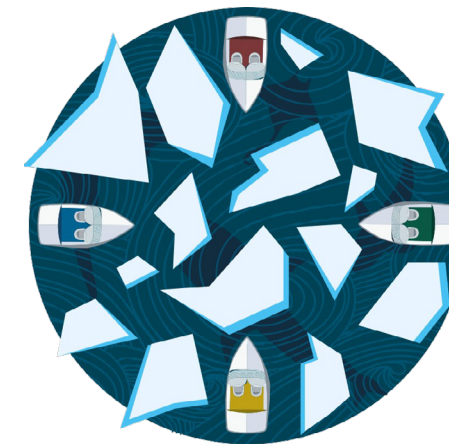
A boat lies on an average size floe. (Each player should use the same size floe). The player will try to move his/her boat across by shoving the floes like in the gameplay.

VARIATION 2 (MAX. 4 PLAYERS):

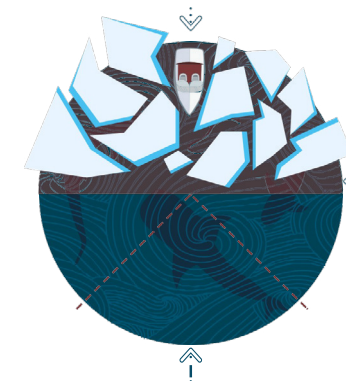
A boat lies on an average size floe. (Each player should start with the same size floe). At the beginning of the turn, the player should move his/her boat to an adjacent floe, he/she starts to move the floes as in the regular gameplay.

COMPONENTS:

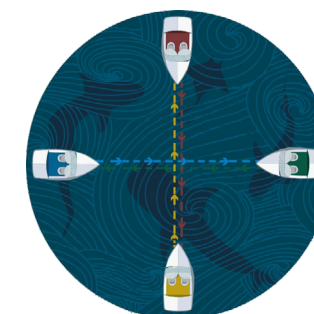
- Playing board
- Pieces of ice floes
- Boat pawns



Starting point for player 1



The area in which player 1 needs to finish (fall of the board)
Player 1 can push ice floes on his side of the board (2 player game)



Didactic aspect

Awareness, individual skills, sharing knowledge, strategic skills



Number of players

2-4 players



Age group

9+ years old

Animal dice

General info

This game takes place in the animal kingdom. Who is more suitable to survive, an elephant, a condor, or a tiger? Animal Dice can raise the awareness on biodiversity and other topics.

Rules

Each player has a set of six animal dice. At the beginning of the round, all the players pick a dice of their set simultaneously and throw them at the same time. This is repeated once more, then each player counts their combined points.

The player with the most points gets to take a dice from an opponent player by throwing the "natural selection-dice". This dice decides which dice can be taken from another player. The winning player can use the confiscated dice in the beginning of the next round. If the option dice falls on 1, the players should take the first dice of one of their opponent players. If the dice falls on 2, the second dice. If the dice falls onto a blank, the players can take a dice of their like. This is the ending of the first round.

After this, a new round starts with the same steps repeated. The players lose when they have one or none dice left. That's why it is important to choose carefully which dice to throw. Do they choose an antelope or an elephant? The player who ends with more than one dice wins the game.

Sometimes after throwing two dice, players get to a tie. When this happens, the players in the tie throw a third dice. Not having a third dice means they lose the tie.

FOR THE TEAM PLAYERS:

When playing in teams, both team members take a dice without consulting each other. The combination of these two dices decides which team wins the round. The winning team gets to throw the natural selection-dice and then take a dice from every other team. In this case, players also lose when they only have 1 dice left.

In the game played with expansion set the players may add two mythological creatures of their choice to the set of dice. The players then play with 8 dice. If they throw any of the combinations described below, they gain a special power:

- 1 on a unicorn: 3 points are deducted from one of the opponent's total scores.
- 3 on a dragon: Players are allowed to throw an additional third dice.
- 5 with the centaur: if the other dice the players throw is a six, they get an additional three points.
- 2 on the mermaid: players can re-throw the mermaid dice.
- 6 on the sphinx: the first dice players throw counts double.
- 4 on the phoenix: when players have the lowest score this round, the winner can't take the dice from other's set.



Card:	Can be changed to:	Magic Nr.	Total	Front	Top	Side 1	Side 2	Bottom	Behind
Elephant	Sphinx	6	24	1	3	3	5	6	6
Polar Bear	Dragon	3	24	5	3	5	4	3	4
Hippo	Centaur	5	23	6	3	2	5	5	2
Condor	Mermaid	2	22	5	6	2	4	3	2
Deer	Phoenix	4	21	4	2	4	3	5	3
Rabbit	Unicorn	1	20	1	4	1	4	6	4



Didactic aspect

Awareness, making education more attractive



Number of players

2-6 players



Age group

7+ years old

Knossos

i General info

After a secret affair with a bull, the queen of Crete gave birth to a monster. The Minotaur, half person, half bull. The king of Crete ordered his brilliant architect to build a maze to lock up the Minotaur for eternity. Unfortunately, the monster only survived on human flesh. Every year the city of Athens was mandated to send fourteen young people to Crete, to be fed to the Minotaur. This was until Theseus appeared at the scene, which hunted the monster up in its maze, the Knossos. Knossos is a strategic maze-game, where players need to conquer their position on the board. The game provides strategic thinking skills.

Rules

The game board is made out of squares. The size of the board depends on the number of players. With two players nine squares are used, with three players twelve squares are used, and with four players sixteen squares are used.

Each square is part of the maze and consists out of sixteen planes. In one of the sixteen planes a flag can be planted. The squares are randomly laid down into the maze. Each player begins at the corner of the game board with their pawn. At the beginning of the game each player has six flags standing next to the board game.

Players take turns and during a turn they can:

- Move their pawn three planes on the same square or on the next square but they can never go through the walls; or
- Pick up one of the squares and rotate them to bother the opponent.

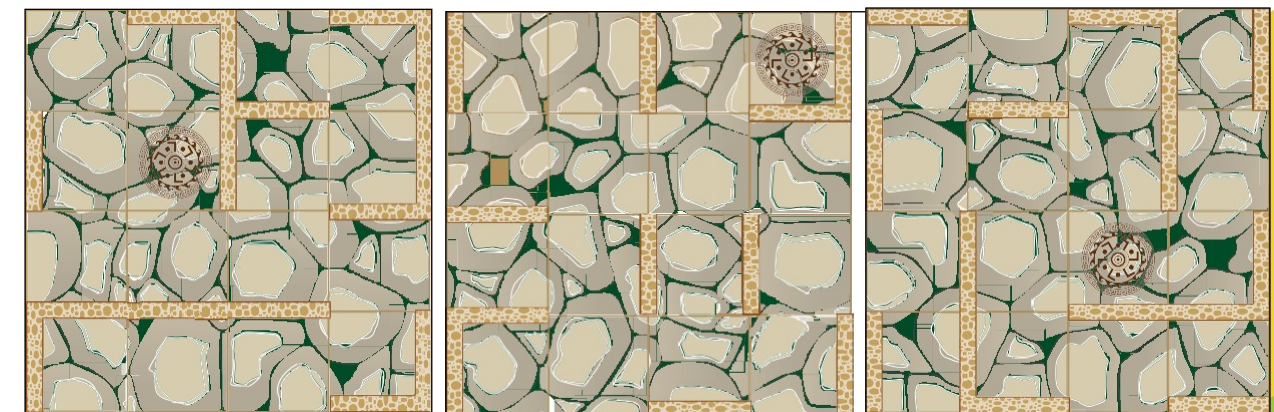
The goal is to plant as many flags as possible. When players move over a

flag-plane, they are allowed to place a flag of their own color in the plane. When the flag-plane is already taken by other player, players are allowed to remove that flag and place their own flag instead. The first player that is successful at planting his/her six flags in the maze wins the game.

ADDITIONAL RULES:

Rotating the squares:

- Players can't rotate the same square as their opponents rotated in their previous turn.
- Moving the pawn:
- Players can't jump over the pawn of their opponents.
- When played by two or more players and the same square in three sequent turns were moved, players should leave the square after the third turn.



Didactic aspect

Individual skills, making education more attractive



Number of players

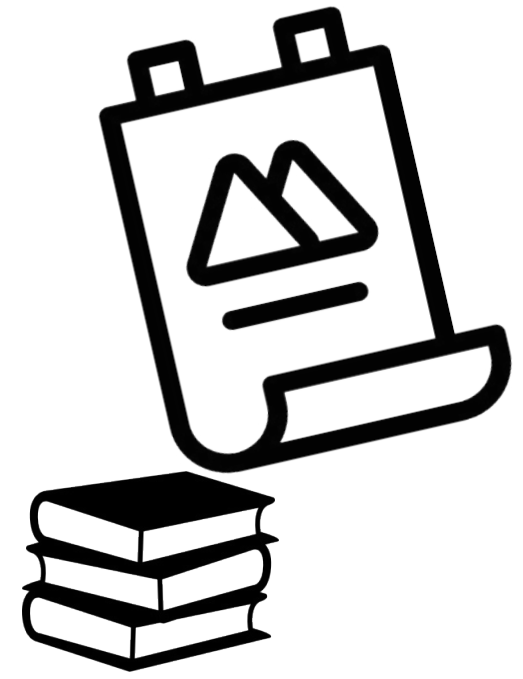
2-4 players



Age group

9+ years old

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Educational Posters

Educational posters

General info

The next section of this catalogue consists of educational posts developed by MetaMeta that can be used alongside our games to further enhance the knowledge taught there.

The first three posters were developed by MetaMeta and published by GIZ GmbH, and portray the base crop data of maize, pearl millet and sorghum, as well as the actions required by the farmers to maximize their yields (such as land preparation, fertilization, varieties, crop planning and pest control).


In the section after that, four posters are displayed explaining a variety of water-related lessons, such as access to safe water, household water consumption, water footprint and the worldwide water usage.

Didactic aspect

Individual skills, awareness, making education more attractive

Maize

Maize, (*Zea mays* L. (corn)), is the most abundantly produced cereal in the world and it has become a staple food in many parts of the world, including Ethiopia. In Ethiopia the majority of the produced maize is used for human consumption (for example in injera and other traditional foods), especially in the rural areas. The nutritional value of common maize is quite similar to other cereal grains characterized with low protein quality and high carbohydrate content. Maize is not considered to be drought tolerant, though this depends on the variety planted and in the past years drought tolerant varieties have been developed.



LAND PREPARATION

- Start with the preparation of the farmland before the rainy season starts, so that the seeds can be sown at the start of the rainy season.
- The soil should be covered with crop residues before planting the seeds to avoid soil erosion due to wind or rain. Also, this adds nutrients to the soil and increases the soil water balance.
- Another option is to soak the seeds in the dry season before planting.

CROP PROTECTION

- Weeding by hand is best: first weeding should take place around 18 to 25 days, second weeding between 35 to 40 days, and third weeding between 50 to 55 days.
- The removal of plant residues from the field will reduce pest infestation by 90%.
- Use legumes, potatoes, onions or other vegetables for intercropping.
- Biological, Mechanical Integrated Pest Management (IPM) is encouraged, as alternative to use of chemicals.
- In the case of Striga, intercropping with a trap-crop can be used, such as sunflower, ground nut and soybean. Also crop rotation is recommended.
- If maize has a disease, collect and burn the maize.

WATER MANAGEMENT

In semi-arid areas, rainfall occurs unevenly of the year. It is vital to use moisture retention techniques such as tie-edges and mulching.

VARIETIES

In areas with low humidity and rainfall, it is important to use fast-growing and drought-tolerant maize in combination with other moisture retention measures.

SEED MANAGEMENT

- Maize should be sown at the start of a rainy season.
- Maize should be sown in rows, 25 kg seeds/ha. Spacing of the row is 75cm between rows and 25-30 between

CROP PLANNING




- To increase crop production, apply crop rotation so that soil fertility is enhanced and pests and weeds are avoided.
- Alternating cereals with maize increases the nitrogen in the soil.
- Intercropping is carried to avoid pests and diseases and to produce two or more crops at the same time in the same field.
- Maize can be intercropped with beans, pigeon peas, nuts, lentils and sesame seeds.

USE OF CHEMICAL FERTILIZER

- Use of chemical fertilizer is not encouraged, taking into account the nutrients in the deposited sediments.
- Compost and manure can be used as natural fertilizer up to 8 to 10 tons per hectare.

HARVEST & POSTHARVEST PRACTICE

- Timing of maize harvest varies per species and the environment.
- In semi-arid and arid regions, the average time is usually 90 to 120 days after sowing, depending on the type of seeds used.
- Maize can be harvested after it has blackened or dried on the top of the fruit.
- The moisture content of the corn must be lowered by 12 to 14% before it can be stored for a longer time.
- To avoid crop damages by pests, three-layer plastic bags can be used (hermetic bags) or if stored in a barn, the barn should be clean and dry.

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April December 2011

Pearl Millet

Pearl Millet, locally known as 'Bajra', is a nutritious coarse grain cereal. In Ethiopia, pearl millet is often used as replacement for maize and sorghum in dry areas, because it is suitable on a wide range of soils and in harsh production environments. It is mainly grown for human consumption serving as staple food and as fodder. The grain is among the most nutritious of the major cereal grains and has also a high nutritious value for poultry and livestock.



LAND PREPARATION

Pearl millet is a suitable crop to grow in the drier parts of semi-arid tropics and withstands harsh environments. Grows well on low moisture and fertile soils with a low pH.

WATER MANAGEMENT

- ✓ Pearl millet is very drought tolerant and therefore produced in semi-dry areas. It withstands drought better than sorghum and maize.
- ✓ Pearl millet has a high water use efficiency.
- ✓ Suitable in areas with rainfall of 250 mm or higher.
- ✓ Soil bunds can be made to ensure that soil, seeds and fertilizer are not washed away.

VARIETIES

The following varieties are common in Ethiopia: Kolla-1, Kako-1, Tessema, Gudeta, Mecha, Necho, Debata, Bareda, Gule, Wama, Baruda, Degu, Boneya, Padet, Tadese.

SEED MANAGEMENT

- ✓ Seed rate: 3 kg/ha
- ✓ It is best to sow pearl millet 5 cm from each other and 50 to 60 cm between the rows.
- ✓ 180,000 plants per hectare. On highly productive soils or under high levels of management, up to 225,000 plants per hectare are possible. On extremely sandy, drought soils up to 90,000 plants per hectare.

CROP PROTECTION

- ✓ Intercropping with sunflower and pigeon pea reduces white grub (pest)
- ✓ Mixing of Carbofuran 3G 12 kg/ha with the pearl millet seed
- ✓ In case of heavy incidence of shoot fly, spray the crop with 0.07% Endosulfan at day 10 and 20 after germination.
- ✓ Weeding should be done at day 15 and 30 after sowing.
- ✓ Application of NPS and urea at a rate of 121 and 39 kg / ha respectively.

CROP PLANNING

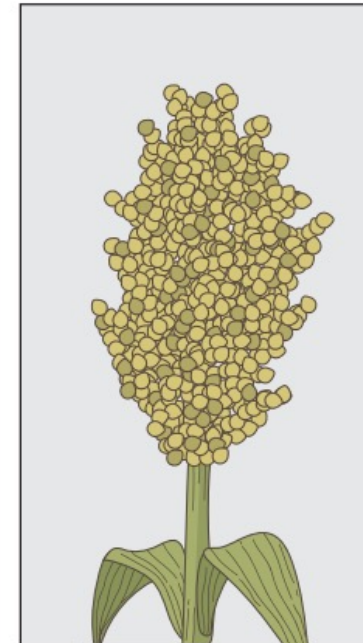
- ✓ Pearl millet can be intercropped with cow pea, pigeon pea, sunflower
- ✓ Pearl millet has a growing season of 75 up to 240 days, depending on the water availability.
- ✓ Crop rotation with wheat, soybean and potato helps to avoid those crops from nematode problems.

HARVEST & POSTHARVEST

- ✓ Best stage to harvest pearl millet is when the plants reach physiological maturity determined by the black spot at the bottom of the grain. When the crop matures, the leaves turn yellowish and present a nearly dried up appearance. The grains are hard and firm.
- ✓ The usual practice of harvesting pearl millet is cutting the earheads first and the stalks later. The stalks are cut after a week, allowed to dry and then stacked.
- ✓ Grains that have a moisture of 14% or lower are considered 'dry'.
- ✓ Grains that are stored for more than 6 months, should have a moisture content of less than 12%.

Sorghum

Sorghum is a coarse cereal. In Ethiopia sorghum is used as one of the important indigenous food crops and is only second to tef basis for as injera. It is mainly grown for human consumption and as feed grain. Sorghum grows in a wide range of agro ecologies most importantly in the drought-prone parts where other crops can least survive.



LAND PREPARATION

- ✓ The soil needs to be well-drained so that there is enough moisture in contact with the soil to allow the seeds to germinate.
- ✓ Land preparation should be started just before the start of the rainy season. It is generally sufficient to plow 2 to 3 times.
- ✓ Once the first crop has been harvested and the field has not lost its moisture, a second crop can be sown. The third growing cycle is sown in the dry season.

WATER MANAGEMENT

- ✓ In (semi-)arid areas rainfall is often not sufficient for the sorghum production, so adequate water management is required for a good productivity.
- ✓ Tie-ridging causes the rain to accumulate in the soil and capture moisture.
- ✓ Mulching can be done with plant residues such as from sesame seeds, pigeon pea bushes, and left straw to reduce soil evaporation and increase the soil moisture.
- ✓ Drought can be addressed through early planting and use of early maturing drought tolerant cultivars and water conservation.

USE OF ARTIFICIAL FERTILIZER

- ✓ Use of artificial fertilizer is not recommended, taking into account the nutrients available in the deposited sediments.

USE OF NATURAL FERTILIZER

- ✓ Mulching is vital to protect the soil from cracking, soil moisture from being wasted and improve soil temperature, soil structure, biological activity and make it for water easier to infiltrate into the soil.
- ✓ Manure and compost use increases the sorghum and soil productivity. Should be broadcasted in the field and ploughed in or spread in bands along the planting furrows and mixed with soil before sowing. Recommended rate: 5-10 ton ha-1. Best if applied 1 month before sowing.

Recommended to plant pigeon pea as inter-cropping in the sorghum field as an additional source of fodder (2 to 3 tons per hectare), but also as a source of fertilizer to improve soil fertility, reducing erosion, helps controlling weeds and maintains soil moisture.

VARIETIES

- ✓ High yields can be achieved with ESH-1, ESH-2, ESH-3, ESH-4 and ESH-5 varieties.
- ✓ Sorghum cultivated together with moisture retention methods and soil fertility technologies can increase the sorghum productivity by 14.9%.
- ✓ For the agro-pastoralist context, early maturing varieties are recommended.

SEED MANAGEMENT

- ✓ In wet areas, sorghum should be sown from the last week of June to the first week of July.
- ✓ About 10 to 12 kg sorghum seeds per hectare
- ✓ Between each plant, a distance of 15 cm is good and between rows 75 cm.
- ✓ An appropriate sowing depth is 4 to 5 cm deep for dry planting and 2.5 - 4 cm for wet planting.

CROP PROTECTION & PEST CONTROL

- ✓ Sorghum crops grow slowly from the beginning, so weed control is important to avoid competition for water, light and nutrients. If possible, sorghum is always weed-free.
- ✓ Weed control should be done within the first 18-20 days, and a second time around 35-40 days.
- ✓ Use of weed-resistant sorghum cultivars is very effective, also against pests.
- ✓ Some weeds, like Striga, have to be removed by hand and burned, in order to control.
- ✓ Crop rotation can be done with legumes. Also field sanitation helps to avoid pests.
- ✓ Integrated Pest Management (IPM) is recommended, including early planting.
- ✓ To avoid rats: no barn area on the field and use traps and cats to catch rats.

CROP PLANNING

- ✓ Sorghum can be rotated with maize, other grain types, sesame seed, cowpea and peanut to increase soil fertility, to avoid spreading of pests and disease and to keep the soil moist.
- ✓ Sorghum can be intercropped with legumes.

HARVEST & POST HARVEST PRACTICE

- ✓ It takes 110 to 120 days for fast and drought-tolerant varieties in humid areas to fully develop and be physiologically mature.
- ✓ Sorghum can be harvested after it has blackened or dried on the top of the fruit/the base of the grain.
- ✓ Sorghum can be harvested after it has blackened or dried on the top of the fruit/the base of the grain.
- ✓ Sorghum can be dried in the field when it is harvested, if it is harvested with a threshing machine, the grains should be dried in the sun. Humidity must be reduced to 12.5% before it is ready to be stored in a barn.
- ✓ The barn should be clean, dry, well ventilated and free of pests and debris.



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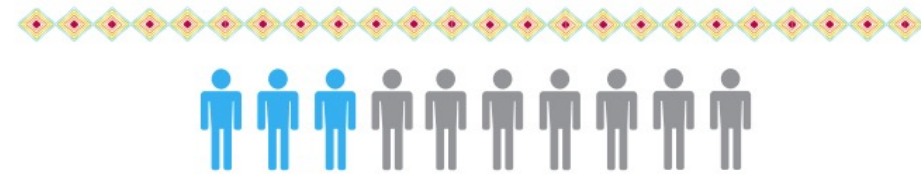
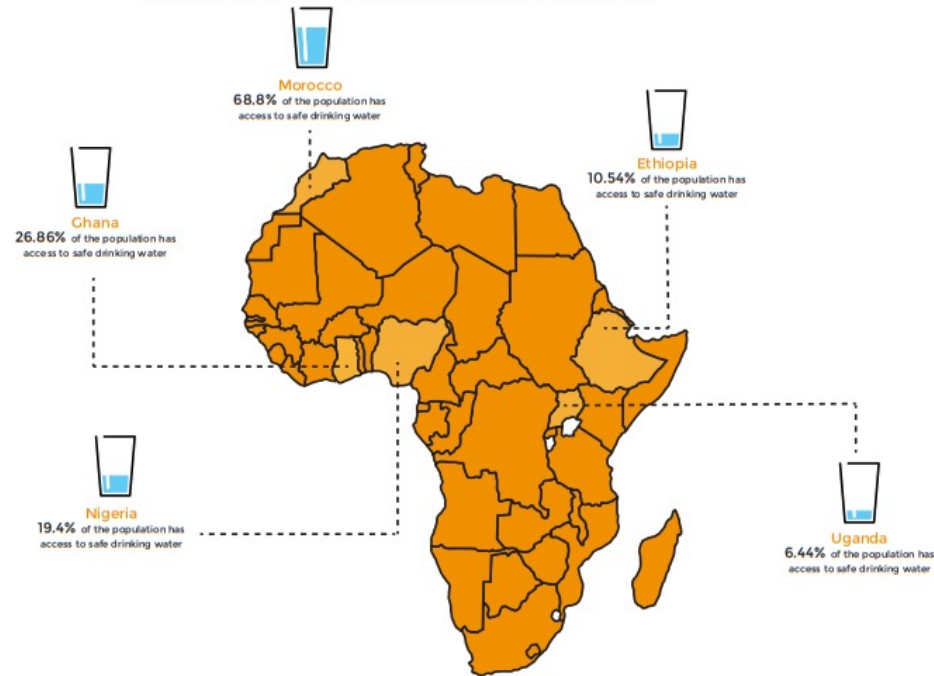
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Access to safe drinking water | Bishaan Dhugaatii Qulqulluu Argachuu | ንፁህ የመጠጥ ውሃ አቅርቦት

This graph shows the percentage of population that had access to safe drinking water in some African countries during the year 2015. Having access to an improved water source¹ increases the likelihood that drinking water is clean and safe but it doesn't guarantee that it is free from contamination.



In 2015, 3 in 10 people in the world have no access to safe drinking water. From these people...

Adunyaa kana Irratti nama 10 keessaa namni 3 bishaan qulqulluu hin arganne. Kana keessaa...

በለም ላይ ከ10 ሰዎች 3ኛው ንፁህ የመጠጥ ውሃ አቅርቦት ከነህ ውስጥ

263 million | miliyoni | ሚሊዮን
spend more than 30 minutes per round trip collecting water
bishaan warrabuf dhaqaa gata daqiiqaa 30 itti fudhata
ለዎቹ ውሃ ለመጠጥ ከ30 ደቂቃዎቹ በላይ ደብዳቤ (ይርዎ ማለት)



159 million | miliyoni | ሚሊዮን
drink water directly from surface sources, such as streams and lakes
kallatumaan bishaan lafaa irraa kan akka laga fi haroo dhugu
ለዎቹ ውሃን ከገጠማዊ (ከወንዞች እና ሀይሎች) በቀጥታ ይጠጣሉ



844 million | miliyoni | ሚሊዮን
do not have basic drinking water services
tajaajila bu'ura bishaan dhugaatii hin arganne
ለዎቹ መሰረታዊ የመጠጥ ውሃ አገልግሎት አያገኙም

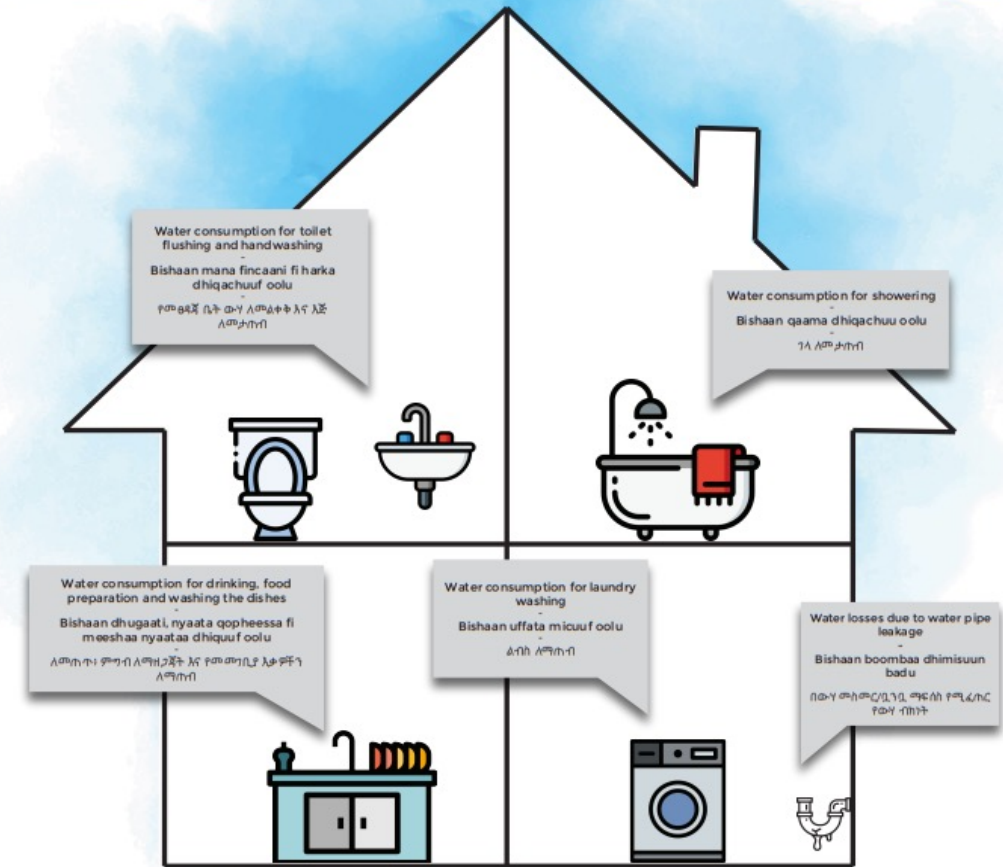


¹Improved water source: public taps or standpipes, tube wells or boreholes, protected dug wells, protected springs and rainwater collection.
Source of data: WHO/UNICEF Joint Monitoring Programme for Water Supply, Sanitation and Hygiene (JMPS)

Household water consumption

Fayyadama Bishaan Maatii

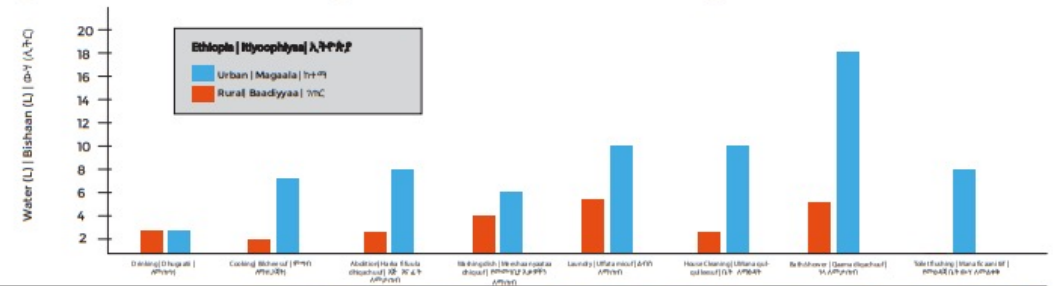
የቤት ውስጥ የውሃ ፍጆታ



Average daily water consumption per person | Gidugaleessan bishaan namni tokko guyyaatti fayyadamu | አማካይ የውሃ ፍጆታ በሰው በቀን



Average indoor household water use | Gidugaleessan bishaan maatii mana keessatti fayyadamu | አማካይ የቤት ውስጥ የውሃ ፍጆታ



Source of data for the US: United States Environmental Protection Agency (EPA) and Water Research Foundation (Residential End Uses of Water, 2016)
Source of data for the Europe: European Environment Agency (EEA)

Water Footprint | Faana bishaanii | የውሃ አሻራ

What is water footprint?

The water footprint measures the amount of water used (consumed and/or polluted) to produce the goods and services we use. It can be measured the amount of water needed for a single process, such as growing rice, or for a product, such as a pair of jeans, which would include all the water that is consumed and polluted in all processing stages of its production.



The water used (consumed and/or polluted) for a pair of jeans would include the cotton to be grown, ginning and spinning of the fibres, weaving, sewing and wet processing of the fabric to ultimately have the finished product.

For one kg of beef water used would include the water required for the grasses and fodder (for example maize and soy) that the cow eats, the water it drinks and it would consider that the cow would need an average of 3 years to mature.

Did you know that it takes...

FOODS AND DRINKS NYAATA FI DHUGAATI

<p>30 liters of water to make one cup of tea</p> <p>Shaa'yi bircuqqoo tokko hojjachuuf bishaann litira 30 barbaachisa</p> <p>30 ሊትር ውሃ እንደ ብርቅ ሻይ ለማዘጋጀት</p>	<p>100 liters of water to make one banana</p> <p>Muuzaa tokko oomishuuf bishaan litira 100 barbaachisa</p> <p>100 ሊትር ውሃ እንደ ሙዝ ለማዘጋጀት</p>	<p>2,400 liters of water to make one burger</p> <p>Bargarii tokko oomishuuf bishaan litira 2,400 barbaachisa</p> <p>2,400 ሊትር ውሃ እንደ ቦርገር ለማዘጋጀት</p>
<p>84 liters of water to make one cup of coffee</p> <p>Buna sinii tokko hojjachuuf bishaan litira 84 barbaachisa</p> <p>84 ሊትር ውሃ እንደ ስነ ቡና ለማዘጋጀት</p>	<p>840 liters of water to make 1kg of bread</p> <p>Daabboo kiiloo tokko oomishuuf bishaan litira 840 barbaachisa</p> <p>840 ሊትር ውሃ እንደ ኪሎ ጻብ ለማዘጋጀት</p>	<p>4,650 liters of water to make one steak (300g)</p> <p>"Isteekii" tokko (300g) oomishuuf bishaan litira 4,650 barbaachisa</p> <p>4,650 ሊትር ውሃ እንደ ስቴክ(300ግ) ለማዘጋጀት</p>
<p>75 liters of water to make one glass of beer (250ml)</p> <p>Biraa bircuqqoo (250ml) tokko hojjachuuf bishaan litira 75 barbaachisa</p> <p>75 ሊትር ውሃ እንደ ብርቅ(250ሜሊ) ቢራ ለማዘጋጀት</p>	<p>1,500 liters of water to make 1kg of cane sugar</p> <p>Sukaara kiiloo 1 oomishuuf bishaan litira 1,500 barbaachisa</p> <p>1500 ሊትር ውሃ እንደ ኪሎ ስኳር ለማዘጋጀት</p>	<p>9,467 liters of water to make one doro wat</p> <p>Ittoo andaanqoo tokko oopheesuf bishaan litira 9,467 barbaachisa</p> <p>9,467 ሊትር ውሃ እንደ የዶሮ ውሃ ለማዘጋጀት</p>

PRODUCTS OOMISHAALLEE

<p>1,320 liters of water to make one ream of paper</p> <p>Waraqaa deskaa tokko oomishuuf bishaan litira 1320 barbaachisa</p> <p>1,320 ሊትር ውሃ እንደ ጥሬዝ ወረቀት ለማምረት</p>	<p>2,700 liters of water to make one T-shirt</p> <p>Shamiza "T-shirt" tokko oomishuuf bishaan litira 2700</p> <p>2,700 ሊትር ውሃ እንደ ቴሽርት ለማምረት</p>	<p>32 liters of water to produce a microchip (2g)</p> <p>"chipii xiqqaa ykn "micro-chip" tokko (2g) oomishuuf bishaan litira 32 barbaachisa</p> <p>32 ሊትር ውሃ እንደ 2ግ ማይክሮችፕ ለማምረት</p>
<p>8,000 liters of water to make one pair of bovine leather shoes</p> <p>Kophee googaa "bovine" xindii tokko oomishuuf bishaan litira 8,000 barbaachisa</p> <p>8,000 ሊትር ውሃ እንደ ጥንድ የቆዳ ጫማ ለማምረት</p>	<p>8,000 liters of water to make one pair of jeans</p> <p>Uffata Jinsii xindii tokko oomishuuf bishaan litira 8000 barbaachisa</p> <p>8,000 ሊትር ውሃ እንደ ጂንስ ሱራ ለማምረት</p>	<p>400,000 liters of water to produce a car</p> <p>Konkolaata manaa tokko oomishuuf bishaan litira 400,000 barbaachisa</p> <p>400,000 ሊትር ውሃ እንደ የቤት መኪና ለማምረት</p>

Hoekstra, A. Y., & Chapagain, A. K. (2011). Globalization of water: Sharing the planet's freshwater resources. John Wiley & Sons.
 Hoekstra, A. Y. (2015). The water footprint of industry. In Assessing and measuring environmental impact and sustainability (pp. 221-254). Butterworth-Heinemann.
 Chapagain, A. K., Hoekstra, A. Y., Savenije, H. H., & Gautam, R. (2006). The water footprint of cotton consumption: An assessment of the impact of worldwide consumption of cotton products on the water resources in the cotton producing countries. Ecological economics, 60(1), 196-203.
 Van Oel, P. R., & Hoekstra, A. Y. (2010). The green and blue water footprint of paper products. Value of Water Research Report Series, 46.
 Williams, E. D., Ayres, R. U., & Heller, M. (2002). The 1.7 kilogram microchip: Energy and material use in the production of semiconductor devices. Environmental science & technology, 36(24), 5504-5510.

Water use worldwide

The amount of precipitation falling on land is almost 110,000 billion m³ per year. About 56% of this amount is evapotranspired by forests and natural landscapes and 5% by irrigated agriculture. The remaining 39% or 43,000 billion m³ per year is converted to surface runoff (feeding rivers and lakes) and groundwater (feeding aquifers). Part of this water is being removed from these rivers or aquifers by installing infrastructure in order to be used for various purposes. This removal of water is called water withdrawal.

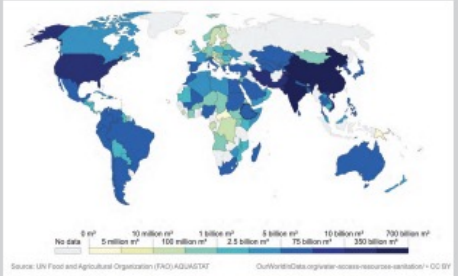
Main water users worldwide



Agriculture ~70% of the total fresh water
Industry ~20% of the total fresh water
Domestic use ~10% of the total fresh water

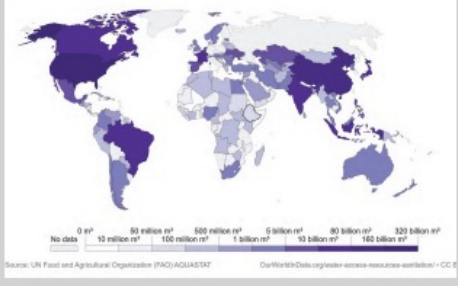
This figure illustrates the total agricultural water withdrawals in 2010 measured in m³ per year.

Agricultural water is defined as the quantity of water withdrawn for:



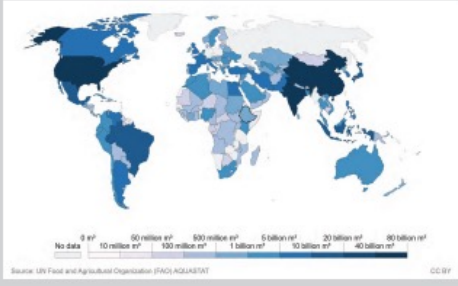
This figure illustrates the total industrial water withdrawals in 2010 measured in cubic meters (m³) per year.

Water withdrawn by industries that are connected to the public supply network is included in municipal water withdrawal (box below). This graph illustrates the quantity of water withdrawn for the cooling of:

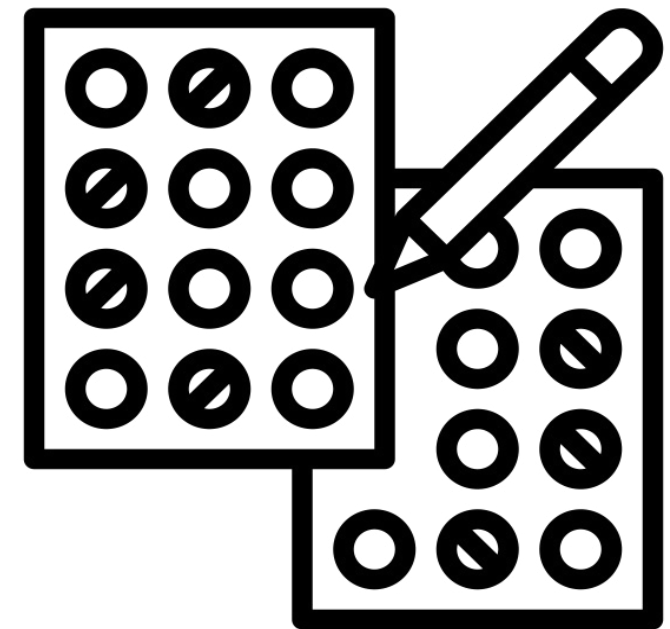


This figure illustrates the total water withdrawn for municipal (domestic) purposes in 2010, measured in cubic metres (m³) per year.

Municipal water is the quantity of water withdrawn for the direct use of the population, such uses include:



Source of figures and graphs: Food and Agriculture Organization of the United Nations (FAO)



Magazine Games

Expedition through the Himalayas

General info

Players make their way through the treacherous Himalayas Mountain range trying to be the first to reach the basecamp. They will have to hide from blizzards, escape avalanches, and ensure they remain firmly outside of the grasping claws of the abominable Yeti! This game explores the dangers of surviving in the mountains, with a hint of fantasy mixed in, and it can help raise the awareness on topics.

Rules

Starting with the youngest player, each player rolls a dice and moves through the labyrinthine map of the Himalayas. Players should try to be the first to make it to the basecamp as they yell “IEEE!” at the sight of a Yeti, desperately look for a safe area to wait out a snowstorm, make good use of Snow scooters left behind by previous expeditions to make up for lost time and try not to get caught in an avalanche!



Didactic aspect

Individual skills, making education more attractive, awareness

Number of players

2-6 players

Age group

7+ years old

Deer & lion

General info

Two species, deer, and lions, square off. Which will be victorious and reach the other side of the board first? A game explaining tactics and nature to the player.

Rules

Each player has two pawns with which to attempt to cross the field. Each turn, a player can move one pawn one space horizontally or vertically. Players should be the first to cross the field with their deer or lions to win but they have to watch out for the holes – if they step on one of those, it will mean game over!

Didactic aspect

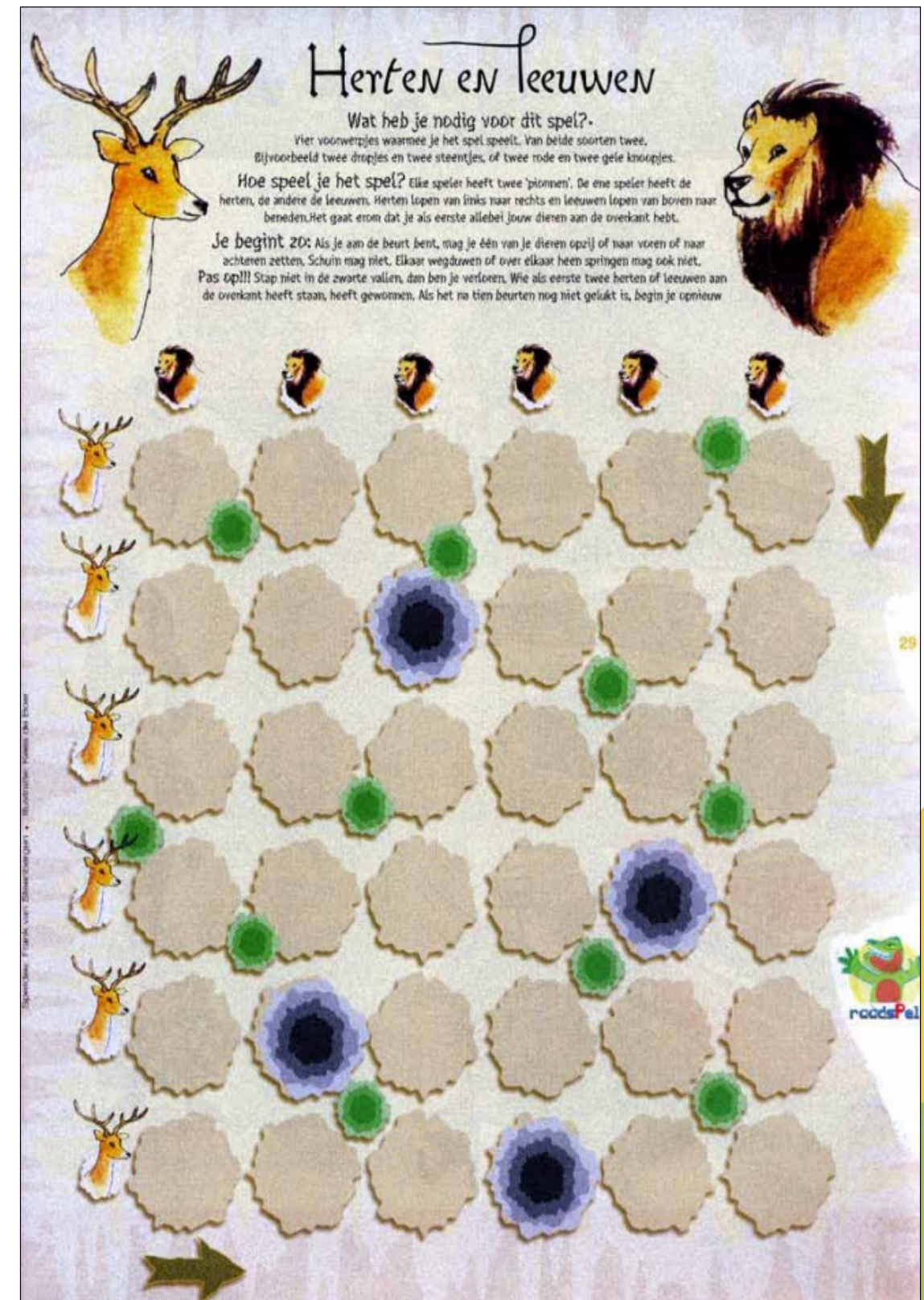
Making education more attractive, awareness

Number of players

2 players

Age group

7+ years old



The savage Toucan River

General info

Players explore the dangerous Toucan River, meeting friends and foes alike as they attempt to be the swiftest one to reach the end of the river. The game educates on individual skills and raises awareness on certain topics.

Rules

Players take turns exploring the dangers of the Toucan River, hopping from area to area and making sure that no dangerous animals get them before it is too late!



Didactic aspect

Making education more attractive, awareness



Number of players

2-4 players



Age group

7+ years old



Catching Butterflies

General info


It is summer, and butterflies are floating in the breeze! Why not catch a few? In this game, the players are butterfly collectors attempting to catch more of the marvelous creatures to study. For this game, you will need a printed version of this game, a set of scissors, dice and two different game pieces (pawns, two different coins, etc).

Rules

The players cut out the flower game board along the solid back lines, then cut out each game card along the black lines. Shuffle the cards and place each face-down on the gameboard. One player searches specifically for yellow butterflies and the other looks for the blue butterflies. Set the game pieces on the Player Start spaces and decide which player begins by rolling off. The first player then rolls the dice and moves that number of spaces. A player can move their game piece left, right, up and down, but not diagonally.

When a player lands on a card, they turn that card over to see if it is one of the cards in their color. If it is not, they turn it face down once more. There are some special cards the player may come across during their search – their rules are explained on the next page! In order to begin collecting the butterflies, the player must first find a net of their chosen color. Once they've found their net, remove it from the game board and place it in front of them. From that moment onwards they are allowed to catch their color of butterflies. The players continue taking turns rolling the dice and hunting for

their butterflies, removing it from the game board and placing it in front of them. Blank spaces created by removed cards are still spaces over which the players can move and land. The player that collects all five of their butterflies first is the winner!

 **Didactic aspect** Making education more attractive, awareness

 **Number of players** 2-6 players

 **Age group** 7+ years old



If you land on a card that isn't a butterfly or net card, follow these instructions:

A thistle snags your net. You must give up one of your nets. The other player puts that card back on the board while you close your eyes.

A wasp is very bad luck. You must give up all of the butterflies you've collected. The other player again puts the cards back on the board while you close your eyes.

A ladybug is just a cheerful little bug! Turn the ladybug cards back over; you don't need to collect them.

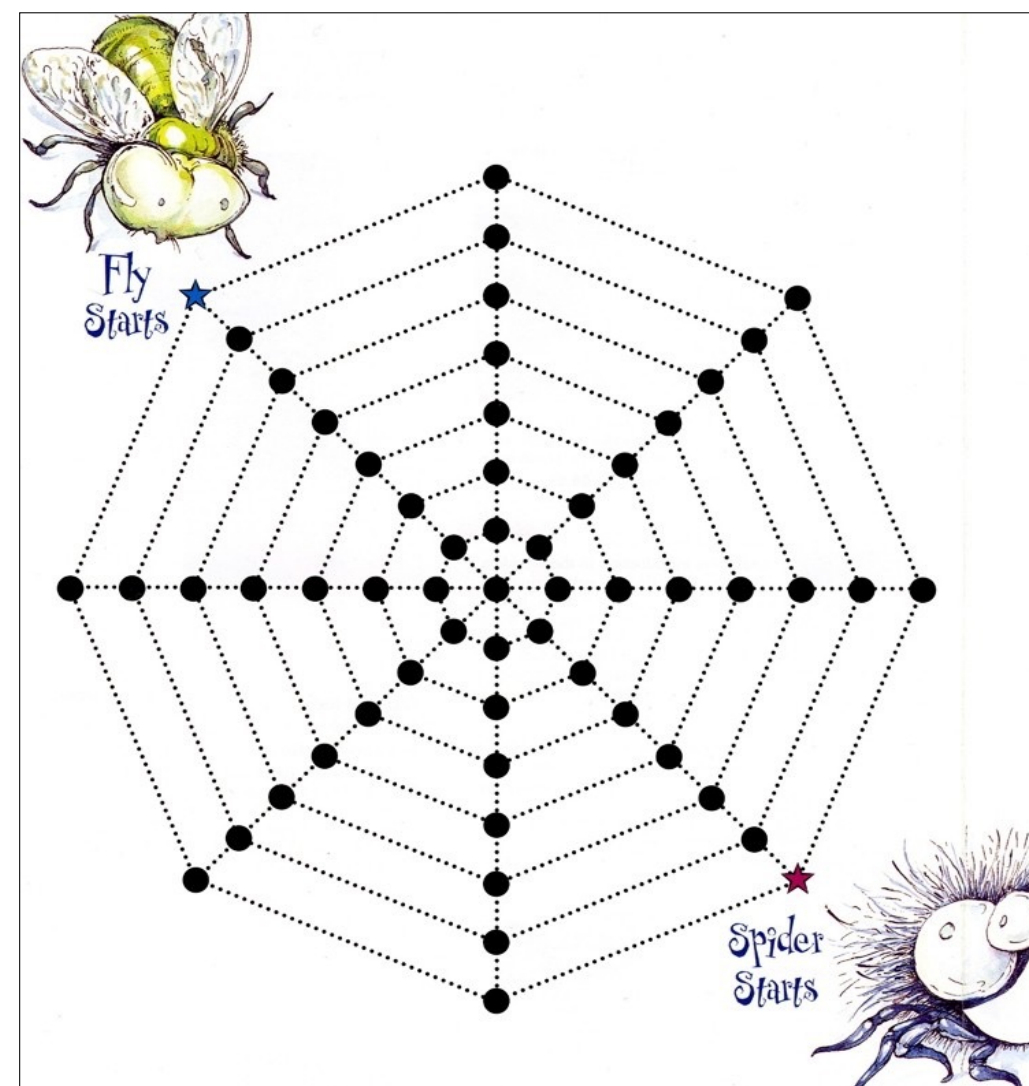
The Spider and the Fly

General info

Uh-oh! The spider is hungry, yet the fly definitely doesn't want to be its lunch! A game dedicated to strategizing and raising awareness.

Rules

One player is the spider, the other the fly. The spider tries to catch the fly by landing on the same space on the game board as it. The fly, meanwhile, tries to escape by reaching the spider's starting point. Each player is given a different crayon. The tallest player goes first. Taking turns, the players draw one line by connecting two big dots on the spider web. They cannot cross a line they drew earlier, but they can cross a line drawn by the other player. The game ends when the spider catches the fly or the fly reaches the spider's starting point. Wipe off the crayon lines with tissue and play again!



Didactic aspect

Individual skills, making education more attractive

Number of players

2 players

Age group

7+ years old

'Your Turn, My Turn' collection

General info

The following games are a series developed by MetaMeta in cooperation with Spark India. It consists of various poster-sized games to be played between two players that excel in a variety of didactic topics such as tactical mindset, memorization and awareness.

Rules

The rules for the respective games are displayed on each of the posters. For most games you need only a dice, two game pieces and/or a pen.

Didactic aspect

Individual skills, making education more attractive.

Number of players

2 players

Age group

7+ years old

Do guti



Do Gutti

Do Gutti means 'two pieces' in Punjabi. This is one of those classic village games that has travelled from one place to another. You can find versions of Do Gutti thousands of miles apart.

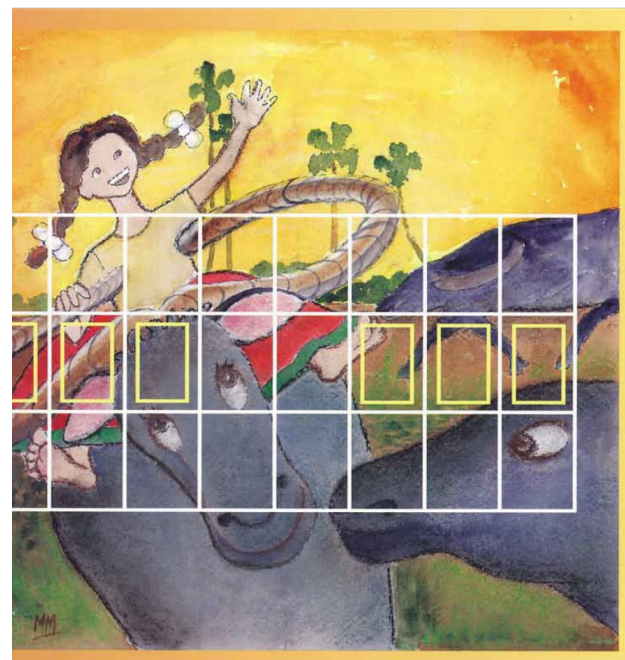
Two players play this game. Each player has two counters (coins, stones, buttons...).

To begin, players put down their two counters at any of the cross-points in the figure. Each bit on a different cross-point, that is.

Then take turns moving your one of your guttis from one point to the other along the lines in the figure.

The game is over when one player blocks the other so that he or she cannot make any more moves.

Go, buffalo!



Go, Buffalo!

You need two players to herd buffaloes. This is a tricky game, which can keep you busy for a long time if you play it well.

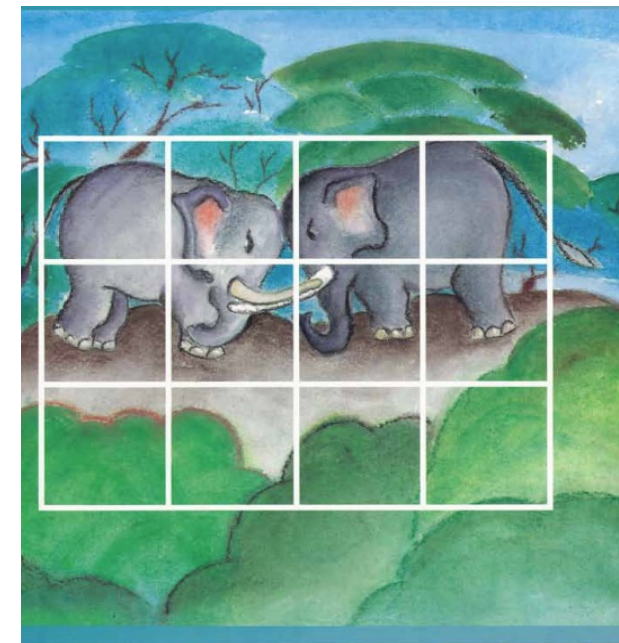
Players have three buffaloes each, and start by keeping the buffaloes in their pens (highlighted). You can use coloured counters for buffaloes. The aim is to get your buffaloes into the other player's pen.

Take turns to move one step at a time – you can move forwards, sideways, or even backwards, but you cannot move diagonally. Nor can a buffalo jump over another buffalo. Pretty obvious, eh? And remember, you have to make a move on every turn.

Once a buffalo reaches the other player's pen, it can only move further down. It cannot move backwards or out of the pen.

You win if you herd all three of your buffaloes into the opposite pen. You can also win by blocking the other player in such a way that he or she can no longer make a move.

Jumbo kushti



Jumbo Kushti

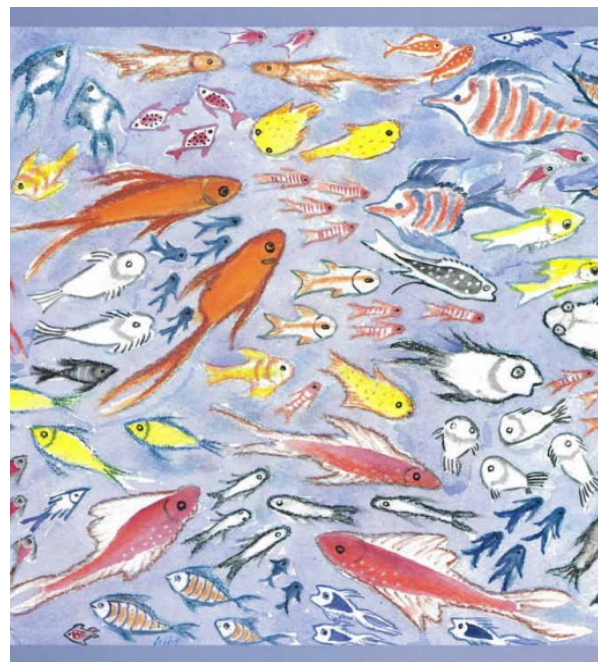
Two players manage three elephants each in this game.

Both players put down three counters of the same colour, one in each box, at opposite ends of the grid. These are the elephants.

The players take turns. During a turn, a player has to move one elephant forwards, backwards (but not out of the board) or sideways (but not diagonally).

The aim is to try and block the other player's elephant/elephants. Make a really loud trumpeting noise when you do manage a block because then you have won the Jumbo Kushti!

Fishing



Fishing

Two, three or four players can go fishing. You need a single die, and sketch pens of different colours to catch fish.

Here's what you do. Decide who gets to go fishing first. Then throw the die so that the player can see how many fish they can catch. If the die says one, the player can draw a line across one fishy, two will mean that he or she can loop in two fishes and so on. The catch is – you cannot cross a line that's already drawn.

Continue reeling in fish until you cannot get any more. The fisherman who makes the last catch wins the game.

Wipe the board clean and you're all set to go fishing again.

Tigers and goats



Tigers and Goats

This is a game for two players, one playing the tigers and the other the goats.

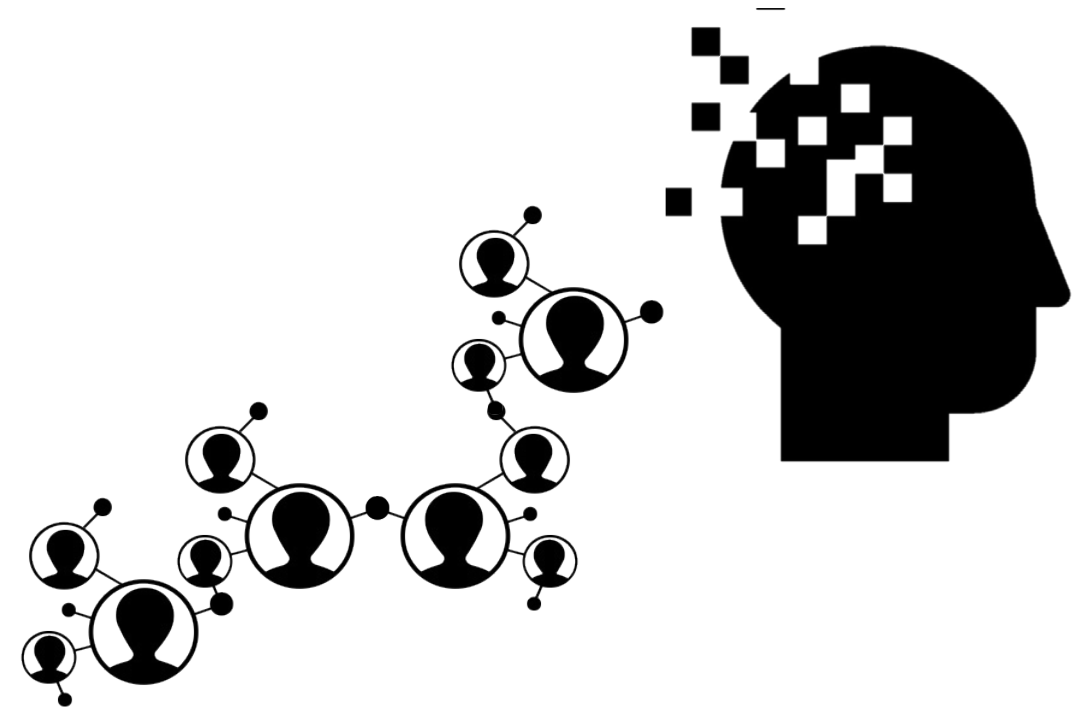
There are two tigers and nineteen goats. You can use buttons, stones, seeds or coins as counters.

To set up the board for play, place one goat at each point of the grid's borders – that will be a total of sixteen goats. The remaining three goats are placed diagonally on the inner points of the grid.

The tigers are put on two inner points.

The first move is made by a tiger. Tigers can move along the lines one step at a time or jump across a goat to an empty grid point. If a tiger jumps across a goat, it can capture the goat, which is then taken off the board. The goats move one point at a time.

You take turns at playing. The player with the tigers aims to make off with as many goats as possible. The player with the goats tries to lock in both tigers. If only one tiger is locked in, the game ends in a draw.



Memory & Communication Games

My spy and I



General info

Do players want to become spies? Then, first they should learn all that it takes. The wit, working with codes, the skill of keeping secrets, and the capacity to memorize. My Spy and I comes with a box full of spy games. Some games are played in teams. Players can also play a competition – doing all the five games. All games are easy to come to grips with but DIFFICULT to win. It is meant to practice decision-making and memory skills. The games all start from the Secret Word Cards with words, images, and symbols. Players should take a good look at them. Some cards by the way are six special Spy Cards – with the special attributes of a spy (the suitcase, the binoculars, the camera, the gloves, the map, and the watch). Players will have fun while trying not to be caught out! The game educates on individual skills such as memorization as well as social skills.



Rules

SECRET MESSAGES

In this game, players train to give secret messages. The game is played by four people – in two teams of two people each. Players sit around the table and their teammates sits opposite to them. Players should pass secret message to each other. Players need the Secret Word Cards, little pieces of paper and a pen. Players should mix the deck of cards, take twelve cards from the stock, and put these head down on the table. Now they start to play: The oldest player starts. He/she takes one Secret Word Card from the heap and thinks of a one-word message related to the word on the

card. He/she writes down this message on a piece of paper, closes the piece of paper and passes it on to the opponent player sitting to the left or right of him/her. That player reads the message and may guess one time what the word on the Secret Word Card is. If the guess is wrong, the player passes the piece of paper to the teammate of the first player. The teammate may make a guess too or keep the message to him/herself. The first player writes another clue or message related to his/her Secret Word Card, but this time passes it on to the opponent player on the other side. Again, that opponent player makes one guess after reading the message and he/she does get it right passes on the message to the teammate of the first player. They continue doing this until the word is guessed right. The team that guesses the word can keep the Secret Word Card. One player can pass on a maximum of five messages per Secret Word Card. There are some small additional rules:

- Players can only write one word on the piece paper.
- Players cannot write a word on the piece of paper that is part of the word on the Secret Word Card. For instance, if the word is 'Earring', they cannot write 'Ear' as their message.

As mentioned, the team that guesses the word keeps the card. After each turn, they move clockwise, and the next player takes a Secret Word Card and passes down his/her clues. When they are finished with the twelve cards, they count the score of each team. The team with most cards wins – but the special 'spy cards' count double.

When the game ends equal, players should play a last card. The team with the right guess is the winner.

MIND PALACE

This is a memory challenge. Spies don't take notes – they just remember things. The game can be played by two, three or four players.

How to play? Players shuffle the Secret Word Cards carefully. Each player puts in a challenge, for example, how many Secret Word Cards they can memorize. Players write the number they think they can memorize on a piece of paper and

next compare the 'bids' of all players. The player with the lowest 'bid' starts. He/she takes the number of Secret Word Cards corresponding to his/her bid from the stack but doesn't look at the words on the cards yet.

The watch (or hourglass) is set and the first player has 30 seconds to memorize the images or words from the cards. After this, the player gives the cards to another player and mention those cards he remembers having seen one by one. Keep a count of the words memorized and forgotten. All players do this in turn, drawing a number of Secret Word Cards equal to their bid.

In the end, players look at the score for the round:

- The player that did not forget any Secret Word Card and had the highest card bid wins the round and get to keep that bid as his/her score.
- If no one was flawless, the player that memorized most cards wins and keeps that as the score for this round.

Play several rounds...

A hint: While memorizing, players can use the so-called 'pegging' techniques: try to remember the images as if they are in an imaginary room or placed along an imaginary journey.

FIND THE THING

This is a simple game but fun. It trains players to find things – again an essential skill. Players can play with two, three, four, five, even more players. Players can also make teams. Each player or team draws at random six Secret Word Cards and study them well. Players now have eight minutes to 'find' the image/words on the cards in the house. Either physically or written down somewhere (in a book or a newspaper). The player or team that finds most words is the winner. Spy cards count double.

MAKE UP A STORY

Spies should be able to make up a story and not be outwitted – and then of course(!) remember the story they made up!

This game can be played by two, three, four or five players. Three or four is best number. Players start each by drawing 12 Secret Word Cards. The youngest player starts. Now they take turns. During each turn, the players put one of their cards on the table and tell one line – say one of them has the card with the 'unicorn': "There as a lonely little unicorn that had never seen any other unicorn". The next player plays one of this Secret Word Cards – say the 'truck' card. So, the story goes on: "One night the unicorn slipped out of his magic forest, waited along the highway and hopped in the back of an empty truck." And the story moves on. The players go on with the story unless someone plays a Secret Word Card with the 'reverse' sign or the 'stop' sign. With the stop sign the last player, before the player playing this card, should memorize all the cards, one by one, that were used in the story. If the player can't, he/she should take all the Secret Word Cards starting from the card he/she could not remember. With the reverse sign, the players should reverse the story starting with the player who put the card with the reverse sign. Again, the first one to forget a card should take all the Secret Word Cards remaining. A special rule: if a player plays a Special Spy Card, he/she can play two cards during his/her turn. The game finishes when a player plays his/her last card, he/she is the winner.



Didactic aspect

Cooperative skills, individual skills.



Number of players 2+ players



Age group

12+ years old

Code cards



General info

Players use the symbols on the Secret Word Card, not words or images. The game trains them to make series of matching symbols. It helps with the expansion of memory-based skills.



Rules

Players can play it with two, three or four people or with two teams of two players.

How to start? The players take sixty-four Secret Word Cards out of the stack and put them on the table with the image face up in four lines of four cards.

Once they have put sixteen cards on the table, they put the next sixteen on top of the first cards and so on till they have sixteen piles with four cards.

What is the aim? Players have to make lines or rows of cards that either all have the same symbol, or all have a different symbol (there are four different symbols). If they manage to do so, they can remove these four cards from the game and keep them. During their turn, they can pick up one card and move it to another place in the square. They can put it there face up or face down. If face up – they should try to make a combination. If face down – they should remember the symbol on the card and wait for a chance. Instead of picking up and moving a card during their turn, they can also turn around a card that is face down. The game is over when there are no more series to make. The winner is the one with most cards. If players have a spy card in their series, they get double points for those series.



Didactic aspect Cooperative skills.



Number of players 2-4 players



Age group 12+ years old

TMT+

talking game



General info

The TMT+ Talking Game is being created for the TMT+ Yemen project, yet is easily adapted to other settings. Designed to be played bi-weekly or monthly, the Talking Game strengthens the bonds between colleagues from different areas of the company and allows them to learn from each other by discussing the challenges they face in their respective fields of expertise in the company. This way, the employees learn more about other parts of the company and help generate more appreciation for the work done by others. Part of the game is a set of cards designed for use with non-permanent markers. A trained facilitator may or may not be required, but is recommended to be included for expediency.



Rules

1. Each player writes down on one of the cards his/her largest headache or relief regarding their work.
2. The cards are then collected, shuffled and turned over one by one.
3. As each card is turned over and read out loud, each player needs to write down who they believe wrote the card and how they themselves can help contribute to that person's issue.
4. Points are given to those who got the source right, whereas the original source of the card can also give a bonus point to the best contribution/suggestion.



Didactic aspect Cooperative skills.



Number of players 3+ players



Age group 16+ years old

TMT+ puzzle game



General info

Another game designed for the TMT+ Yemen project yet equally as adaptable, the TMT+ Puzzle game is based on Archimedes' Square, fourteen geometric pieces forming a single shape. The game is aimed at further reinforcing the cooperation between the players, working together to create a combined vision for their workplace.



Rules

1. Each player receives an even number of puzzle pieces.
2. The facilitator or player of choice decides upon what topic the game will be played – this may either be chosen from the suggested questions provided with the game or by deciding on one on their own initiative. The topic of the question should be short and simple, affecting the company as a whole, with examples being:
 - a. Inclusiveness
 - b. Effectiveness
 - c. Accountability
3. Each team member now writes their most important aspect(s) of the question's solution they have in mind on the puzzle pieces.
4. Once this is done, the team plays a game against time (as a collective adversary) by attempting to finish the puzzle. The cards/wooden pieces have different sizes but together, if properly combined, forming a square. (It is recommended the players are given ten minutes to finish the puzzle, starting from the moment they finish writing their thoughts on their pieces.)

5. Stop the time once the puzzle is completed.
6. Afterwards, turn over the puzzle onto the side where the players have written their statements to reveal their combined vision for the company! Discuss the outcome of the game, looking at (for example) which ideas were mentioned multiple times, what ideas could be most swiftly or easily accomplished by the team and what other possibilities are there to achieve their shared vision for the company?



Didactic aspect

Cooperative skills.



Number of players

2-7 players



Age group

16+ years old



The table below summarizes the didactic aspect of the games included in the catalogue.

Games	Individual skills	Cooperative skills	Making education more attractive	Awareness raising	Support for vulnerable people
The Farmer's Journey	xxx	x	x	x	x
Land Use Game	x	xxx			x
WASH Quartet	xxx		x		x
WASH Code Cards	xxx		x		x
Fly Over		xxx	xxx		x
WASH Mazes	x	x	xxx		x
Arctic Sea			x	xxx	
Animal Dice			x	xxx	
Knossos			x		
Expedition through the Himalayas			x		
Deer and Lion			x		
The Savage Toucan River			x		
Catching Butterflies			x		
The Spider and the Fly			x		
Do Guti	x				
Go Buffalo!	x				
Jumbo Kushti	x				
Fishing	x				
Tigers and Goats	x				
Charm the Snake	x				
My Spy and I	xxx	x			
Code Cards		xxx			



