

Better together

Intro

As the time passes, we acquire knowledge without paying attention to how much of it has remained in our minds. Sometimes fun and small challenges can help us remember that and stimulate us to continue exploring our passion, connecting with others and to become better scientists.

Aim

- To test the knowledge that a marine biology student has acquired;
- To stimulate curiosity in a fun way;
- To leave the players with take-home messages.

Duration

- 60 minutes or more

Target audience

- (Marine Biology) Students, freedivers, experienced volunteers

Rules

- The minimum number of players is 3.
- Each player must choose a small object (small stone, coin, pendant, etc.) which will be their game statuette. The players must place them on the start point.
- By throwing a dice, the player that threw the highest number begins the game, which continues in a clockwise direction.
- Three stages must be passed before arriving at the last - Speciality stage. Each stage is marked with a specific colour.
- The player must decide the level of difficulty (1, 2 or 3) to take. The next player must flip the level 1, 2 or 3 card without showing it to the former. Depending on the stage at which the former player is, the latter has to read the question or task (in bold) aloud. The former player must reply to the question or perform the task correctly, in order to move forward. In case of failure, the player must remain on the spot and pass the turn to the next player. If correct, the player can move for as many points as the difficulty card was high.
 - Example: I choose the level 2 card, to which I reply correctly. I can move my statuette for two points forward.
- Minor rules are explained on the cards and must be respected.
- The first player to come to the end becomes the winner and a skilled marine biologist.

You will need

- Stopwatch;
- Random statuettes;
- Dice or Online dice roller (see example: <https://www.random.org/dice/>);
- Mask and snorkel;
- Tea;
- Printed Game Board and Cards.

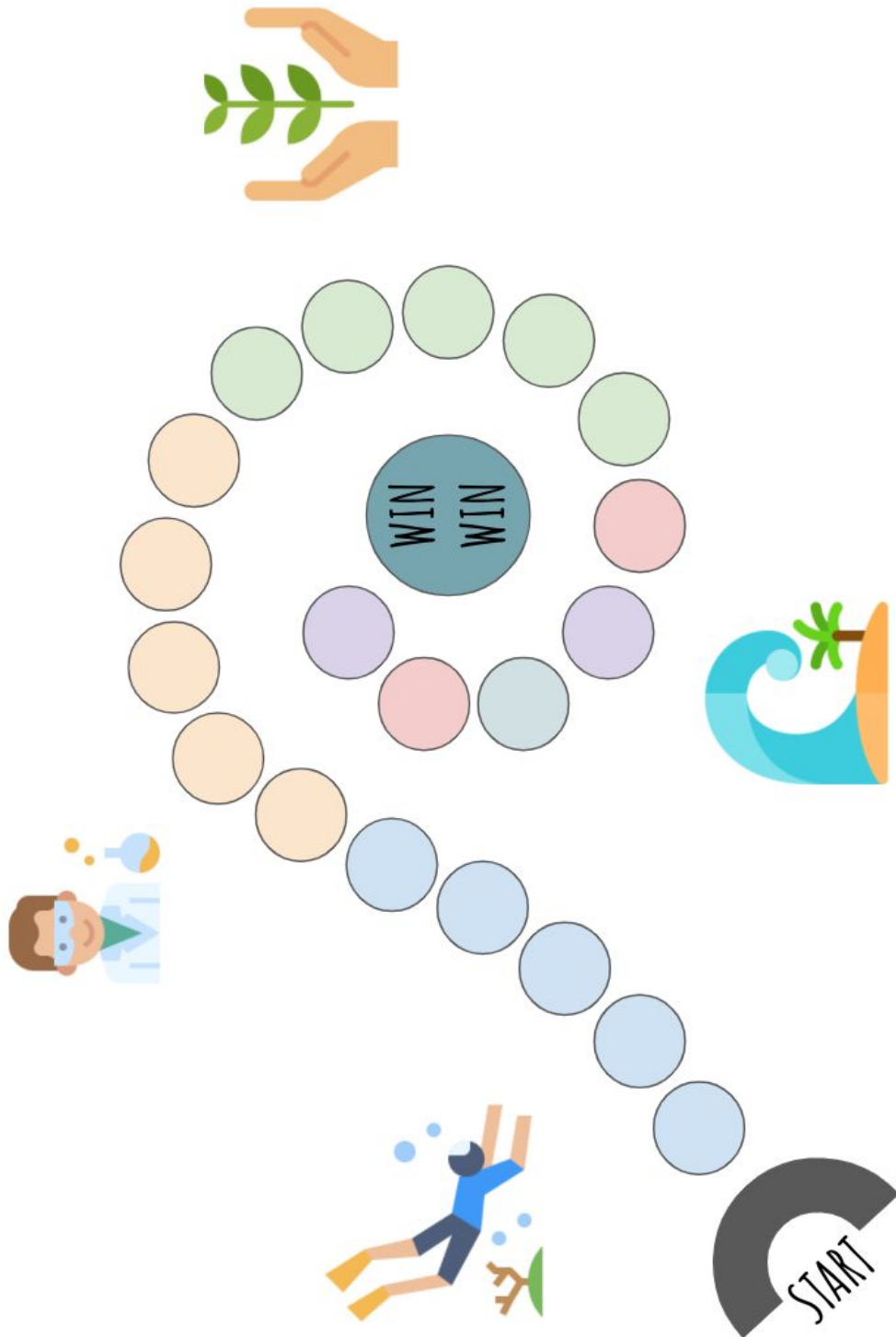
Resources used

- Google Spreadsheets
- Google Docs
- Google Slides
- <https://www.flaticon.com/home>

Recap

- What was the most difficult question or task you encountered during the game?
- If you had to breathe deeply or meditate, did you feel good? Would you like to deepen the practice in the future?
- Do you remember why endemic species are so important?
- Could marine organisms be exploited for a sustainable future?
- Do you think that it is important to interact with people outside of the field of marine biology in order to raise awareness and change our daily habits that affect the planet negatively?

Game Board



Level 1 cards

Take three deep breaths. When you have completed the relaxation phase, take a really deep breath and hold it for 30 seconds.
What is eutrophication? - It is the nourishment of the marine ecosystems.
As a marine biology volunteer on a remote island, among the marine activities you also have to cook dinner for the whole team. Now, you have to make tea for all the players.

What is the pressure at the surface? - 1 atm.
Which is the biggest marine mammal on the Earth? - Blue whale.
You are a volunteer in an MPA. Explain to other players which are the anthropogenic threats for the marine ecosystems. - Oil spills, plastics, contaminants, trawling & fishing activities, etc..

Choose a buddy among the players. They can help you with the next challenge that you will face.
Name the ctenophore invasive species of the Black Sea. - <i>Mnemiopsis leidyi</i>.
How would you as an animator show the importance of marine ecosystems for humanity to a group of children (10 years old). Pretend that the players are children and make a speech.

Lay down on your tummy and demonstrate how to freestyle swim.

Where is the Great Barrier Reef? - It extends from the N-E to S-E of Australia.

Name at least two organisations with which you would like to do volunteering experiences.

Learn how to be patient. Stay on the spot throughout the next round. Meanwhile, breathe deeply and consciously.

What is the estimated percentage of deep sea ecosystems? - Approximately 90%.

You are participating in a project on reforestation of mangrove trees on a remote island. Are you going to seed the mangrove plantlets randomly or according to previously planned schemes? - Previously planned schemes and in dependence of the mangrove species, in the upper, middle or lower part of the beach.

Level 2 cards

Take three deep breaths. When you have completed the relaxation phase, take a really deep breath and hold it for 45 seconds.
What does the Descriptor 11 of the Marine Strategy Framework Directive (MSFD) say? - Underwater noise and other forms of energy.
You are a volunteer at a marine conservation center. Choose at least 2 players and explain to them why plastic bottles should be replaced by reusable bottles.

What is the volume of air in our bodies at -10 m? - 1/2 of that on the surface.
Name one microalgal species that causes harmful algal blooms (HABs). - <i>Alexandrium minutum</i> , <i>A. catenella</i> , <i>Gyrodinium corsicum</i> , <i>Pfiesteria piscicida</i> , <i>Ostreopsis ovata</i> , etc..
What is the aim of a marine protected area (MPA)? - Biodiversity protection and conservation.

While the other players continue with the game, go into another room and meditate for 5 minutes. Remember to visualize that you are in a protected bubble in the middle of the ocean.
Through which aperture do most alien species enter the Mediterranean sea? - The Suez Channel.
What would you say as an MPA volunteer to a visitor that does not behave according to the rules of a MPA? - I would kindly ask them to stop behaving badly and explain why it is necessary to respect the rules.

Lay down on your back. Show how to kick your legs effortlessly and efficiently pretending that you are wearing fins.

Where do mangrove trees grow? - Between latitudes 25°N and 25°S.

What event would you organise as a marine conservation volunteer to raise public awareness? - Beach clean-up, reef clean-up (if the divers are experienced), VR workshops, etc..

Wear a mask and a snorkel until you get to the next stage of the game ("Marine Biology student" stage).

At what depth range does the twilight zone occur? - Between -200 m and -1000 m.

You have not respected the schedule of your volunteering program. You have to wait on the spot throughout the next round.

Level 3 cards

Take three deep breaths. When you have completed the relaxation phase, take a really deep breath and hold it for 60 seconds.
What are CECs? - Contaminant of Emerging Concern, or rather, chemical compounds that have been detected in water bodies and might cause health risks.
You are a volunteer at a marine conservation center. Choose at least 2 players and tell them how many years a plastic grocery bag persists in the marine environment. - 10-20 years.

At what depth is the volume of air in our bodies that of 1/3? - At -20 m.
What organisms are covered with silica (Si)? - Diatoms.
Ask help from other players to make a quick brainstorming session on how you could convince people to ditch plastics and go zero waste.

What is the number one rule in free-diving? - Do not cross your limit, safety is first.
Name one species found in the proximity of a hydrothermal vent. - <i>Riftia pachyptila</i> , <i>Alvinella pompejana</i> , etc..
What would you say as an MPA volunteer to a visitor that has taken a shell from an area within the MPA? - I would kindly ask them to return it where it belongs.

Lay down on your back. Place the right hand on your belly area and the left hand on your chest area. Take a deep breath starting from the belly and continue with the breath by expanding the chest area. Imagine that your breath is like a wave and your hands are part of the wave. Repeat for 10 breathing cycles. Other players must correct you and must not go on with the game.

What is the Carbon Concentrating Mechanism (CCM)? - It is a biological adaptation to low CO₂ concentration, it is a mechanism that helps to concentrate inorganic carbon from the environment into the cell and therefore maximise the photosynthetic efficiency.

If you had to demonstrate how to freestyle swim during this game, you can immediately pass to the next and final stage because you have proven to be a good swimmer.

Wear a mask and try holding your breath until it is your turn again.

At what depth range does the twilight zone occur? - Between -200 m and -1000 m.

You are an experienced volunteer and your job is to pass the knowledge to the player after you when they come on the green field. You can help them only one time.

Speciality cards

Take three deep breaths. When you have completed the relaxation phase, take a really deep breath and hold it for 90 seconds.
What is GES? - Good Environmental Status. The environmental status of marine waters where these provide ecologically diverse and dynamic oceans and seas which are clean, healthy and productive.
As an experienced marine biologist, you have to find a replacement for microplastic beads used in personal care products (exfoliants, etc.). - Used coffee grounds, sugar, salt grains, sand, etc..

Name an Italian freediver who in 1962 became the first person to break the -50 m mark. - Enzo Majorca
How long does it take for a fishing line to be degraded in the marine environment? - 600 years.
You have disappointed your supervisor. You have to wait one round.

What are Japanese women who are freedives without modern diving gear to collect pearls called? - Ama.
Name the bivalve species that was introduced in the Venice lagoons for experimental aquaculture in 1983. - <i>Ruditapes philippinarum</i> .
Challenge a player of your choice to go zero waste for one week, through which they must store all the trash that could not be reused into a jar.

Choose a buddy among the players. Help them pass to the next stage, even if it will take more rounds. Meanwhile, you have to wait on the same spot until you have managed to help your buddy.

Why are endemic species so important to protect? - They are found only in a particular area of the Earth and if they go extinct, it means that another species has gone extinct on the global level.

Switch place with a player of your choice for one round. Help them pass to the next stage. If you fail, you have to remain switched until you have managed to complete the task.

Do you know who is the "Ice man?" Can you name the three methods he uses to stay healthy? - Wim Hof. His method is based on Cold therapy, Breathing and Commitment.

How can green, brown and red algae be used for a sustainable future? - Green algae can be used for biofuel production, brown algae for mannose extraction and red algae for agar extraction.

You have worked hard to get where you are. Well done! You have officially won the game. Other players can continue or you can start a new game altogether.