

***LEARNING THROUGH PLAY:
MECHANICS THAT TELL STORIES***

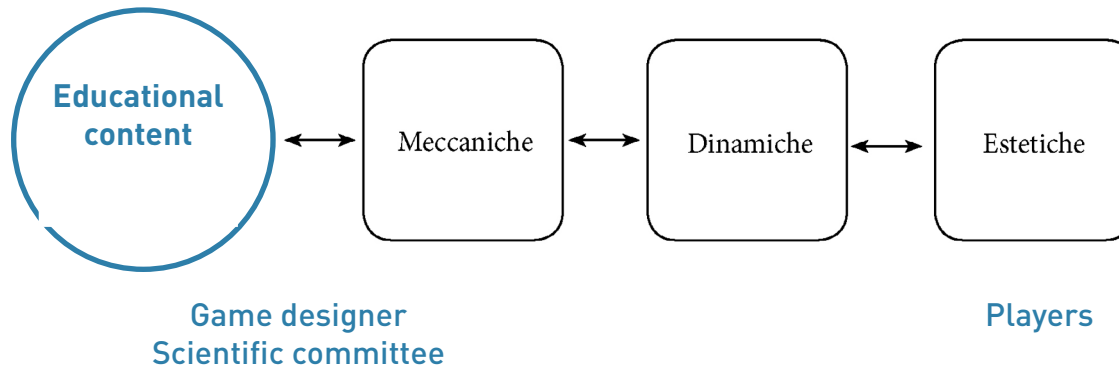
DESIGNING A BOARD GAME FOR SCIENCE COMMUNICATION



Outreach board game:

designed to be played mostly independently, in recreational and informal contexts, without debriefing or a structured teaching framework.

FRAMEWORK MDA:



BOARD GAMES WITH ENVIRONMENTAL THEMES



Board Game Geek

The world's leading online database for board games.

Common mechanics in board games with environmental themes

Tile placement



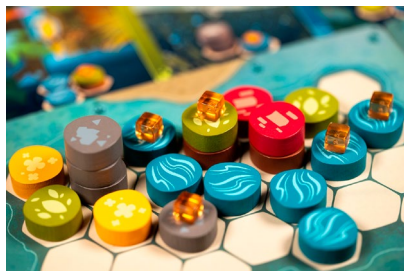
Cascadia

Set collection



Meadow

Pattern building



Harmonies

End game bonuses



Forest
shuffle

PLASTIC FIGHTERS



Objectives:

- Main types of plastic waste found in the sea and their origin;
- Their possible impacts;
- Good practices to address the problem;
- (Secondary) Collaboration;
- (Secondary) Development of personal skills.

Use:

- Independent settings: summer camps, youth centres, families;
- Structured educational projects on the marine environments of the Gulf of Trieste.

THE PROBLEM OF PLASTIC IN THE SEA AFFECTS US ALL

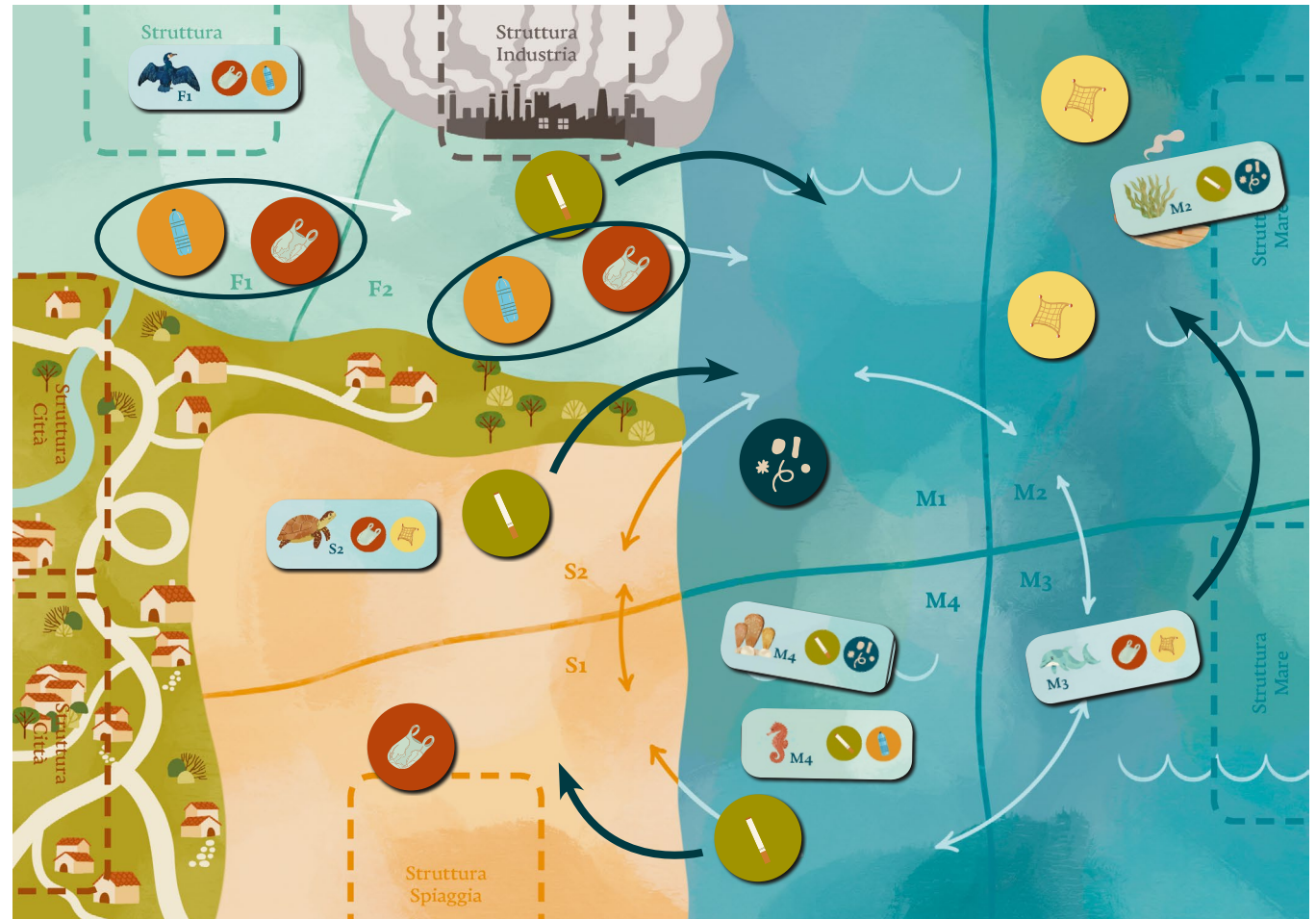
Plastic Fighters is a **cooperative** game. Each player chooses an environmental organization, and each one has a different specialization.

Organizations must **work together**: you either win together or lose together. That's why talking, planning, and **coordinating your moves** is essential.



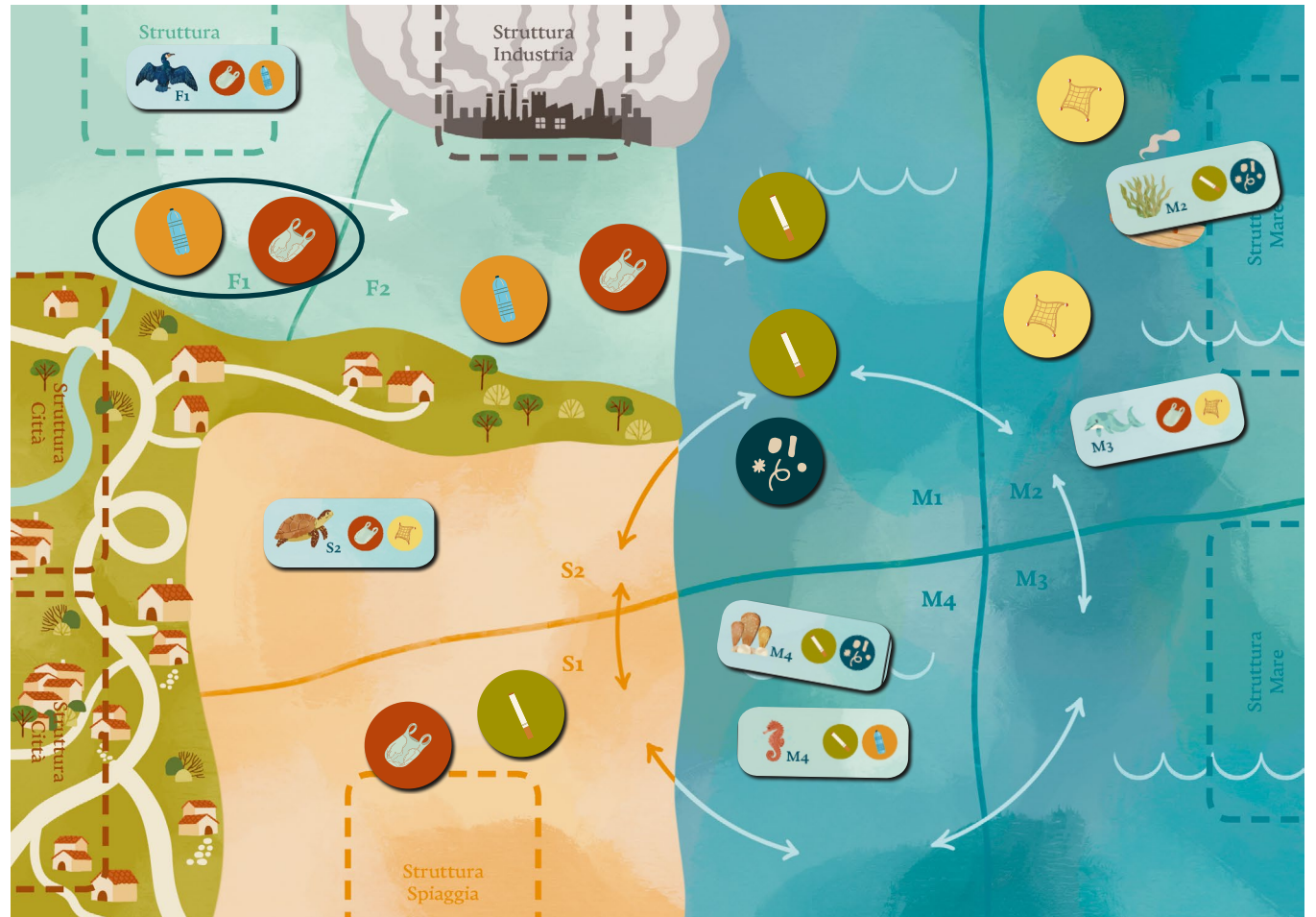
PLASTIC COMES FROM MANY DIFFERENT SOURCES

Each turn, an event introduces waste onto the board: from rivers, cities, roads, beaches, or directly into the sea. Currents and winds help it spread.



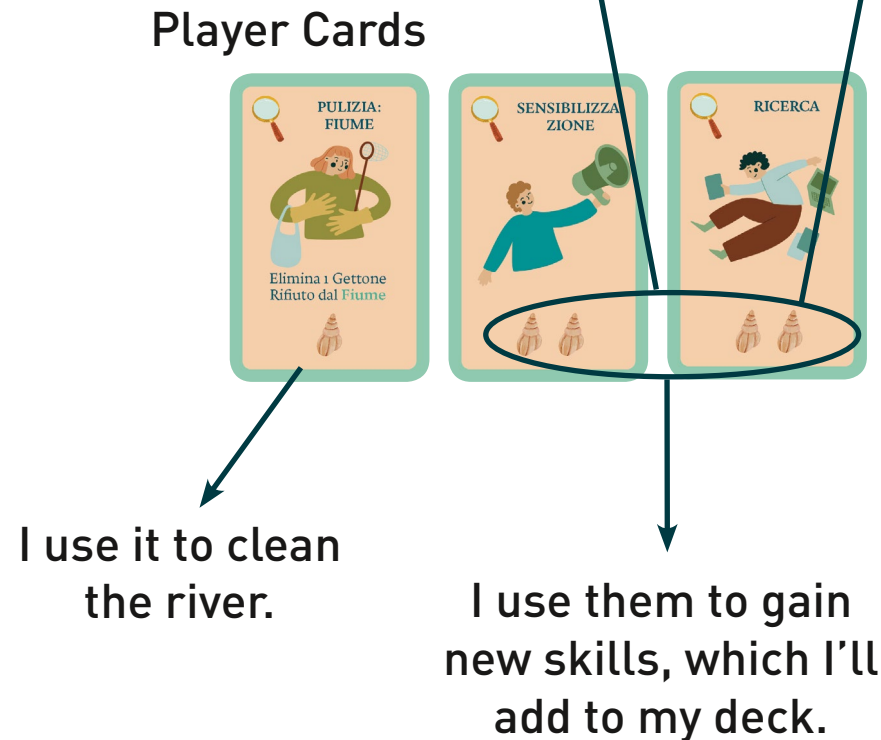
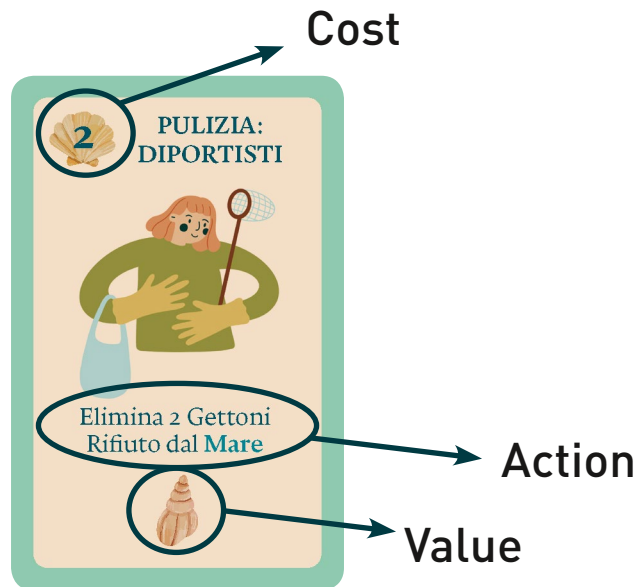
WHY CLEAN UP THE ENVIRONMENT?

Plastic waste is a danger to the environment and to the organisms that live in it.



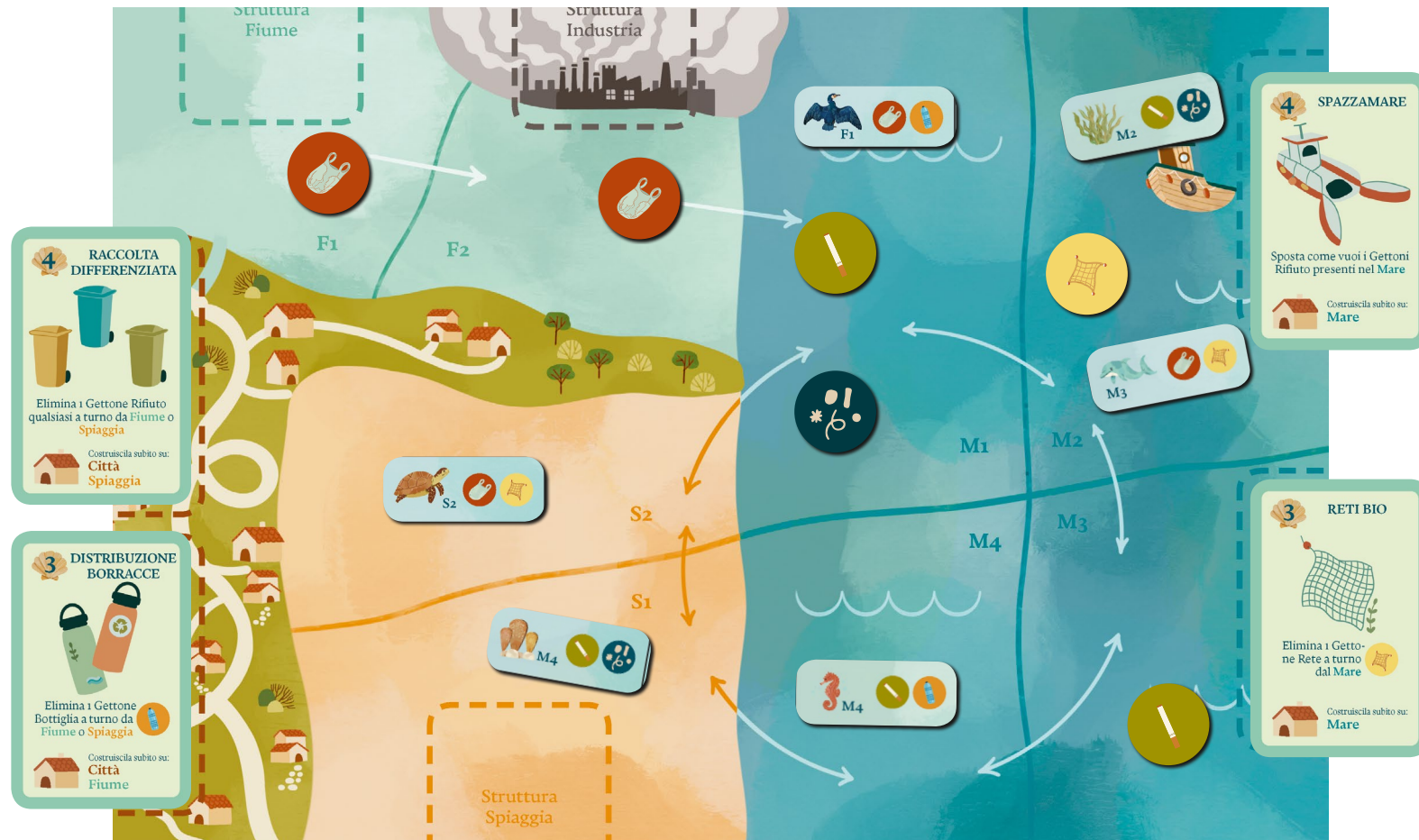
“NOBODY STARTS AS AN EXPERT!”

At the start of the game, each organization can do only a few things (six cards each). As turns go by, they can gain new skills (new cards) by choosing to invest time in training, adding new cards to their deck.



“HOW DO YOU WIN?”

Your goal is to **reduce plastic in the environment** as much as possible and to limit its sources. At the end of the game, count the **organisms** you protected and the **structures** you built: if they outnumber the **waste** still on the board, the balance is positive and you win!



MIRAMIX



Objectives:

- Five different habitats;
- Typical species found in each habitat;
- Main environmental threats and their effects;
- (Secondary) Territory and ecological needs of organisms.

Use:

- Independent settings: summer camps, youth centres, families;
- Structured educational projects on the marine environments of the Gulf of Trieste.

GAME MECHANICS USED

Tile placement + Pattern building

Habitat continuity

Habitat expansion and
different ecological needs
of species

Closed drafting + Take that

Encourage player
interaction

Set collection + End game bonuses

Representative species and
diverse habitats

The importance of biodiversity

Events

Environmental threats and their effects

Push your luck

Keeps tension high until the end of the game



GAME COMPONENTS



Graphic characterization of habitats

The tidal habitat is the only one that is not completely submerged.

No text on game components

Language-independent game.

Flavour text is often ignored or perceived as intrusive.

Eco-friendly game certification

No plastic, FSC-certified paper, plant-based inks. Fully compostable.

REFERENCES GAME DESIGN



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THANK YOU!

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