

CREATIVITY AND COMPUTATIONAL THINKING THROUGH THE GAME DESIGN

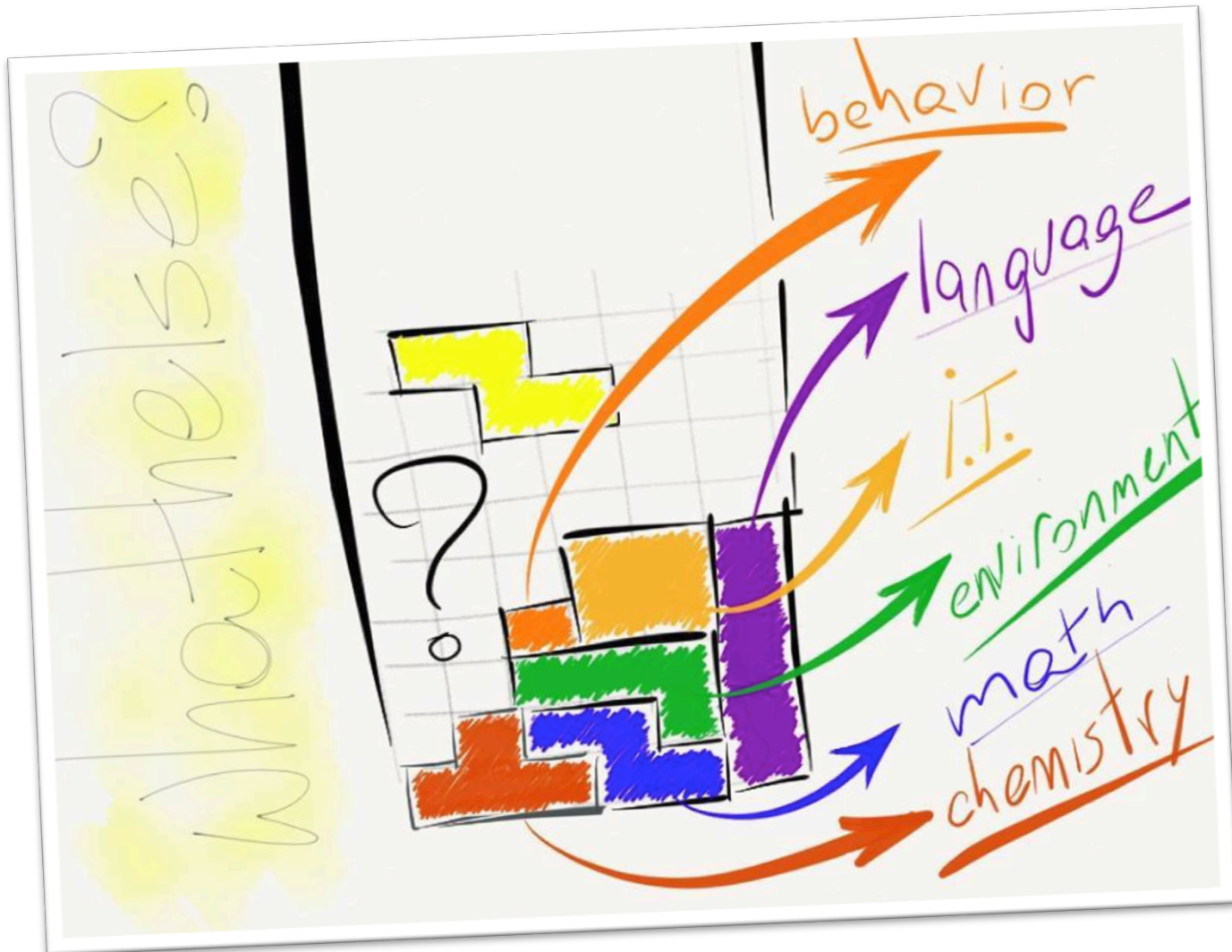
COMBINING PHYSICAL & DIGITAL RESOURCES

Diego Lieban
Linz, Austria - November 2019



LOGICAL GAMES

FROM PLAYING TO MAKING



A SURPRISING STARTING POINT

BRIDGES CONFERENCE, 2016 - FINLAND

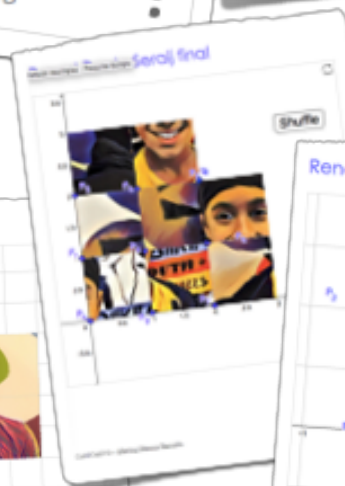
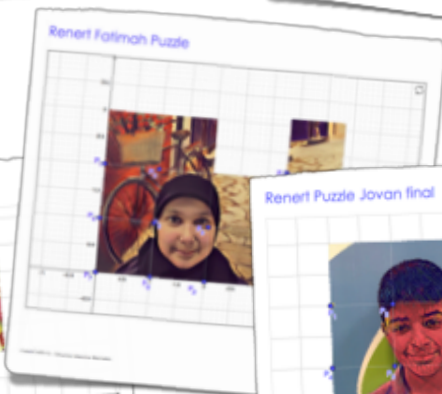
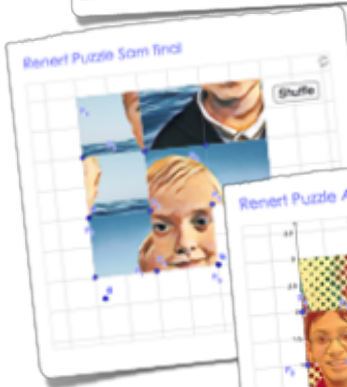
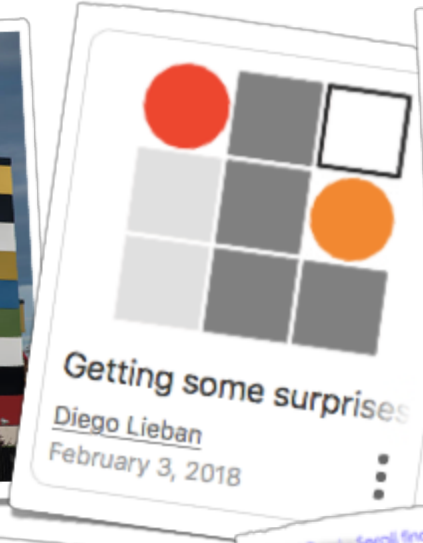


Mathematricks: Surprising and Revealing
by Sandra Reichenberger and Diego Lieban

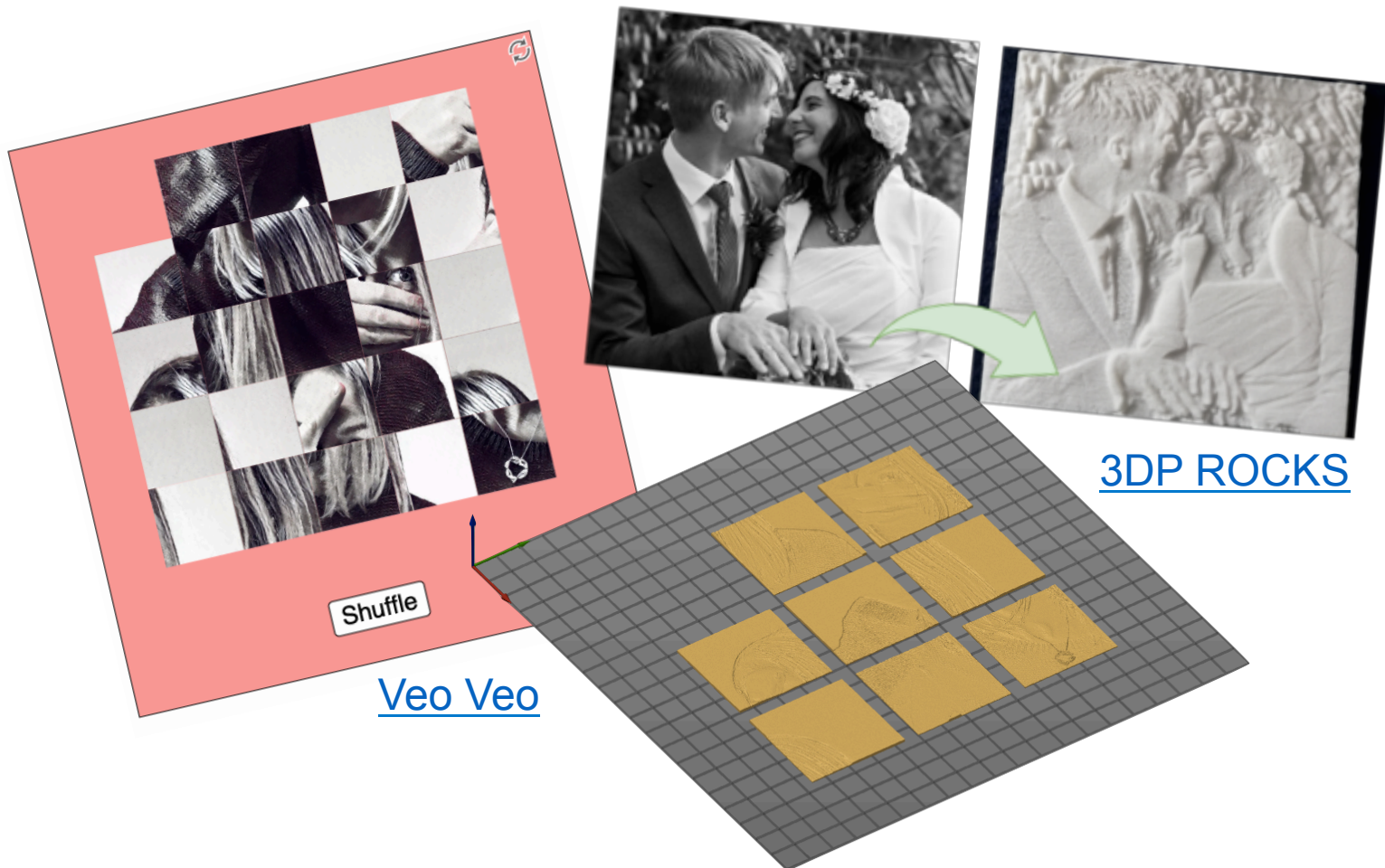
+30k of views

CUSTOMIZED PUZZLES

PROMOTING DIFFERENTIATION & CREATIVITY

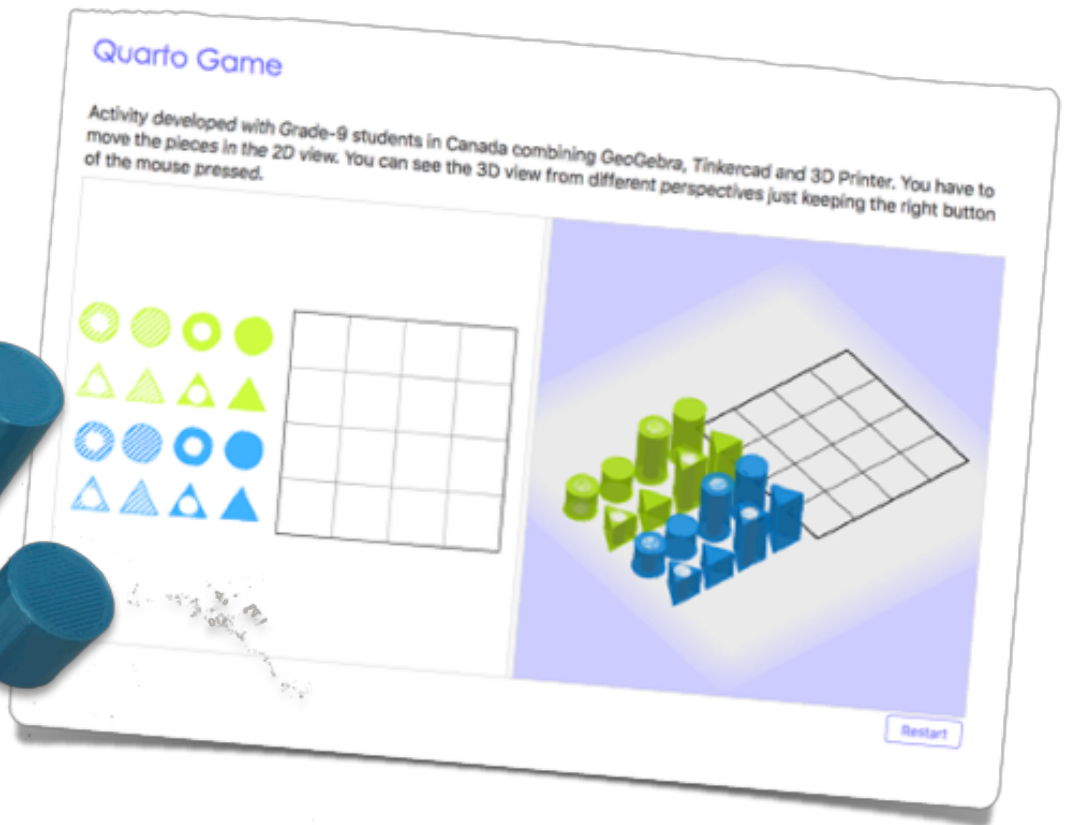
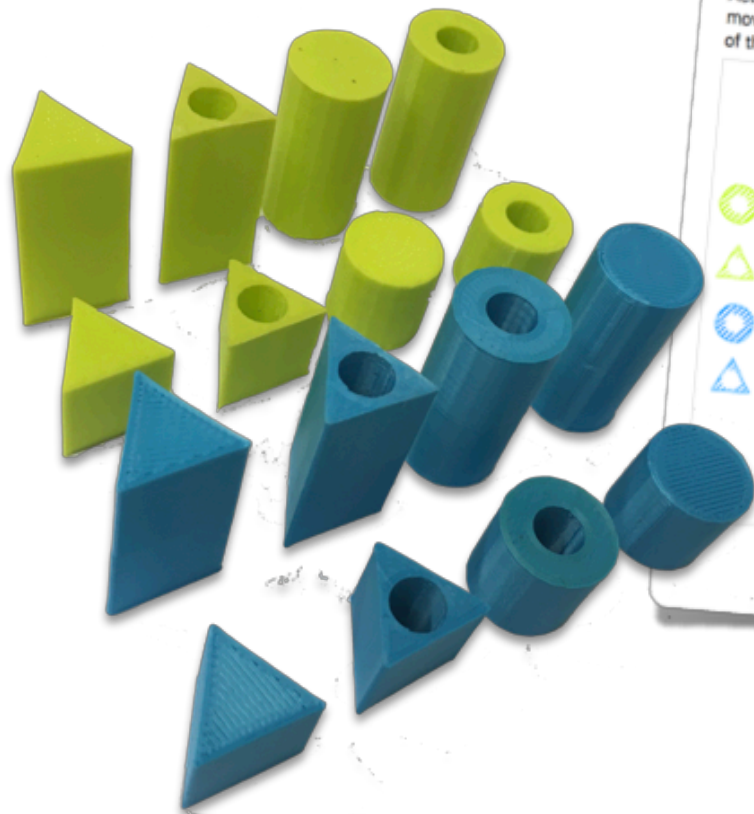


MERGING IDEAS THROUGH PERSONAL PROJECTS



QUARTO GAME

FROM CODING TO BODY PRACTICES



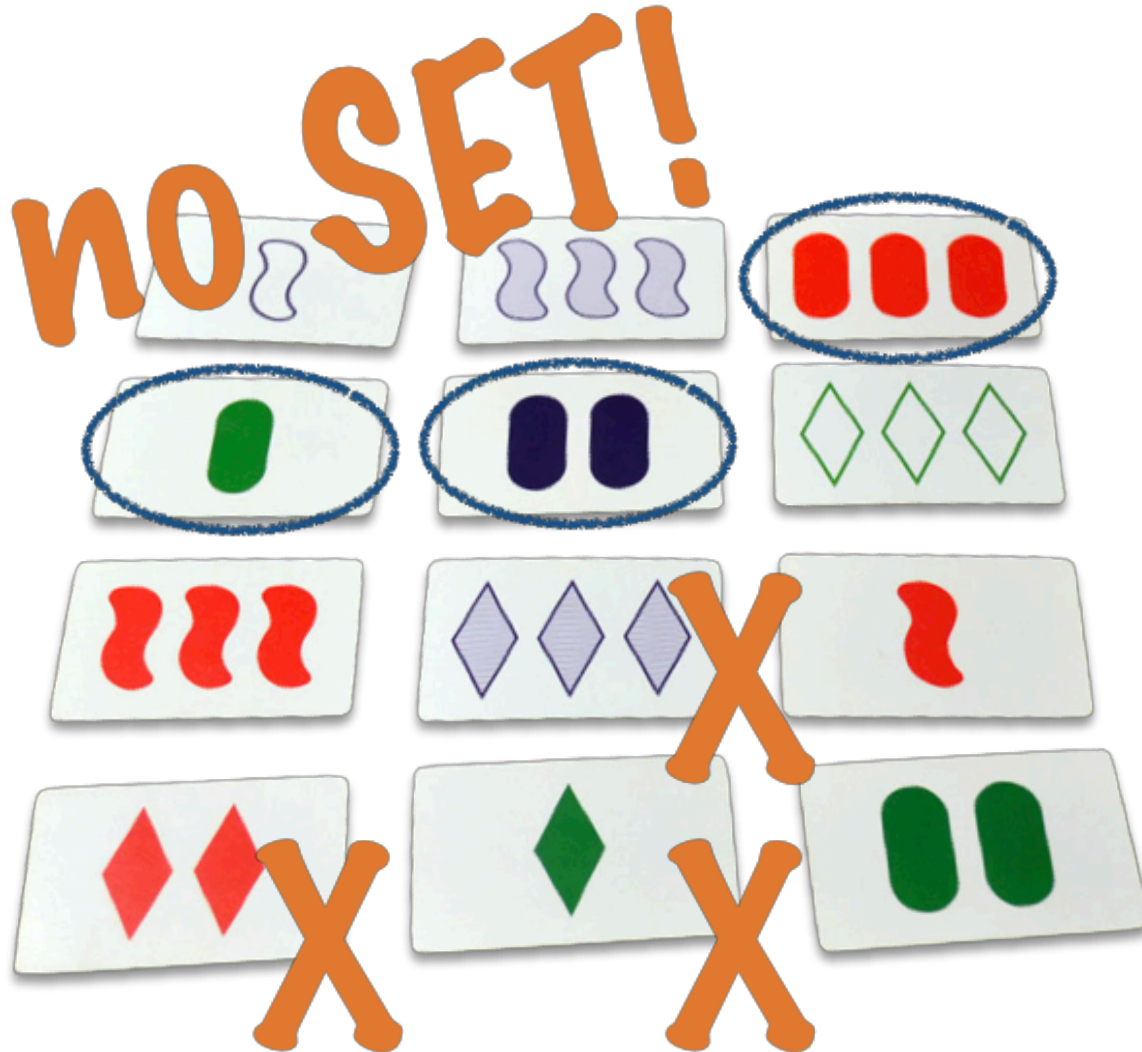
2D → 3D → APP DEVELOPMENT

ADAPTATION & MULTIPLE REPRESENTATION



Ruana Schneider,
IFRS - Brazil

GRASPING THE RULES



NEW APPROACHES OF TEACHING BASED ON OPEN-ENDED TASKS & PBL

Exploring academic creativity in the form of "play," Rouzie (2000) argued, "Students may need to feel some permission to experiment with the aesthetic and rhetorical possibilities of playful discourse, to experiment with a variety of roles and subject positions" (2000, p. 651).

Play allowed students to freely experiment with visual and mediated elements, to make mistakes, and to try new combinations while learning about how these decisions affect the design of a text (p. 635). Play may be particularly important as a creativity tool for learning when students are working with media and modes with which they have never composed before.

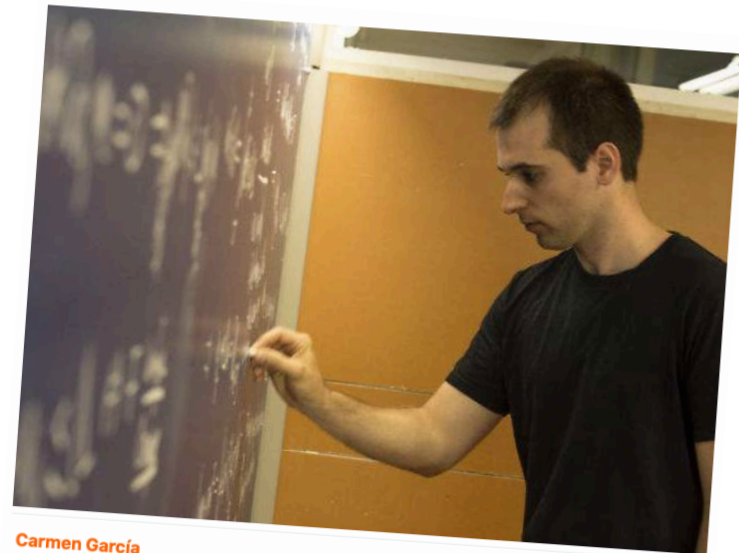


Rouzie, Albert. (2000). Beyond the dialectic of work and play: A serio-ludic rhetoric for composition studies. *Journal of Advanced Composition*, 20(3), 627-658.

CHALLENGING X INSPIRING

MOTIVATING THE AUDIENCE AS A FIRST STEP

Joaquim Serra:
"Mathematics has to
be treated as a game
or challenge to be
stimulating."



Carmen García

Madrid • 3/10/2019 - 10:15

La [Real Sociedad Matemática Española](#) (RSME) ha concedido el Premio José Luis Rubio de Francia 2018 a Joaquim Serra, doctor por la Universidad Politécnica de Cataluña y actualmente investigador en el ETH-Zurich tras obtener el prestigioso "Ambizione Fellowship" de la Swiss National Foundation (SNF). Serra consiguió el

[SOURCE \(IN SPANISH\)](#)

CHALLENGE 1

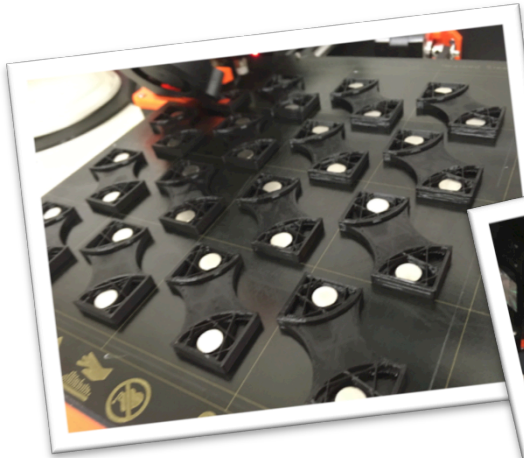
WIZARD BLOCKS GAME



INITIAL REFERENCE: [Creating Painting Puzzles](#) (GeoGebra)

CHALLENGE 2

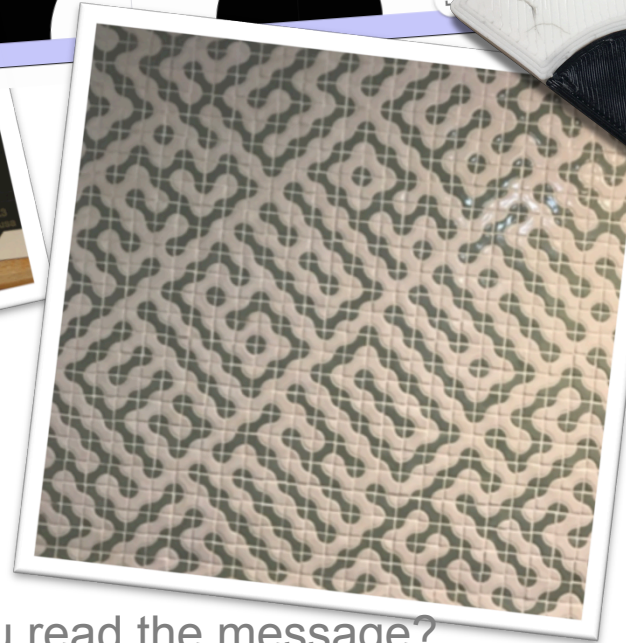
TRUCHET



Truchet 3x3

Author: [Diego Lieban](#)

Click on the center of each square to flip it and on the corners to rotate it.



INITIAL REFERENCE:
[Truchet 3x3 \(GeoGebra\)](#)

EXTRA REFERENCES:
[tinkercad model](#)
[tiles \(game rules\)](#)

[BRIDGES PAPER I](#)

[BRIDGES PAPER II](#)

[BRIDGES PAPER III](#)

[BEAVER RUN/MOMATH I](#)

[BEAVER RUN/MOMATH II](#)

Can you read the message?

THANK YOU



3D PRINTING IN THE
SCHOOL
CAN BE COOL



GAMES AND PUZZLES
WITH GEOGEBRA



DISSECTING A CUBE

PLAYING
MAKING
THINKING
ADAPTING
TESTING
REFINING
CREATING
LEARNING