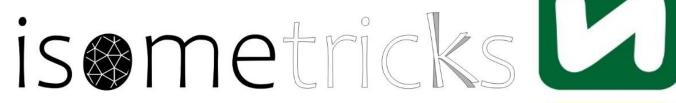




Member of JA Worldwide







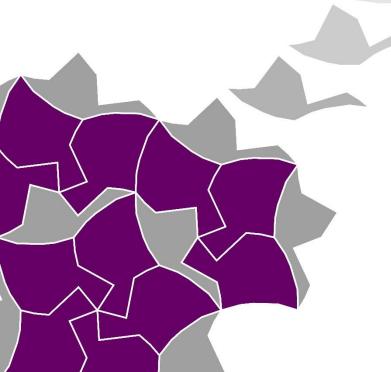
Business Report



EXPERIMENTAL HIGH SCHOOL OF UNIVERSITY OF MACEDONIA



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1 | EXECUTIVE SUMMARY

THE PROBLEM

Kids today do NOT play like they used to! But playing is a necessity, not a luxury. A cornerstone of human development, which remains valuable at all ages. People don't stop playing because they grow old, they grow old because they stop playing! Modern educational theories highlight the value of playing as an important educational tool, while it can be used as an effective non-pharmaceutical therapeutic intervention. However, serious games used in education and medicine are all e-games.



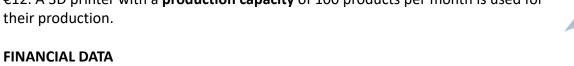
THE SOLUTION

We believe in the power of playing! With a **vision** to bring back playing in the lives of us all and using the awarded research of our School's Mathematics Club on isometries and tessellations, we created an **exciting game** of thought and creativity with hidden math, which stimulates the human imagination, combats stress and exercises the mind. **Wizzle**, whether as a fun game or as a hands-on serious one, is the mind's "medicine".



PRODUCTS

Wizzle is a collection of colorful tiles designed according to mathematical rules and assembled with mosaic logic, providing endless possibilities for creation. It can be played individually, but also in groups as a board game. It comes in many versions which differ in shape, color, number of tiles, mathematical background and level of difficulty. Wizzles are **designed** and **produced** in-house with 3D printing technology, which offers unprecedented possibilities for custom editions and after sales service. The customer can design their own unique wizzle, through an innovative interactive application on our website. Wizzles are **sold** at €8, €9 and €12. A 3D printer with a **production capacity** of 100 products per month is used for their production.



100 **stocks** were issued, with a nominal value of €2. We received **sponsorships** with a total value of €2,150. Our profits are €3,800.3 with a gross profit margin of 67.65%. Part of our profits as well as the cash prizes which we won in the competition of J.A. Greece will be invested in the purchase of 3D printers to meet the high demand and to exploit new distribution channels.



MARKET AND CONSUMERS

We **target** all age groups. The market is segmented into: i) children and millennial parents, ii) kidults, iii) elderly people iv) teachers v) people with mental disabilities and elderly people with dementia, people in rehabilitation clinics, and their therapists. The **demand** is very high. We **sell** directly, at bazaars, trade shows, through our e-shop and we created a **Network of Points of Sale**.



THE FUTURE

The great demand of our products, the important scientific collaborations, the rising popularity of wizzle in the Mass Media and our success in competitions (Product Promotion Award – Trade Fair JA Greece 2023, 1st place at Company Program 2023 JA Greece, 1st place at Social Innovation Relay 2023 JA Greece, 2nd place at Social Innovation Relay 2023 Global) and most of all our commitment to our vision allow Isometricks to gaze at the future with optimism!



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2 | STARTING UP

Who we are

Isometricks was established in October 2022 by 16 students of the Experimental Senior High School of the University of Macedonia.

Our company name is a combination of the words "isometry" and "tricks". We design, produce and market an exciting game of thought and creativity based on a mathematical background, wizzle (wizard + puzzle).

We support global initiatives that highlight the value of playing.

MISSION

To offer to all the people a fun and creative activity with hidden math which exercises the mind at the same time.

VISION

To create a wizzle-gaming culture and bring playing back into the lives of everyone, especially children.

How did we come up with the product?

We were looking for an innovative idea for a product-proposition to the public that we would create ourselves, which would inspire us and create value for society. We took advantage of the awarded Best Educational Practice for Symmetries and Tessellations of our School's Math Club and created a game which we design and

produce in our School.

Why did we decide to create a game?

Because we experience the lack of playing every day, as we are busy with school and extracurricular activities.

Why did we decide to create wizzle?

Because we are starting to get tired of computers and technology and we didn't want yet another e-game.

Because, through playing, we wanted to help all students understand the difficult subject of Geometry, as we did.



Description of the product

Wizzle is a collection of colorful tiles designed and assembled according to mathematical rules with mosaic logic, giving endless possibilities for creation. The tiles embody and visualize the mathematical rules with which they are drawn. They transfer these rules to the tessellations they create. The player implements them, even if they don't realize it, without having to use the formal language of mathematics.

Ways to use wizzle

The user can:

- solve the wizzle in many ways, creating different patterns,
- use the wizzle tile as a stencil, to design the mosaic on paper and create their own paintings,
- play the wizzle as a board game.

Product types:

Our products come in many shapes, sizes, colors and also differ in the number of pieces, mathematical background and degree of difficulty. It has also been produced in special editions (Xmas Edition, Valentine Edition, Art Edition). See all products and their designers on our website https://sites.google.com/view/wizzle.













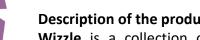








OUR PRODUCT



Wizzzle's design incorporates the mathematical concepts of **isometries** (a kind of symmetries) and **tessellations** which are very important for humans as they are related to the way that human mind functions and to abilities, skills and functionalities it possesses.

- Humans are built with symmetries. Our bilateral symmetry is our biological history and the reason why we can stand, balance and move.
- Humans are surrounded by symmetries. Symmetries are patterns of development in the natural world.
- Humans function with symmetries. Humans imitated the symmetries they observed in their environment and transferred them to their artifacts and technology (from hand-axe to all transportation means).
- Humans think with symmetries. Symmetries are the origin of geometrical thinking and constitute a universal language. Being the first mathematical ideas recorded by humans they were used by all civilizations on the planet. According to neuroscientist Dr. Stanislas Dehaene, what differentiates the human mind and makes it unique is its innate geometric intuitions.

More information in our website: https://sites.google.com/view/wizzle

- 2) Our design and production method gives endless possibilities for custom editions and after sales service which are unprecedented for the global market.
- **Create** your own wizzle: you can choose a) the colors, b) the number of tiles, c) the size of tiles. We have designed and produced special orders for educational and medical purposes (for ANAGENESIS Rehabilitation Center and ALTZHEIMER HELLAS)
- You can **design your own unique wizzle** with the interactive app on our webpage.
- **After sales**: a) you can get any extra number of tiles you desire, b) we can replace worn-out or damaged tiles, making your product last for a lifetime.
- **3)** Creativity and Learning Community. We are developing a wizzle gaming culture supporting wizzle players with continuously new ideas on our website and including their own ideas, creating a community of interaction among wizzle users.





















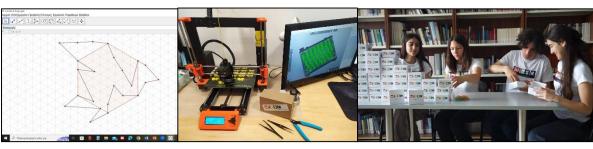
Wizzle is designed and produced in-house exclusively by us.

Production stages:

- 1. Design with the open source software of dynamic geometry GeoGebra.
- 2. Editing in Autodesk Fusion 360 and slicing in Prusa-Slicer.
- 3. Printing on the school's 3D printer (Donation from FlowOn Mini Company-Company of the Year 2021, JA Europe 2nd-place).
- 4. Trimming & Packaging.

We design the packaging boxes, outsource them for printing and assemble them ourselves.

Our production capacity is 100 wizzle per month per 3D printer.



Equipment		
Kind	Quantity	Value
3D Printer	1	1000.00€
Silicone guns	1	38.70€
Files for trimming	5	15.00€
Total		1,053.70€



A fundamental value of our company is respect for the environment.

- We use recyclable biodegradable filament and long-life packaging that can last for a lifetime and be passed down from generation to generation.
- Whenever possible, we use recycled filaments and reusable filament spools.
- We recycle all our production wastage and we transform it to marketing tools (faux bijoux) for our customers.
- We are working on the technology of producing filament from recyclable pet plastic bottles.

4 | BENEFITS OF OUR PRODUCTS

Regular engagement in solving and playing puzzle games promotes the creation of new brain connections, which improves short-term memory. Even people who solve puzzles for 25 minutes a day saw a four-point increase in IQ scores (University of Michigan study).

Wizzle, as:

- an open-ended game, focuses on geometric and spatial skills, logic, judgment, creativity, imagination, memory, patience, visual coordination and divergent thinking and stimulates fine motor skills. Through the repetitive movements required for its solution, it reduces stress and becomes a mindfulness exercise for busy adults. As a strategy board game, it can become the favorite activity of a company or a family.
- a non-pharmaceutical therapeutic intervention, can be used in identification of deficits, cognitive decline and in the recovery of patients, to help maintain memory and spatial skills for the elderly. It provides a sense of satisfaction, leads to the expression of feelings and contributes to the restoration of developmental deficits of children with reduced mental abilities.

We are collaborating with **Greek Association of Alzheimer's Disease and Related Disorders** in the context of a large research on the beneficial effects of wizzle on people with mild dementia and mental disabilities.

a hands-on learning tool, helps teach geometry by combining elements of STEM education. It offers teachers valuable educational material in order to apply modern pedagogical methods (Edutainment: learning through entertainment). Because it visualizes mathematical processes, it is suitable for students with dyslexia and for refugee students who struggle with language.

We are collaborating with the **Aristotle University of Thessaloniki** on applications and research for wizzle as an educational tool.



"Wizzle is a promising non-pharmaceutical intervention for patients with mild cognitive impairment and dementia that we are using and researching. We expect it to provide us with very significant results in the future."

Magda Tsolaki, Professor of Neurology, Neuropsychiatrist School of Medicine, Aristotle University of Thessaloniki President of the Greek Association of Alzheimer's Disease and Related Disorders

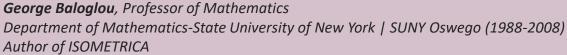


"Wizzle is a game that cultivates imagination and creativity. In MOMus we are very happy to use it in the Museum programs for our visitors."





"Wizzle is an innovative mathematical game that leads students and others to fascinating tessellations. Great hands-on educational experience."



5 | MARKET AND COMPETITION

Our target market

Wizzle, as a fun-creative game, appeals to everyone, especially

- Children and millennials parents
- Adolescents
- Kidults
- Elderly people

Kidults, these kids at heart, represent

- 1/4 of all games sales annually (around \$9 billion) and
- 60% of game market growth.

Wizzle, as a hands-on serious game, appeals to

- the elderly,
- people with mild dementia, mild mental disabilities,
- people in rehabilitation clinics, psychotherapists/psychologists, neurologists, occupational therapists, and health structures

who need effective non-pharmaceutical therapeutic methods.

 educators (mainly teachers, mathematicians, and artists)
 looking for innovative educational materials.

People living with dementia

Worldwide	50 million
Greece	200,000

School units in Greece	15,229
Teachers	71,000
Math teachers	7,500

Market research on Willingness to Pay for wizzle prices between €8 and €15

Parents	85%
Teenagers	62%
Kidults	67%
Elderly	72%
Teachers	91%
Health structures	100%

Competition

Our product is unique and this is why we do **not** have any **direct competitors**.

Our **indirect competitors** are all companies that design, produce and market educational and creative games, especially puzzles. The market is highly competitive, with the presence of both large and small scale manufacturers. (Major companies: Hasbro, Mattel, Ravensburger AG, Disney, Buffalo Games etc.). We consider Plus-Plus Company to have more in common with our company.

The most important **Greek** companies are: EPA Games, AS Company, Desyllas Games, Reboundo Company (the first to deal purely with the production of board and educational games in Greece), EO GAMES (launches games aimed at speech therapists, special education teachers, psychologists).

Advantages against our competitors

An ordinary puzzle is completed with its conventional solution. This is where a wizzle begins, with the only limitation being your imagination.

- Unique mathematical background.
- Hands-on serious game.
- Suitable for educational and medical purposes.
- Easy to be used by the elderly and people who are not familiar with new technologies.
- Configurable products.
- Unprecedented possibilities for custom editions and after-sales service.
- Creativity and Learning Community.



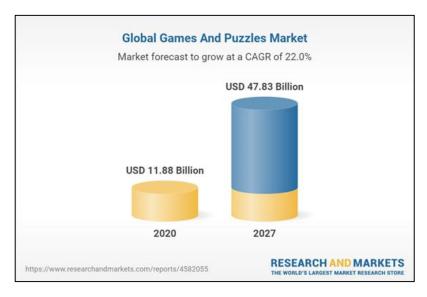






6 | BUSINESS ENVIROMENT

The COVID-19 pandemic created a unique set of circumstances that drove up the demand for Board Games and is projected to grow post-pandemic due to sustained interest in at-home entertainment, increased awareness about the benefits of such games.



Factors that create a favorable environment

- **Tendency of millennials parents** to invest in educational games, following the advice of experts.
- Emergence of the market of kidults, looking for stay-at-home games.
- Research that gave prominence to the value of non-pharmaceutical interventions (including board games) in the course of cognitive and memory decline.
- Establishing playing as a right of children (Article 31 of the UN Convention on the Rights of the Child).
- The **International Initiatives** to create a movement that will influence the cultural perception of the importance of playing with the Real Play Coalition leading.
- Recognition of learning through entertainment (edutainment) as the dominant form of education (National Association for the Education of Young Children), in the wider context of the recognition of quality education as the basis for improving human life and sustainable development (4th UN Goal).



SWOT ANALYSIS



S

Unique product, hands-on serious game, important collaborations, distribution channels, custom editions, after sales service, small financing needs, low production cost, in-house production, know-how and development potential, patent pending, awards and media exposure.

W

Obstacles by Greek legislation for student businesses (Valid registration number in tax and government authorities), low brand awareness, age and inexperience of executives, great demand for our production capacity.

0

Millennial parents, kidults, recent research on the role of playing in child development, need to reduce screen time, educational and medical needs.

T

International economic situation (inflationary pressures and interest rates increases), big indirect competition, popularity of technological devices.

PROMOTION

Prices

Wizzles are sold at the prices of €8, €9 and €12. Pricing is based on production costs, customer willingness to pay and competitive product prices.

We have sold

B2C: Bazaars, JA Trade Fairs, through our e-shop, directly. We are selling to parents, adolescents, adults, teachers, consultants, university staff, health structures.

We created **especially designed** wizzles for **Greek Association of Alzheimer's Disease and Related Disorders** and for **ANAGENISIS**, the largest Rehabilitation and Recovery Center for patients with mobility problems or chronic pain, so that they can even be used as a psychometric test for patients.

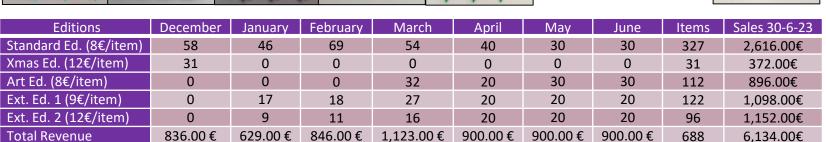
B2B: Distribution channels

MOMus (Metropolitan Organization of Museums of Visual Arts) museum shops (Athens and Thessaloniki), Bookstore of the University of Thessaly, Local bookstores.

We plan

Immediate sales to: Municipalities, Psychotherapy Centers, Health structures and care units for the elderly, NOESIS-Science Center & Technology Museum.









 Digital marketing tools (zero cost). We are particularly active on Social Networks (Facebook, Instagram, Twitter).



- Content Marketing, mainly through our business video (available on YouTube: https://youtu.be/T2b 3QmWwl8
- The Media (press release, articles, interviews on the TV and the radio and in newspapers).



Bazaars.



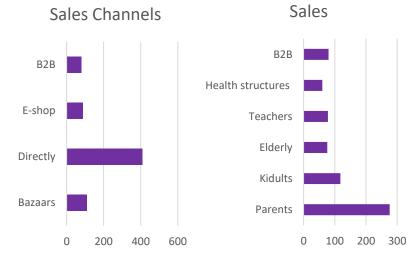
Moreover, a) we organized a webinar for 70 scientists of Alzheimer Hellas, b) we presented wizzle in the 13th International Math Week of the Hellenic Mathematics Society, c) we participated in MOMus-Museum of Modern Art programs for the public that utilize wizzle, d) we exhibited artworks created in the context of the wizzle Creativity and Learning Community at the Education & Culture Festival of the Municipality of Neapolis.



Our **company profile** is completed by our logo, products catalogue, posters, brochures, business cards and t-shirts with our logo.







8 | PRODUCTION COST

Average Variable Cost - AVC			
Type of product	Ext. Ed. 2	Ext. Ed. 1	Standard Ed.
Price	12€	9€	8€
Filament	1.40€	1.50€	1.40€
Packing Boxes	1.18€	1.18 €	1.18€
Bags	0.20€	0.20€	0.20€
Tags	0.05 €	0.05 €	0.05€
Energy	0.08€	0.08€	0.07€
Salaries	1.39€	1.02 €	0.97 €
AVC	4.30€	4.03€	3.87€

Notes:

Salesman Cost: Labor time/product X basic wages. (The work was offered by executives).

Energy: Printer/product power consumption X kWh value.

Filament and tags: Donation of a private sponsor (wishes to remain anonymous).

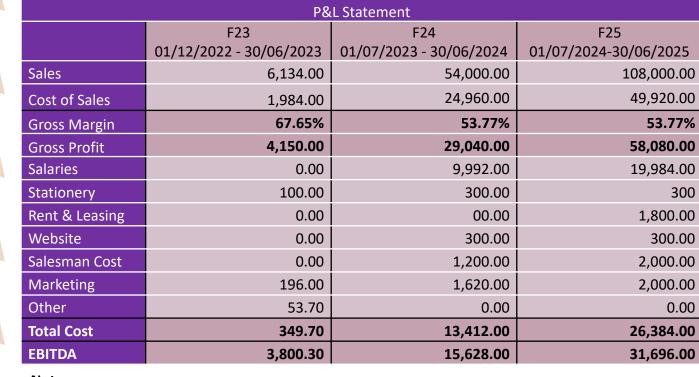
Packaging boxes: Donation from IKEA.

Break Even Analysis

Break Even Analysis	F23
Fixed Cost	349.70 €
Weighted Average Contribution Margin	4.94 €
Sales (products)	688
Break Even Point (products)	70

The break-even point for each type of product is: Standard Ed & Art Ed: 45 products.

Ext. Ed. 1: 12 products. Ext. Ed. 2: 13 products.



Sales forecast

Notes:

For the F23 in **Cost of sales**, labor was not calculated, because the executives volunteered. Labor was calculated at F24 and F25.

F24: We will produce with 5 printers and 1 employee (6 hours of labor per day).

F25: We will produce with 10 printers and 2 employee (6 hours of labor per day).

The business has been profitable since its first year of operation.

We have secured several distribution channels. We are going to increase our production capacity through investment in equipment, with funds which came from profits and cash prizes. All of the above allow us to forecast considerable profits in 2024 and 2025. In 2024, we forecast our entry in the global market.



9 | FINANCE

The company has small financing needs which were covered by issuing 100 shares with a nominal value of €200 and with significant sponsorships that ensured us the required working capital. Isometricks will continue to operate after 30/6/2023. During the liquidation of the Mini Company, the following are due: The Machinery (3D Printer is not an asset of Isometricks), Inventory of 100 products worth 416€ (the sales of the month of August), and Inventory of Raw materials worth €700. The cash will be invested for the obtaining of 2 new 3D printers. As part of our Corporate Social Responsibility, a Wizzle donation will be made annually to vulnerable social groups. This year we are going to donate wizzles to the Greek Association of Alzheimer's Disease and Related Disorders.

Financing Sources	
Shares 100*2€	200.00€
Sponsorship of IKEA	1,000.00€
Sponsorship of the private sponsor	1,000.00€
Sponsorship of Paramythoupoli	100.00€
Sponsorship of Materia	50.00€

Isometricks will re-invest the earnings in securing its operations and could turn to venture capital, crowd funding and business angels for extra needed sources.

Profit & Loss Account 1/12/22 -30/6/23 Valu		Balance Sheet 30/6/2023 Value in €
Sales	6,134.00	Machinery & equipment
Cost of Sales	1,984.00	Inventory Raw materials
Gross Profit	4,150.00	Cash in hand
Stationery	100.00	Total Assets
Other	249.70	Capital stock
Total Expenses	349.70	Profit Total Liabilities &
Profit befor Tax	3,800.30	Shareholder's Equity





- Purchase of 5 3D printers so as to supply the great demand.
- Obtaining of a patent, a process which we have already rooted.
- Scientific announcement of the results of the research we are conducting with the Greek Association of Alzheimer's Disease and Related Disorders.

FUTURE PLANS

- Collaboration with the Aristotle University of Thessaloniki on applications and research for wizzle as an educational tool.
- Claim of prizes in competitions for games and young scientists.
- Taking advantage of the promotion offered by the JA Competition in order to increase our distribution channels.
- Participating in the Trade Fair "The child and the game".
- Expansion in the global market.
- Production of filament using recycled plastic.
- Design and construction of specialized 3D printers, suitable for wizzle production.







53.70

416.00 700.00 2,830.60 4,000.30

200.00

3,800.30

4,000.30





10 | MANAGEMENT & TEAM

The organizational structure is based on our abilities, particular inclinations and the studies we plan to follow. The CEO and the Directors of the Departments were selected by the team based on their CV and a relevant interview.

Human resources are the most important resource of Isometricks. Our executives excelled at national and international JA competitions, won the Foodathon and Global Ideathon Competition, excelled at robotics competitions and are champions at sports.

We operate within the Entrepreneurship Club and spend a large part of our free time working mainly remotely. We have applied team-oriented leadership model and we communicate constantly, using technology, while our material is available on Google Drive.



We have the knowledge and drive to design, produce and develop our products, but also the sensitivity required to serve society.

Chief Executive Officer - Korina Malasidi

Sales Group

Marketing Group

Finance Group

Production Group

Public Relation Group

Communication **& IT**

F. Katsanou A. Omirou

Ch. Zirnas

M. Giakoumoglou K. Sarafidi N. Sivvas Th. Stefanidis

S. Tsouka P. Tsindaris S. Ouzounis

J. Terpsiadis A. Tsioundoukidi M. Mimidou

E. Voukouresli M. Tsindaris

A. Koultoukis

Our training

School's Mathematics Club in collaboration with leading scientists in the field (Professor G. Baloglou).

Our Inspirational Mentor, Mr. Alexis Papachelas (Journalist and Executive Editor of KATHIMERINI newspaper), was a source of inspiration for us, with his penetrating perspective and key observations.

In matters of entrepreneurship, the continuous guidance of our Mentors Mr. Ioannis Papadopoulos and Georgios Varelas from IKEA Thessaloniki is valuable, in a friendly atmosphere of understanding and acceptance that has impressed us.







Our journey into the world of geometry and entrepreneurship is a unique experience for all of us. Creating and running a business is by no means an easy task. It hides a lot of joy, but also a lot of anxieties and stress, especially when schedules are not met. Our business is dynamic and we struggle to keep up with a busy school schedule.

We consider the secret of our success to be flexibility, adaptability and work ethic.

isemetricks

<u>isometrics.ja@gmail.com</u> https://sites.google.com/view/wizzle



- https://www.facebook.com/isometricks.ja
- https://www.instagram.com/isometricks.ja
- https://www.twitter.com/isometricksja
- https://www.tiktok.com/@isometricks_ja
- https://www.youtube.com/@isometricks_ja
- https://www.linktr.ee/isometricks_ja

















