

BRAIN WAVES



THE WISE WHALE

THE BRAIN-TRAINING
MEMORY GAME FOR
THE WHOLE FAMILY



MAUREEN HIRON

KOSMOS

Fun memory games for the whole family

Exercise your brain while playing games!

Brainwaves games can help you to train your brain – in just 15 minutes. The game series was developed by experienced game designers and scientifically tested by neuroscientists. Their conclusion was that these games work the parts of the brain that handle fluid intelligence, working memory, and episodic memory.

For 1-4 players, ages 8 and up

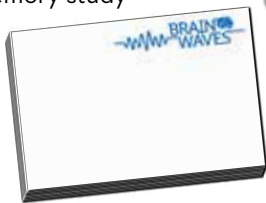
Game Components

- 49 Sea creature cards (featuring 7 unique animal designs in 7 colors)
- 1 Notepad
- 1 Feature die for the game variants
- 1 Rulebook with information regarding the memory study



Animal card

Card back



Notepad to record the points scored



Feature die

All of the sea creatures and colors represented below appear in the game – every sea creature shown appears in each color exactly one time:



Coral
Yellow



Dolphin
Orange



Pufferfish
Red



Turtle
Purple



Seahorse
Blue



Starfish
Turquoise



Whale
Green

Game Overview

Players must memorize the sea creatures and colors that are laid out on the table before the cards are flipped over making only their back sides visible. Each turn, one card from the face-down draw deck is revealed. During a turn, the active player then tries to find a card with either the matching sea creature or the matching color. If the player is successful, he or she takes the card from the table and it is replaced with a new card. In this way, the card display changes throughout the game. And this is exactly what is intended to stimulate those brain cells in the frontal and parietal lobe that are important for mental abilities (see the information at the end of the rulebook).

Game Preparation

- The **feature die** is not needed in the base game. It is only used in the variant game (refer to page 7 of the rulebook for instructions).
- Depending on the desired level of difficulty, different assortments of **cards** are used in the game.
- The **notepad** is only needed at the end of the game to record the points scored.

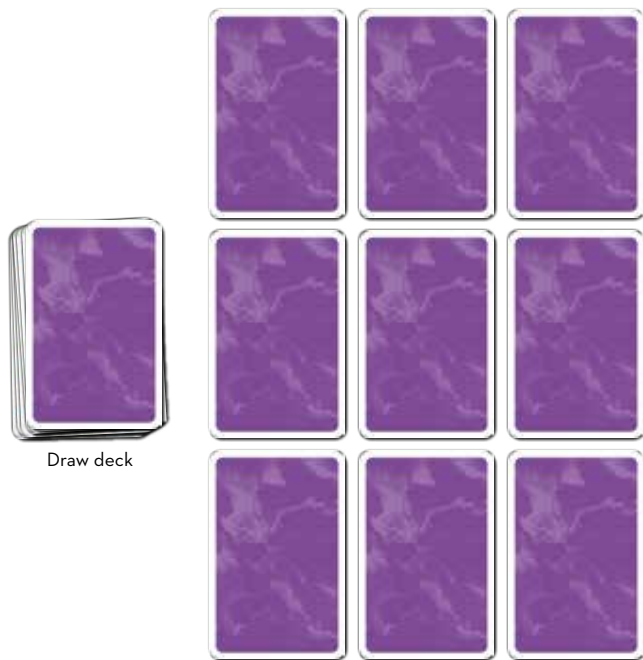
Difficulty Level 1 <i>Rookie</i>	Difficulty Level 2 <i>Experienced</i>	Difficulty Level 3 <i>Advanced</i>
The game is played with 5 designs in 5 colors (for a total of 25 cards). 2 designs are removed completely, e.g. all of the corals and all of the starfish. In addition, all remaining designs in 2 selected colors are removed, e.g. all green and red cards.	The game is played with 6 designs in 6 colors (for a total of 36 cards). 1 design is removed completely, e.g. all of the corals. In addition, all remaining designs in 1 selected color are removed, e.g. all green cards.	The game is played with all 7 designs in all 7 colors (using all 49 cards).

These cards are then shuffled and placed face down on the table as a concealed draw deck. Nine cards are drawn from this deck and laid face up – in a grid consisting of three rows and three columns.

Gameplay

The players study and memorize the sea creatures and colors in the 3x3 grid of cards as well as possible.

After about two minutes, or when all the players are ready, the cards are **flipped over**, so that only the card backs are visible.



Draw deck

There are 3x3 cards in the gameplay grid.

The youngest player starts. Then, the game continues clockwise.

When it is your turn, you can **try up to three times** to find a matching pair of cards. Two cards match when they either show the same sea creature or the same color.

- 1) First, uncover the **top card of the draw deck**.
- 2) Then, reveal a **card of your choice in the 3x3 grid**.

✓ **Does the card from the 3x3 grid match the card from the draw deck?** When both cards have either the same sea creature or the same color, then they match.

Take the **card from the grid and put it face down in front of you**. Each card counts as one point at the end of the game.



Card from draw deck



Card from grid

Matching sea creature



Card from draw deck



Card from grid

Matching background color



✗ **Does the card from the 3x3 grid not match the card from the draw deck?** If both cards do not have the same sea creature nor the same color, then you remove the card from the grid and place it at the bottom of the draw deck.



Card from draw deck



Card from grid

No match



- 3) This **card from the draw deck is now placed face down in the free space of the 3x3 grid** – regardless of whether it had resulted in a match or not. Remember to memorize this new card in the grid!

- 4) When you find a **matching card**, then you get to **try again**:
Flip over another card from the draw deck and try to identify a matching card in the grid.
- 5) As soon as you have either flipped over a card that **does not match** or after your third consecutive **try**, it is **the next player's turn**.

Tip: In order to prevent a player from scoring more than three cards in a single turn, he or she should first place the winning cards in front of himself or herself, and only add them to his or her points pile at the end of the turn.

End of Game

The game ends as soon as the draw deck is empty and the last card has been used to try to reveal a matching card in the grid.

Players count their winning cards in their points piles and write down their scores on the notepad.

The game consists of as many rounds as the number of players who are playing, so that everyone takes a turn as the starting player – after the youngest, the starting position moves to the left. When everyone has had a turn as the starting player and the points from each round written down, then the points are added up for each player. The player with the most points at the end of the game wins.



Gameplay Variant

The die is required in this gameplay variant.

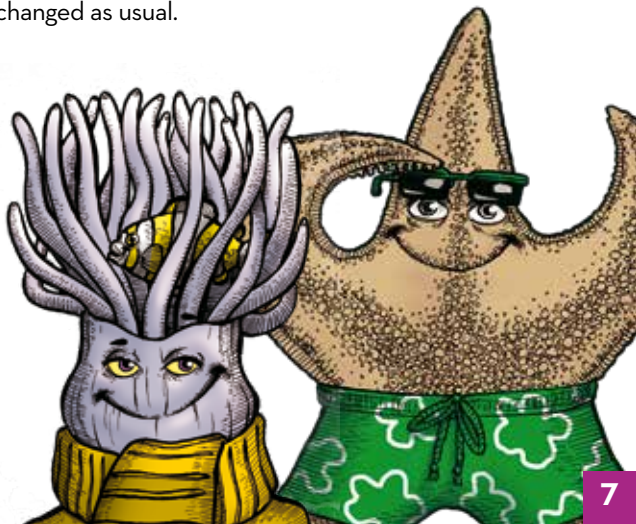


The players select the difficulty level that will be played and shuffle the corresponding deck of cards. The game then functions as described in the base game with the following rule change:

Whenever a card is revealed from the draw deck, the feature die must be rolled. The die then indicates whether the player must reveal a card with the matching sea creature or matching color in the 3x3 grid. You **must uncover exactly what the die indicates**. You no longer have the choice between matching the sea creature or the color.

- **Whale symbol:** The player must find the sea creature that matches the card revealed from the draw deck in the 3x3 grid.
- **Color circle symbol:** The player must find the color that matches the card revealed from the draw deck in the 3x3 grid.

It can happen that the specific sea creature or color matching card is not available in the 3x3 grid. That is just bad luck. A card must still be revealed in the grid and be exchanged as usual.



Solo Version

The player chooses the difficulty level he or she wishes to play and shuffles the corresponding deck of cards. The game functions as described in the base game with the following rule changes:

Whenever the player reveals a card in the 3x3 grid that does not match, then it is placed in a pile to the side. These cards form the error pile.

When the draw deck is empty and the corresponding attempt at making a match has been completed, the game ends. The player now counts his or her correct cards as well as the cards in the error pile. The player then deducts the error cards from the correct cards and writes down the result on the notepad.

After further solo games, the player can compare the results and see whether he or she has tended to improve.



The Author

Maureen Hiron, born in 1942 in London, was formerly the head of the games and sports department at a major London comprehensive school. At the age of 32, she suffered a severe brain injury in an accident and retired. Following the accident, the brilliant bridge player dedicated herself to playing games. Her brain then slowly recovered. Functions that were believed to be lost as well as her high intelligence returned. Since 1982, Maureen Hiron has successfully published games with short rules and smart mechanisms. She has also released a CD together with Sheyla Bonnick of Boney M.

Maureen Hiron and Kosmos thank all the test players and rule readers.

Interested in More Brain Training?

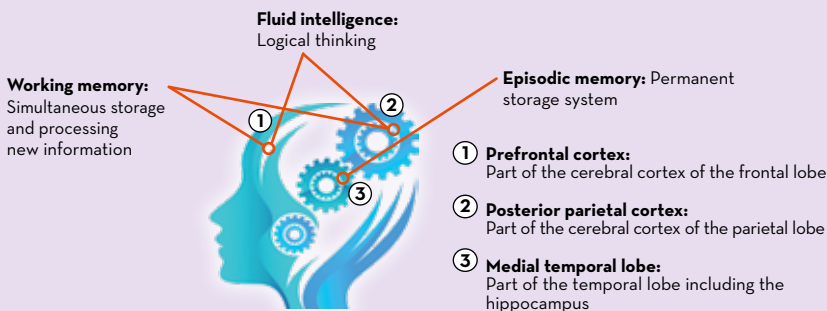
The Brainwaves series contains additional games offering a variety of brain training exercises.



Scientific Study

The following is some additional information about how the Brainwaves games have been specifically designed and tested to work the memory.

Neuroscientists from the Clinical and Biological Psychology Research Group at the University of Ulm, Germany investigated the Brainwaves series as part of a scientific study. The question at the heart of the study was which brain functions are used or required by these games. The demands placed on the working memory (simultaneous storage and processing of new information), long-term or episodic memory (the brain's permanent storage system), and fluid intelligence (logical thinking) were examined.



The games studied:

THE BRILLIANT BOAR
THE ASTUTE GOOSE
THE WISE WHALE

Results of the scientific study: The Brainwaves series places demands on all three of the brain functions that were examined (fluid intelligence, working memory, and long-term memory) and is therefore suitable for mental training exercises from the scientists' point of view.

Other well-known memory games are usually “static” – there are often no changes in the positions of the elements being memorized. The Brainwaves series is totally different: the players’ memories must be constantly updated because the elements in their hands or in the display change with each turn. This means that the players must remove already-imprinted elements associated with a certain position from their memories and remember new elements over and over again.

The game series thereby places demands on several important brain functions. This results in an effective, simple, and quickly played series of brain exercises. And the games are fun, because many people of all ages find these mental challenges and competitions enjoyable – whether played alone or in a social group setting.

Conclusion: Playing these games will help you train your memory.

Memory Terms Defined

Fluid intelligence, or fluid reasoning, is the ability to think logically and solve newly confronted problems. It is the ability to analyze a problem, see patterns underlying it, and come up with solutions using logic.

Working memory enables us to temporarily store and simultaneously manipulate and process information. We require working memory, for example, to remember the beginning of a sentence when the sentence comes to an end so that we can understand its content.

Episodic memory, or long-term memory, refers to memories that are held indefinitely – longer than short-term memories. Episodic memory is required, for example, to remember a conversation that already took place several days ago.



Illustration: Marc Margielsky
Graphics: Bluguy Graphic Design
Editor: Barbel Schmidts
English Edition Editing: Ted McGuire, Ed Gartin
Additional Graphics and Layout: Dan Freitas, Mark Geary

© 2018 Franckh-Kosmos Verlags-GmbH & Co.KG
Pfizerstraße 5-7, D-70184 Stuttgart
Tel.: +49 711 2191-0, Fax: +49 711 2191-199
info@kosmos.de, kosmos.de

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