Monika Tröster
Vienna, 9th June 2022

EBSN: LEARNING FROM THE PAST – PREPARING FOR THE FUTURE

W2: Numeracy and Financal Literacy

MONETTO – Financial Literacy and Game Based Learning (GBL)

Deutsches Institut für Erwachsenenbildung
Leibniz-Zentrum für Lebenslanges Lernen

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Content

MONETTO. The Game About Money

Basics

- Financial Literacy
- Game-Based Learning (GBL)
- Competence Model Financial Literacy
- Curriculum Financial Literacy

Development of the Learning/Curricular Game

- Eight steps to design, test and implement a curricular game according to Jackson Kellinger
- The final Game

Game Elements and Storyline

- Board game with 999 cards
- Action cards
- guiding through the game
- Orientation on the board
- Strategy and luck

Target Groups

Digital applications

Why is Financial Literacy relevant?

- „essential life skill“ (PISA-Programme, OECD, 2014)
- increasingly important in everyday life (Aprea et al., 2016)
- important for social participation (Tröster & Bowien-Jansen, 2019)
- increasing implementation of financial literacy programmes (OECD, 2014, 2016)
- financial practices in LEO 2018 (Grotlüschen et al., 2019)

Game-Based Learning (GBL)

- Basic assumption: learning happens rather casually in a state of flow (vgl. Csikszentmihalyi, 1990)
- Contributes to the expansion of the learning space
- Protected learning settings for the implementation of authentic learning content in game scenarios
- Risk-reduced environment promotes problem-solving skills
- Increases motivation to learn
- Joy of learning

CurVe Competence Model Financial Literacy

- **Structure: cross table**
- **Structure**
  - Dimensions: Knowledge, reading, writing, numeracy
  - Domains: revenue, money and payments, expenditure and purchases, budgeting, borrowing money and debts, making provisions and insurance
- **Development**
  - Theory-based
  - Empirically based
  - Communicatively validated
  - Cooperative

Competence domains financial literacy	Knowledge	Reading	Writing	Numeracy
1. Revenue				
2. Money and payments				
3. Expenditure and purchases				
4. Budgeting				
5. Borrowing money and debts				
6. Making provisions and insurance				

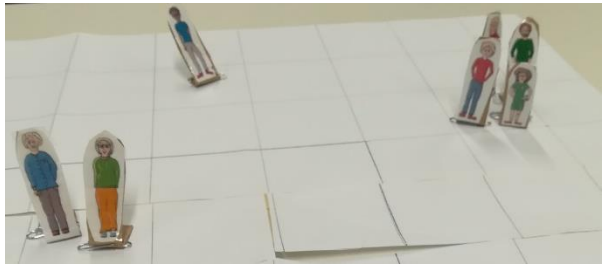
Everyday requirements

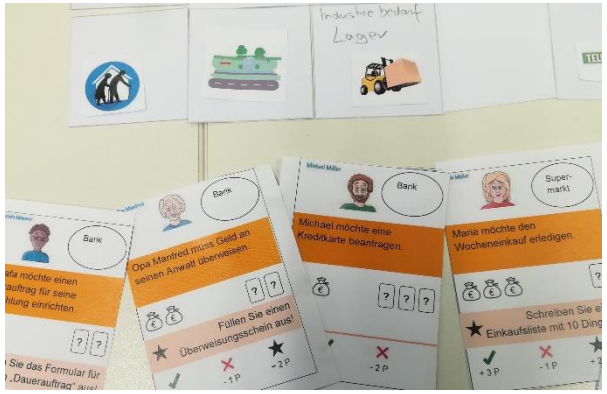
Curriculum Financial Literacy

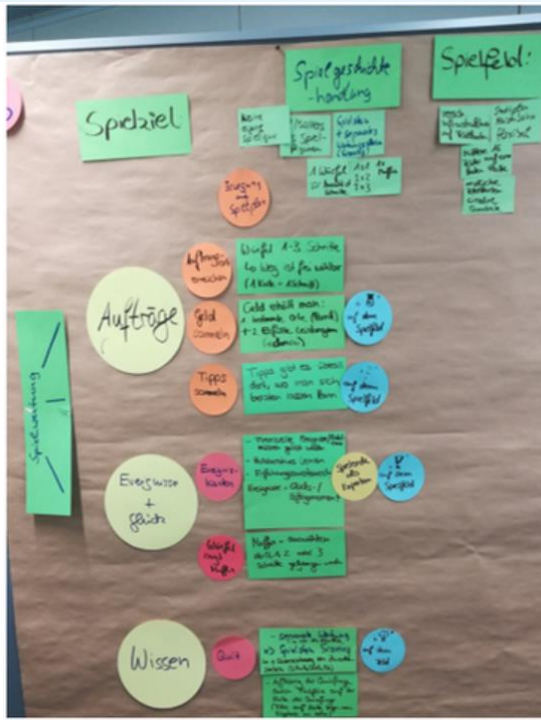
- **Guidebook**
- **Teaching/Learning Materials**
- **Instructional Design**
  - Problembased- and situated learning
  - Interdisciplinary design
  - Daily-life-oriented action requirements
  - Adapted from the teaching/learning approach of Anchored Instruction(Vanderbilt Group, 1993)

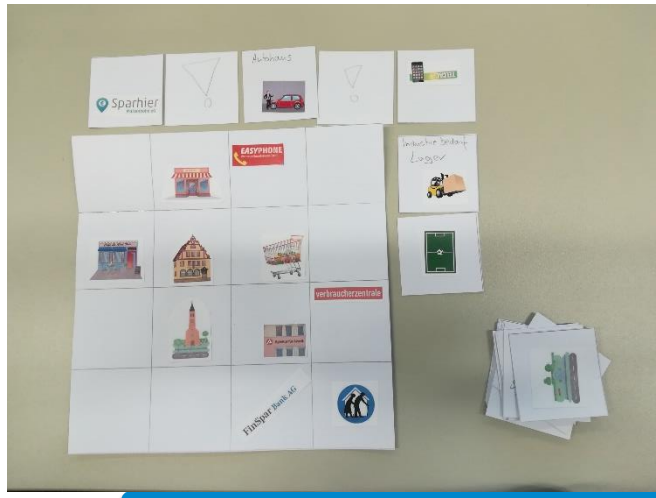
Implementation of eight steps to design, test and implement a curricular game according to Jackson Kellinger

1. Choose Topic
2. Diagram System of Topic
3. Tell Story of System
4. Gamify Story
5. Create Quests
6. Render and Test Game
7. Teach Game
8. Reflect on Teaching









The Final Game

- Designed as a board game
- Arranged for 2 up to 8 players, teenrated
- 8 tokens, which represent the members of the family Miller
- Cards are guiding through the game

MONETTO –

a board game with 999 cards

Action Cards are guiding through the game

Has Marie successfully completed her action? Then she gets **4 points**.

Has Marie reached the destination supermarket?

Did Marie get at least 3 tips?

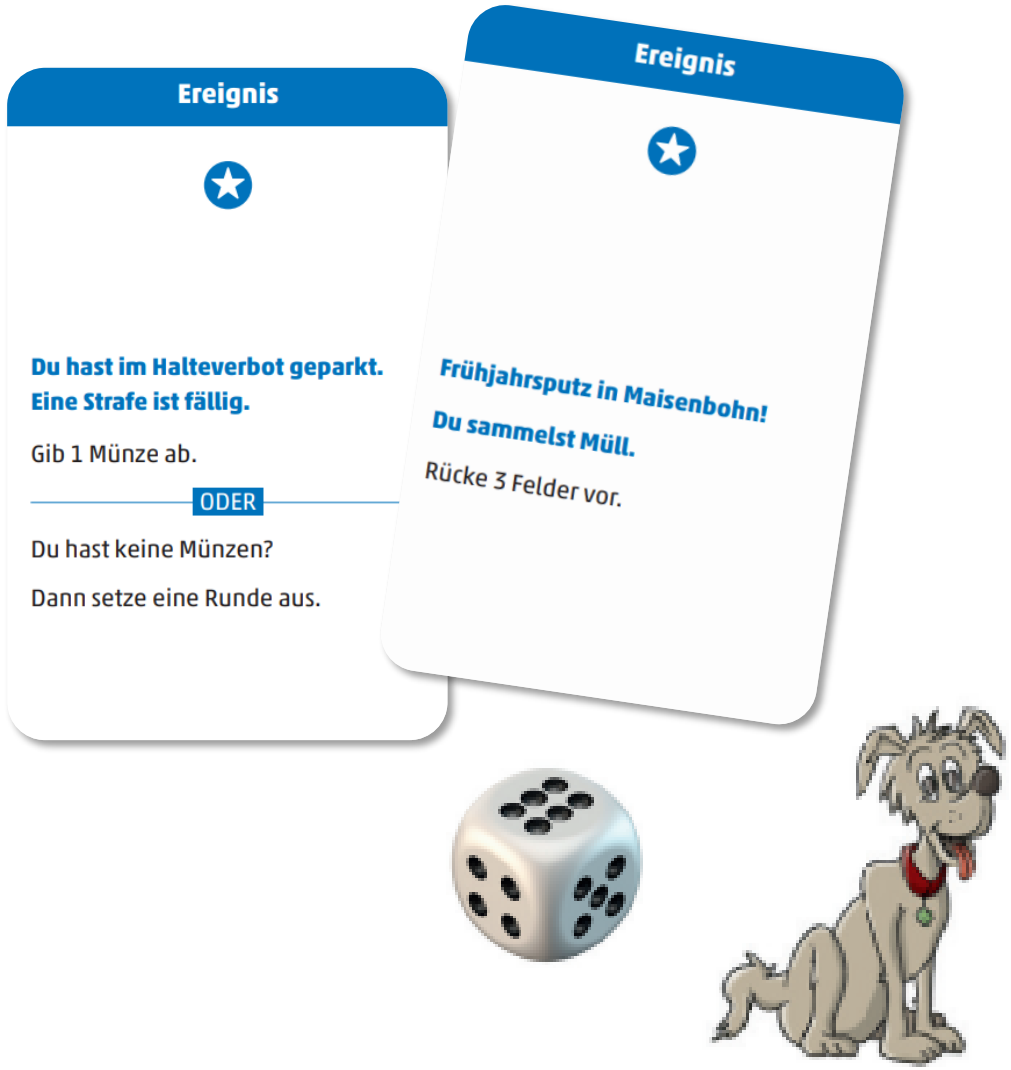
Did Marie earn at least 5 coins?

Orientation on the board

- City map of the virtual small town Maisenbohn
- Authentic infrastructure of a small town
- Different ways lead to the goal
- At first glance: Orientation in the town
- At second glance: Discovering details from daily life

Strategy and luck

- Choose wisely the way to the goal
- Quiz allows additional points
- Strategically navigate to tip and arithmetic fields
- Luck of the dice
- Muffin as a joker moves on with every 1
- Event cards provide excitement and change the course of the game
- Winner is not always the first at the goal



MONETTO. Target Groups

- Low-literate adults
- Migrants, refugees and immigrants
- People seeking advice in debt counseling
- Clients of job centers and employment agencies
- Parents and families
- Trainees
- People in transition from school to work
- Senior citizens
- Employees in the low-wage sector
- People with disabilities

MONETTO - Future prospects

- MONETTO. The Quiz
- MONETTO. The Multimedia Math Marathon
- MONETTO. Math Clips
- MONETTO. Math Wiki

Literatur

Aprea, Carmela; Wuttke, Eveline; Breuer, Klaus; Koh, Noi Keng; Davies, Peter; Greimel-Fuhrmann, Bettina; Lopus, Jane S. (Hg.) (2016): International handbook of financial literacy. New York: Springer Verlag.

Cognition and Technology Group at Vanderbilt (1993): Designing learning environments that support thinking: the Jasper series as a case study. In: Thomas M. Duffy, Joost Lowyck und David H. Jonassen (Hg.): Designing learning environments for constructive learning. New York: Springer Verlag, S. 1–36.

Csikszentmihalyi, M. (1990).Flow: The Psychology of Optimal Experience. New York: Harper-Collins.

Grotlüschen, Anke; Buddeberg, Klaus; Dutz, Gregor; Heilmann, Lisanne; Stammer, Christopher (2019): LEO 2018 - Leben mit geringer Literalität. Pressebroschüre, Hamburg. Online verfügbar unter https://blogs.epb.uni-hamburg.de/leo/files/2019/05/LEO2018-Presseheft.pdf, zuletzt geprüft am 02.09.2019.

Institut für Demoskopie Allensbach (2021): Die Bedeutung von Lesen und Schreiben für den Alltag in einer sich schnell verändernden Welt. Vorabergebnisse einer repräsentativen Bevölkerungsumfrage. Allensbach am Bodensee.

Mania, Ewelina (2019): Curriculum für die (Finanzielle) Grundbildung: Anforderungen aus Praxisperspektive. In: *Der pädagogische Blick* 27 (2), S. 78–90.

Mania, Ewelina; Bowien-Jansen, Beate (2020): Didaktik der Finanziellen Grundbildung. In: *ALFA-Forum. Zeitschrift für Alphabetisierung und Grundbildung* (97), S. 40–43.

Mania, E., & Tröster, M. (2014). Finanzielle Grundbildung – Ein Kompetenzmodell entsteht. Hessische Blätter für Volksbildung, 64 (2), 136–145.

OECD (2016): PISA 2015 assessment and analytical framework. Science, reading, mathematic and financial literacy. Paris. Online verfügbar unter http://www.oecd-ilibrary.org/docserver/download/9816021e.pdf?expires=1496403147&id=id&accname=guest&checksum=25F412EB78394297C94A891D9D836766.

OECD-Organisation for Economic Co-operation and Development (2014): Pisa 2012 Results: Students and Money: Financial Literacy Skills for the 21st Century. Volume VI, Pisa, OECD Publishing. Online verfügbar unter http://www.oecd.org/pisa/keyfindings/PISA-2012-results-volume-vi.pdf, zuletzt geprüft am 25.04.2017

Tröster, M. & Bowien-Jansen, B. (2019). *Sensibel für Finanzielle Grundbildung. Studienmaterialien und Handlungsempfehlungen*. Bielefeld. wbv media.

Tröster, Monika; Bowien-Jansen, Beate (2022): Auf in neue Welten – mit MONETTO spielen und Lernen. In: ALFA Forum

Winther, Esther; Paeßens, Jessica; Tröster, Monika; Bowien-Jansen, Beate (2021): Spielend lernen: Monetto – das Lernspiel für die Finanzielle Grundbildung. In: *Hessische Blätter für Volksbildung* (4), S. 53–70. DOI: 10.3278/HBV2104W006.

Thank you for your attention!

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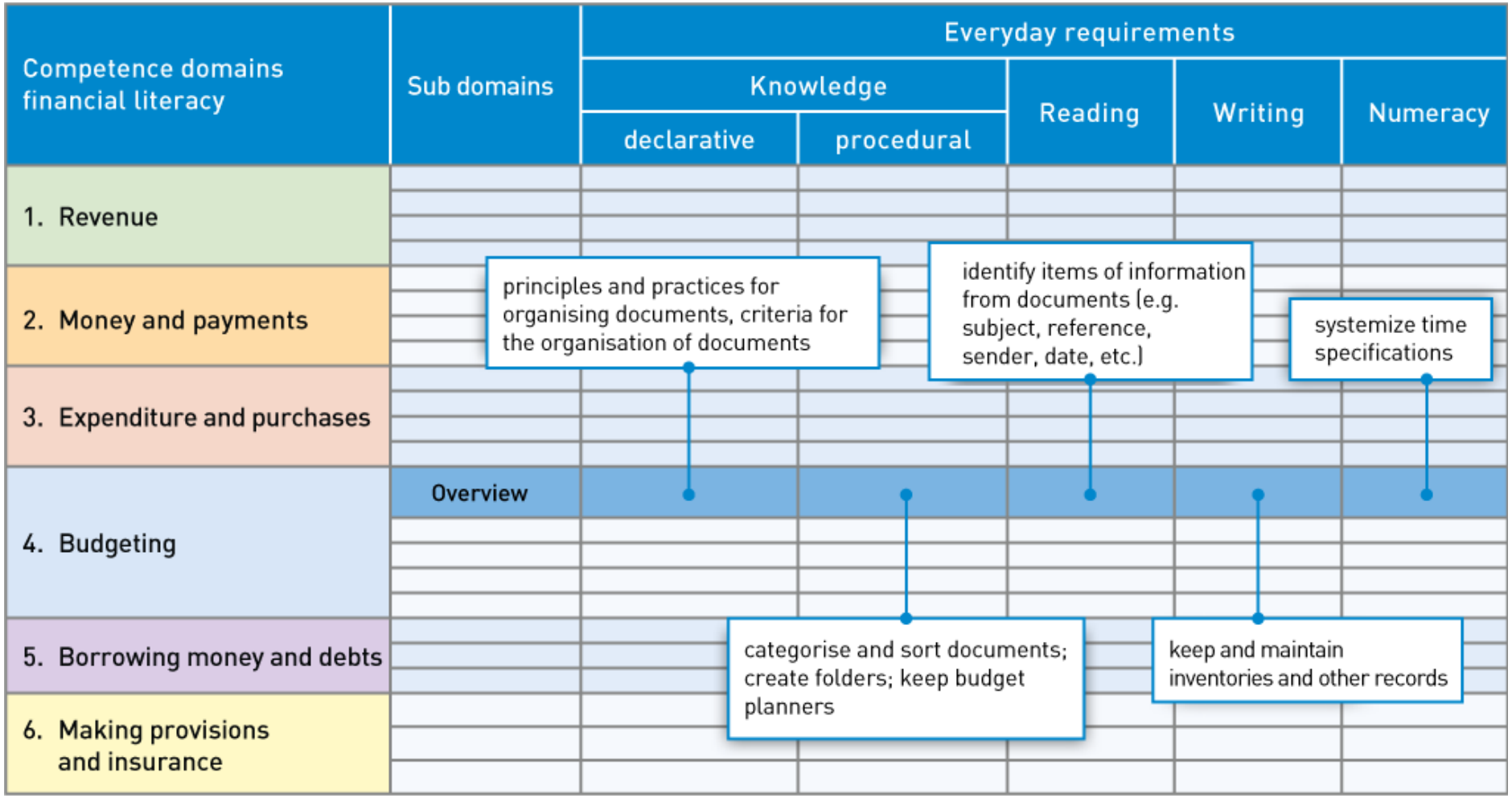
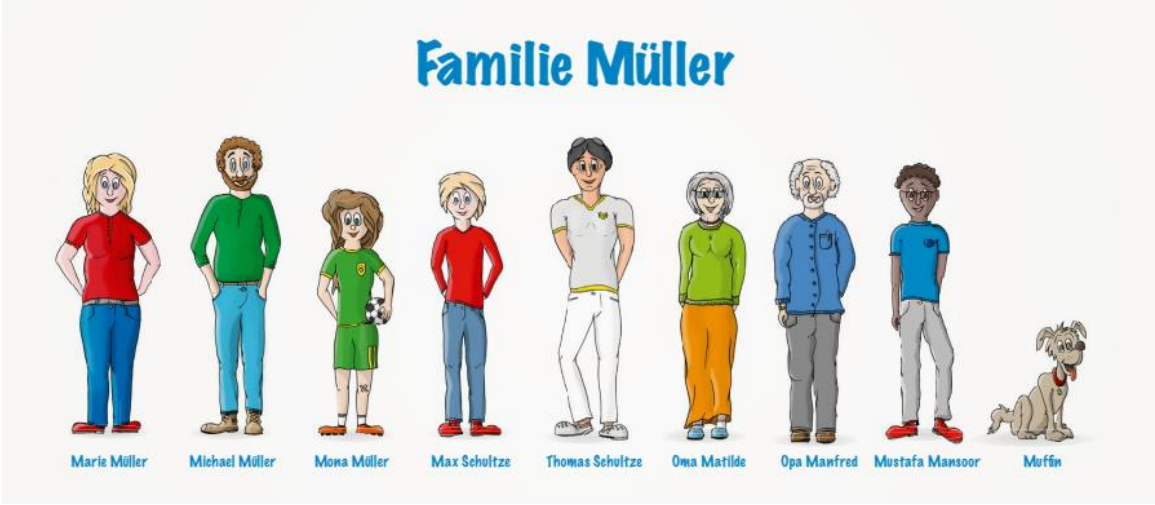
CurVe Competence Model Basic Financial Education



Curriculum Basic Financial Education - Didactic Concept

- Perspective of practice and perspective of science were included
- Problem- and situation-oriented learning
- Participant orientation
- variety of methods: activating and social learning
- interdisciplinary design
- lifeworld-oriented action requirements: narrative anchors along the stories of the Müller family



Anchored Instruction – Life stories of the Müller family as narrative anchors

- Adapted from the teaching/learning approach of Anchored Instruction.(Vanderbilt Group, 1993)
- The life of the Müller family as a common thread
- The starting point are life events and everyday situations in the life of the Müller family
- Learning objectives and learning content are integrated into the narrative plot.

Prototype - development and testing

- 20 pieces of the educational game produced for testing
- Development of a questionnaire
  - Standardized questions
  - Open questions
  - Partly voice recordings during gameplay
- Field access
  - Teachers and planners as well as learners from the fields of

    Basic education/literacy/graduate education/DaF
  - Debt counseling
  - Job center measures for the transition from school to work
  - Advisory service of the savings banks
  - Science

MONETTO. Game elements and storyline

Board game

with 999 playing cards

1 Spielbrett

9 Steckbriefe

70 Ereigniskarten

9 Spielfiguren

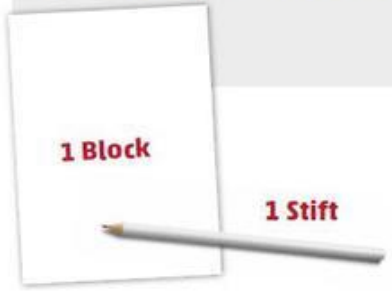
999 Spielkarten

920 Spielkarten aus den folgenden Bereichen:

Wichtig! In jedem Spiel wird nur in einem Bereich gespielt! Welcher Bereich interessiert euch? Wählt **einen Bereich** für euer Spiel aus.

Holt nur für den ausgewählten Bereich die roten, gelben, lila und orangen Karten aus den Boxen. Die übrigen Karten braucht ihr in diesem Spiel nicht.

Bereich / Domäne	Aktionskarten (200 Stück)	Tippkarten (360 Stück)	Quizkarten (180 Stück)	Rechenkarten (180 Stück) Stufe 1-3
Einnahmen	34	60	30	30
Geld- und Zahlungsverkehr	34	60	30	30
Ausgaben und Kaufen	34	60	30	30
Haushalten	33	60	30	30
Geld leihen und Schulden	32	60	30	30
Vorsorge und Versicherung	33	60	30	30



1 Block

1 Stift

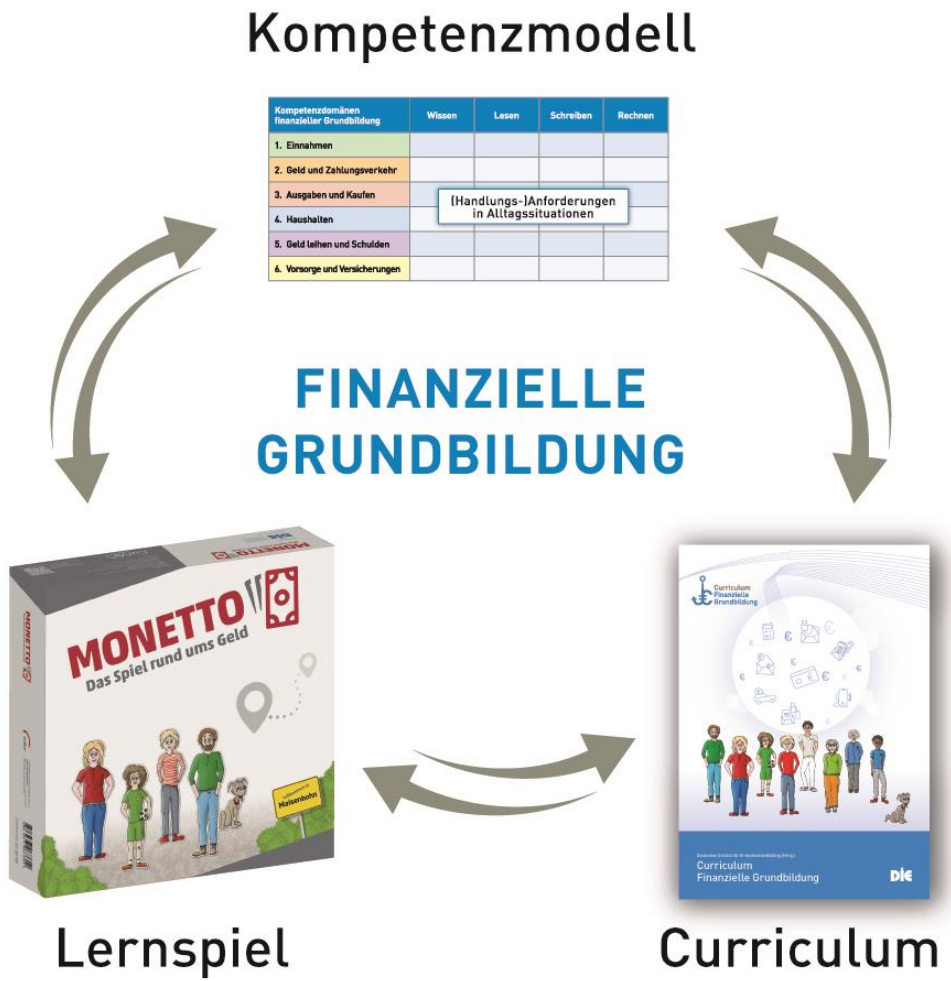
1 Würfel

Beachte! Für jede Spielfigur gibt es in jedem Bereich **eigene Aktionskarten**.

81 Münzen

MONETTO - a building block in the CurVe-universe

- complements the competency model and the financial literacy curriculum
- also includes non-cognitive aspects of dealing with money
- enables learning through play
- deepens what has been learned through play
- supports the transfer of what has been learned into everyday life
- allows for different changes of perspective
- creates opportunities for discussion and promotes reflection
- learning contents and topics from the anchor stories of the curriculum are taken up and extended



MONETTO -
a building block in the CurVe universe

- Play as a starting point for identifying learning needs and learning interests.
- Game characters represent different target groups and specific learning contents
- Life situation of the game characters gives specific learning content
- Playing serves to consolidate and apply what has been learned in everyday life

Kompetenzmodell FGB Kompetenzdomäne	MONETTO Aktionskarten	MONETTO Tippkarten	MONETTO Quizkarten	MONETTO Rechenkarten	Curriculum Finanzielle Grundbildung Materialsets und *Zusatzmaterialien (ZM)*
Einnahmen	**34**	**60**	**30**	**30**	
	3	5	4	3	Thomas Schultze wird arbeitslos
	4	2	7	6	Max erste Gehaltsabrechnung
	0	13	1	1	*Hartz 4 für Familie Müller? (ZM)*
	2	2	1	0	*Max möchte eine Ausbildung machen (ZM)*
	2	7	0	0	*Thomas Schultze sucht Arbeit (ZM)*
Geld und Zahlungsverkehr	**34**	**60**	**30**	**30**	
	5	4	0	3	Max eröffnet ein Girokonto
	12	19	3	9	Max nutzt sein Konto
	8	13	0	10	*Max möchte sparen (ZM)*
Ausgaben und Kaufen	**34**	**60**	**30**	**30**	
	1	2	5	1	Mustafa braucht ein neues Handy - die Handytarife
	0	0	0	0	Marie plant Monas Geburtstagsfeier
	0	3	0	0	Mustafas Wohnung - die Stromabrechnung
	3	12	4	2	*Max Onlineeinkauf – die Retoure (ZM)*
	3	2	8	1	*Max zieht aus – fixe und variable Kosten (ZM)*
	8	22	6	18	*Monas Geburtstagsfeier – Marie kauft ein (ZM)*
	1	1	0	0	*Mustafa möchte seinen Handyvertrag kündigen (ZM)*
Haushalten	**33**	**60**	**30**	**30**	
	7	2	0	1	Marie muss neu rechnen - der Unterhalt für Max fällt weg
	8	21	6	7	Opa Manfred ordnet sein Chaos
	6	6	0	5	*Maries Schwangerschaft - neue Ausgaben (ZM)*
	2	11	13	10	*Mustafa und die Nebenkostenabrechnung (ZM)*
Geld leihen und Schulden	**32**	**60**	**30**	**30**	
	1	2	0	21	Michael möchte einen Gebrauchtwagen kaufen
	20	20	9	9	Opa Manfred hat finanzielle Probleme
Vorsorge und Versicherungen	**33**	**60**	**30**	**30**	
	19	37	19	19	Mustafa und die Haftpflichtversicherung
	11	7	1	5	Marie und die Altersvorsorge
	7	11	10	6	*Oma Matilde und die Rente (ZM)*

MONETTO – Action-cards

- represent narrative anchors
- provide writing stimuli in the sense of creative writing
- allow identification with the game characters and/or life situations
- allow the transfer of the situation into one's own space of experience
- offer a broad spectrum of different everyday situations
- take into account a variety of specific starting situations

MONETTO – Tip-cards

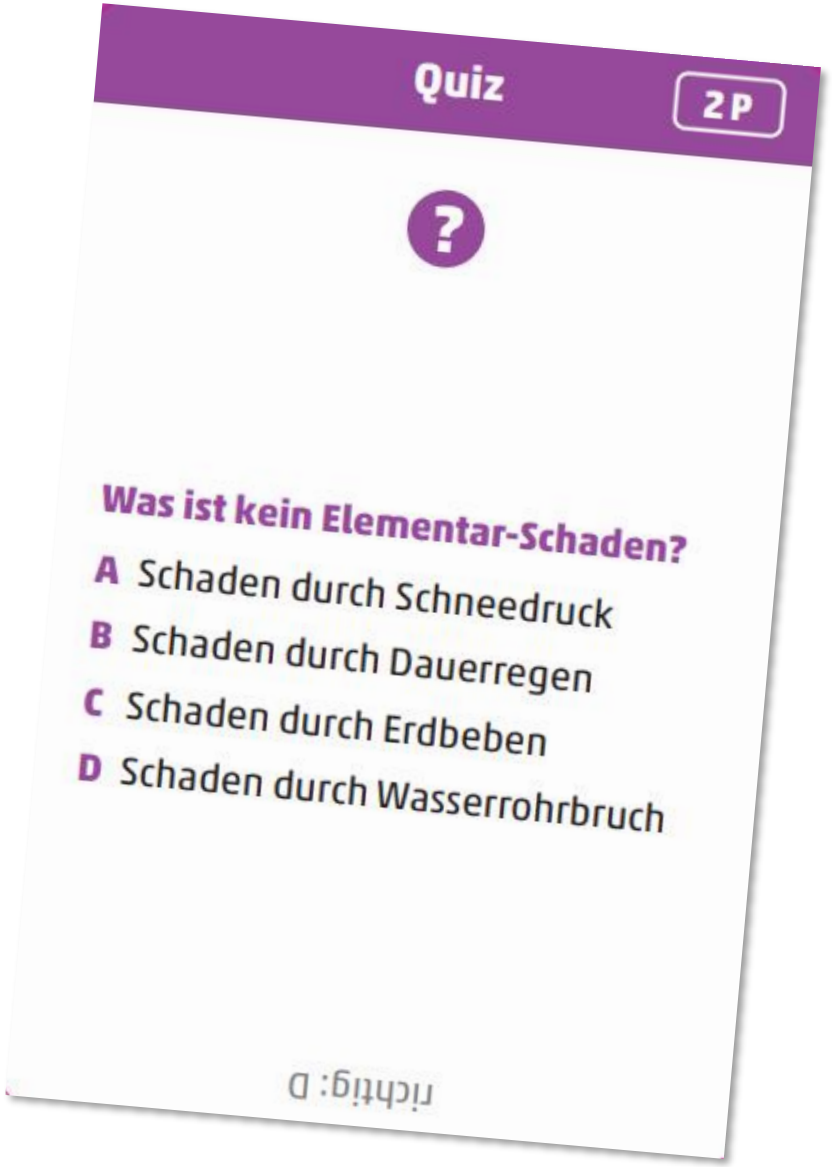
- are suitable for individual reading exercises
- support the handling of technical terms and knowledge
- create discussion opportunities
- stimulate the exchange of experiences
- encourage reflection
- challenge learners as experts in their own right

MONETTO – Event-cards

- also offer numerous opportunities for discussion
- take a look at critical life
- life events, risks and opportunities
- provide an opportunity to focus on non-cognitive skills in dealing with money
- enable transfer to the learner's own experience
- encourage learners to act as experts in their own field

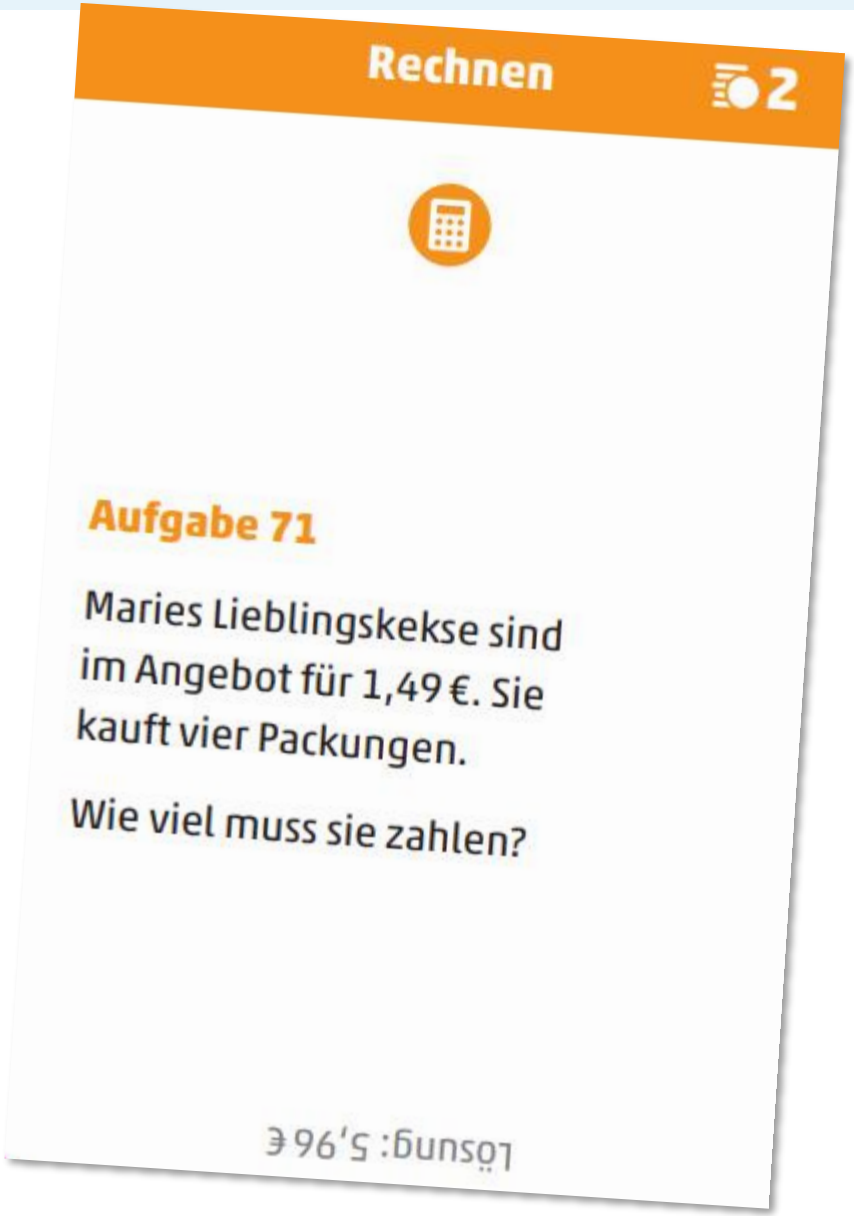
MONETTO – Quiz-cards

- are a game inside the game
- let train knowledge
- support the acquisition of technical terms
- provide an occasion for research tasks



MONETTO – Calculation-cards

- offer a pool of math problems at three different levels
- are directly related to everyday life and the world we live in
- are also suitable for self-learning in combination with the interactive calculation guide
- offer an opportunity to discuss different ways of solving the problems



Time for your questions…

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Ministry of Culture and Science
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