matatalab

STEAM

Learning Solution

For Elementary Education





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Pre-Kindergarten

“Matatalab is suitable for use by preschoolers. Matatalab is a learning tool that makes the learning process exciting; Matatalab can be linked to all subject areas of pre - primary education (me and the environment, language and speech, mathematics, art, music) The tool does not require much space to move around so it can be used freely for desktop activities.”

—— kindergarten teacher





Primary School

“During the pilot I as a teacher experienced cooperation with peers, happy faces, joy of learning new things and happiness when they figured out the solution. It was nice that we were able to boost creativity skills for my students. Robots were easy to use. There were tasks for all kinds of students, for them who just started coding and also for them who were at a more advanced level.“

—— Grade 1 teacher

Robotics Competition

”I think this has been a great example of how STEAM education can be brought to even very young children in a meaningful way. Well done MWRC! I look forward to more coding play for more young children in the future.“

—— MWRC judge



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About Us

Founded in July 2017, Matatalab is a technology education company striving to provide professional STEAM learning solutions for worldwide educational institutions and families. Aiming to shape innovative learning and entertainment experiences with the help of technology, and develop children’ s ability and confidence to face and change the world, Matatalab perfectly combines technology and education that develops a series of tangible coding products to ultimately cultivate computational thinking skills through coding.



Mission & Vision

Matatalab Mission

Develop children’s abilities and confidence to change the world through Matatalab’s innovative learning and entertainment experiences.

Matatalab Vision

Become the world’s leading education company based on innovative products and STEAM for kids.

Value of Education

Four C's of 21st Century Skills

Matatalab is a platform full of fun, excitement, and as an educator, potential. Throughout matatalab solutions you will see how robotics can be used to teach your students not just coding but math, science, art, music, and language as well, and all in ways that are sure to inspire. Matatalab is the perfect platform for your early learning students to experience a safe, even fun, place to make mistakes, learn from those mistakes, and carry on. We call that iteration and it is a critical part of learning.

Also critical in this learning is the “21st Century Skills”. These are a core set of competencies educators believe modern students are going to need to have more than anything. They include Communication, Collaboration, Critical thinking, and Creativity. Thankfully these skills are teachable and matatalab curricula could be where a life of 21st-century skill use is first experienced.

COMMUNICATION

- Effective Listening
- Delivering Oral Presentations
- Communicate Using Digital Media
- Engaging in Conversations & Discussionsns
- Communicating in Diverse Environments

COLLABORATION

- Leadership & Initiative
- Cooperation
- Flexibility
- Responsibility & Productivity
- Collaborate Using Digital Media
- Responsiveness & Constructive Feedback



CREATIVITY

- Idea Generation
- Idea Design &Refinement
- Openness & Courage toExplore
- Work Creatively withOthers
- Creative Production & Innovation

CRITICAL THINKING

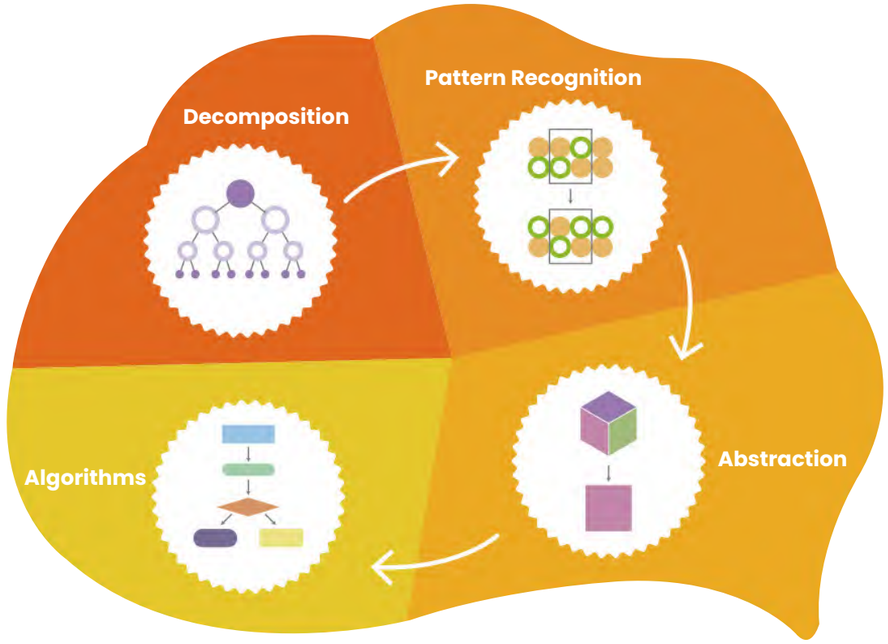
- Information & Discovery
- Interpretation & Analysis
- Reasoning
- Constructing Arguments
- Problem Solving
- Systems Thinking

Computational Thinking

Learning the foundations of computer science and computational thinking can help young children understand their digital world now, as well as empowering them with opportunities to control and manipulate it. Learning about technology, thinking like a computer scientist or computer programmer, and learning to code is how our children can be prepared to participate in and even build their future world.

Becoming literate in computer programming may seem beyond the developmental possibility for three- and four-year-olds, but, like languages, it is built from small steps into deeper understandings. First little learners learn about robots and then begin using robots. We introduce simple concepts like “robots need power/energy to work” and “humans control robots” and then we lead children to operate robots and have robots solve problems.

Computational thinking is a major focus of matatalab solutions. The implementation of problem solving and patterns of thinking alongside powerful ideas from computer science, math, and language can make pre-coding and coding powerful and meaningful learning opportunities for very young children, providing benefits beyond the preschool classroom.



Decomposition	Breaking down a complex problem into smaller parts.
Pattern recognition	Finding similarities or differences among multiple small problems.
Abstraction	Ignore unimportant details and focus on important parts.
Algorithms	Take appropriate steps and organize them into a series of commands (plans) to solve problems.

Milestones

2021

- Entered into 60 countries and regions with 8000+ educational institutions
- Launched new product Tale-Bot Pro
- Started Matatalab Pilot with European Schoolnet



2020

- Launched new product Coding Set Home Edition
- Launched global MatataWorld Robotics Competition
- Awarded the ISTE Seal of Alignment

2019

- Launched new product Matatalab Lite
- Entered into 40+ countries and regions
- Completed A round financing



2018

- Received several Industrial design awards
- Certified with Education Alliance Finland
- Developed international curricula
- Completed Pre-A round financing
- Became member of European Schoolnet

2017

- Company established
- Launched Pro Set and Coding Set on Kickstarter and achieved goal



Global Market

Matatalab is Popular in 60+ Countries and 8000+ Educational Institutions

" The most important value of the solution you are developing is the tactile learning that is involved and the modular growing complexity of the learning activities that a student can

Tommaso Dalla Vecchia,
Future Classroom Lab, European Schoolnet

Colourful, creative, hands-on. MatataLab's"Coding like ABC" takes coding to kindergarten level. Using game-based, hands-on coding, even the youngest children can start developing an understanding for computing in the most playful way. This is a relevant step in supporting future coding talents from an early stage on."

Beate Jost,
Technical Manager at Open Roberta,Fraunhofer IAIS

Your children learn how to program in very simple steps. I could see how intense they were. Her ability to concentrate, her logical thinking, and above all her anticipation of the following steps and movements of the computer, have been a great deal of fun and triggered new motivations."

Prof. Dr. i.R.
Hartmut Wedekind, HELLEUM

POPULAR AMONG KIDS















Matatalab STEAM Learning Solution

Prek - Grade 5

01
Matatalab Tangible Programming Language

02
Robots

03
Curricula

04
Professional Development

05
Competition

06
Supplementary Resources

STEAM Learning Solution

What is Matatalab tangible programming language?

Matatalab tangible programming language is suitable for children aged 3 to 9. Rather than using pictures and words on a computer screen, it uses physical buttons or physical blocks to represent various programming elements, commands, and flow-of-control structures, to code. By arranging and connecting these buttons or blocks, children can create programs and control a robot's behavior.



See in action

Why Matatalab tangible programming language?

The concepts of Computer Science are often unfamiliar, abstract and confusing for the young children. A tangible programming language help bridge the gap between the virtual world and the physical world.

It's believed that people, especially young children, learn more readily when their bodies are involved in the learning process. Tangible programming, as a physical way to learn abstract coding ideas is a more friendly way to learn fundamental coding concept at a very early age.

Here are the reasons why Matatalab tangible programming language help children learn Computer Science:

1. It makes programming physical and playful. Young children construct their understanding of coding concepts by using their hands.

2. It is a fun and engaging way for the young children to learn the basics of computer coding. The intuitive symbols on the physical buttons or blocks requires no literacy skills from the younger children which makes the programming process easier to understand and remember.

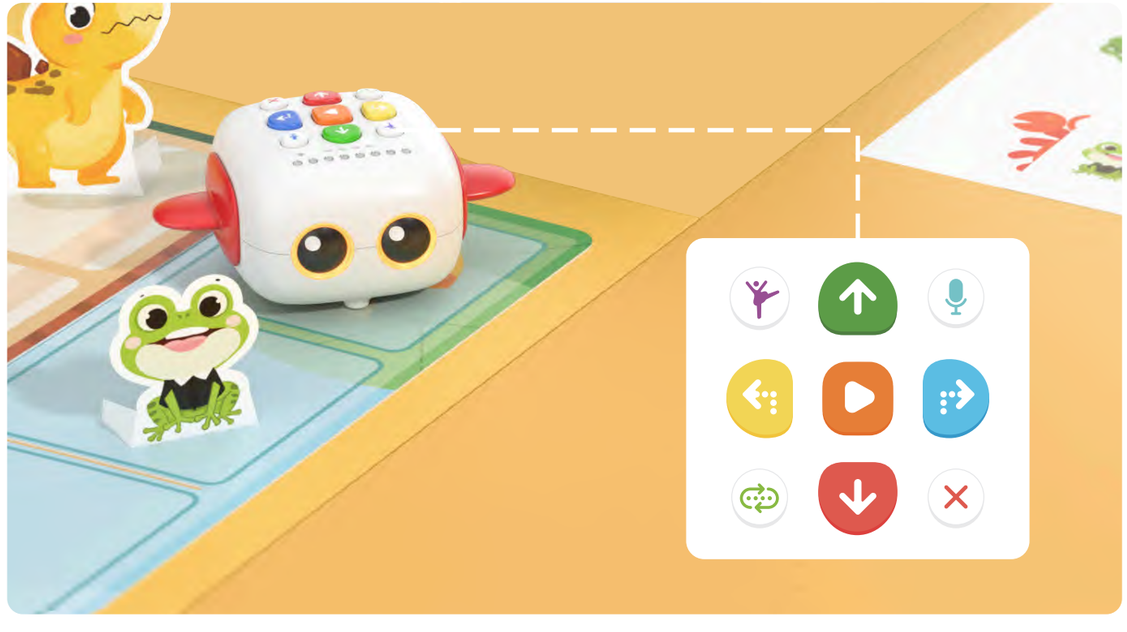
3. It helps build confidence for children to predict the movement of the robot as well as to test and confirm their reasoning. If children have physical evidence of how their thinking works, their understanding is more robust.

4. Both girls and boys can be equally engaged in the Matatalab tangible programming activities.

5. It builds a growth mindset for problem-solving.

6. It performs in social setting and encourage collaborations. Young children can work together to combine or modify the program as a team.

It is connected with the virtual programming language learning in the future. Children at a later age will be able to learn more abstract and virtual programming language at school without fear.

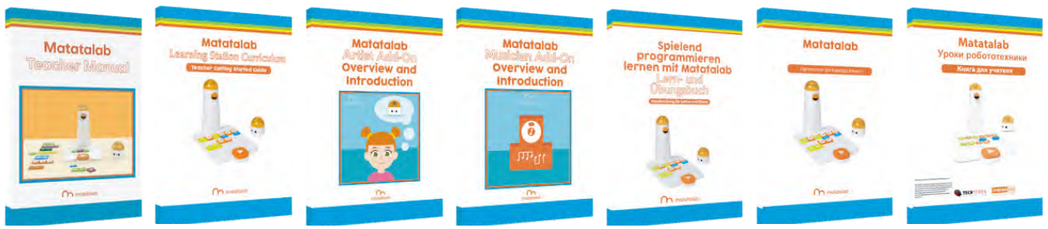


STEAM Learning Solution

Scope & Sequence

Curriculum Name	Product	Number of Lesson	Content Area	Age Range	Unplugged Activity	Direction	Sequence		Parameter	Loop1	Shape	Angle	Music	Loop2	Function	Speed	Time	Condition
Activity Cards for Tale-Bot Pro	Tale-Bot Pro	42	Math, Social Emotional, Social Studies, Science, Art	3~5	✓	✓	✓			✓				✓				
Matatalab Lite Teacher Guide	Matatalab Lite	16	ELA, Science, Math, Art, Literacy,	3~5	✓	✓	✓				✓					✓		✓
Matatalab Learning Station Curriculum	Pro Set	12	Computer Science, Art	4~6	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓			
Matatalab Musician Add-on	Coding Set+ Musician Add-on	12	Music	4~9	✓		✓		✓				✓					
Matatalab Artist Add-on	Coding Set + Artist Add-on	12	Art	4~9		✓	✓		✓	✓	✓	✓						
Activity Cards for Coding Set	Coding Set	40	Coding, Math, Art, ELA, Social Studies,Science	5~8		✓	✓		✓	✓	✓			✓	✓			
Activity Cards for Artist Add-on	Coding Set + Artist Add-on	10	Art	5+		✓	✓		✓	✓	✓	✓		✓				
Activity Cards for Musician Add-on	Coding Set + Musician Add-on	10	Music	5+	✓	✓	✓		✓	✓			✓	✓	✓			
Matatalab Animation Add-on Teacher Guide	Pro Set + Animation Add-on	16	Math, Science, Social Studies, ELA, Art	5~9	✓	✓	✓		✓		✓	✓		✓		✓	✓	
Matatalab Sensor Add-on Teacher Guide	Pro Set + Sensor Add-on	16	Computer Science, Music, Social Studies	5~9		✓	✓		✓				✓		✓			✓
Matatalab Extracurricular Curriculum	Pro Set	12	Computer Science, Music, Social Studies, Art	6~9	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓			

Standard-Aligned Curriculum





Robot Sets and Expansions

Matatalab's "Coding Like ABC" tangible programming tools allow students to perform and demonstrate 21st Century Skills by learning through play. With these educational tools, students learn and play in active ways without the need of a table screen or an app. Very young students may benefit from this tool since it does not require reading skills for success.

Predictive thought is important in computational thinking. Piaget's theory of constructivism includes the belief that people produce knowledge and meaning based upon their experiences. Matatalab challenges students to become critical thinkers and helps to build the students' 21st Century skills.

Age		3	4-5			6		7		8		9		10+	
Grade		Pre-K	Kindergarten			Grade 1		Grade 2		Grade 3		Grade 4		Grade 5+	
Robot Sets	Tale-Bot Pro														
	Matatalab Lite														
	Coding set														
	Pro set														
Expansion packs	Musician add-on														
	Artist add-on														
	Animation add-on														
	Sensor add-on														
App & Software	MatataCode														
	Matatalab robot set x Scratch														
	Matatalab robot set x Swift														

Robot Sets and Expansions









Tale-Bot Pro

Recommended for PreK-K

Creating your own interactive stories through coding: Matatalab Tale-Bot Pro is an entry-level learning robot set for kids aged 3-5. Leveled up with the innovative technology and with a wide range of cross-curricular Interactive maps, kids can learn basic coding concepts, and manipulate a robot to develop stories in a smart manner. Through the game-based play, kids can improve skills of free speaking, and storytelling, while their social-emotional skills, four C's of 21st century skills and computational thinking skills are exercised.



More looks and abilities



Capable to draw interesting shapes

Features



Teaches Commands, Sequences, Loops



Instant voice feedback with 8 languages



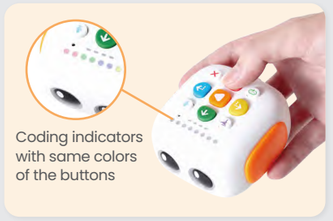
Ability to record for imaginative storytelling



Multiple accessories for new abilities and new looks



Supports drawing and dancing through coding



Intuitive to track coding process and do debugging

How to play

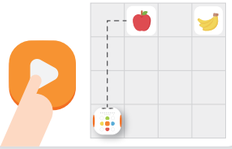
1 Plan the path



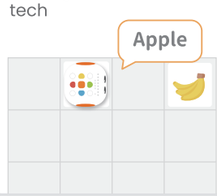
2 Press the buttons to enter the commands



3 Press the Play button to start the robot



4 Coding with interactive tech



Package contents



Tale-Bot Pro x 1



Accessories x6



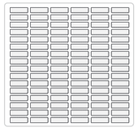
Command card x32



Configuration setting card x1



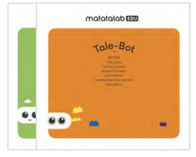
Callout stickers quick guide x1



Callout stickers x1



Double-sided Interactive Map x5 + Blank map x1



User guide x 2



Sticker booklet x 1



Paper craft x 3



Washable marker x2

Extra Purchase

Activity Cards

Available to support the curriculum on all fronts







Recommended for K-Grade 4

Pro Set

Allowing kids to develop the necessary cognitive abilities and learn coding skills at a young age. Kids are expected to leverage their imagination to create infinite possibilities using coding blocks and algorithms to control a robot car. With instant feedback, they will quickly learn that coding is simple. Plus with the abilities to play music and drawing, Matatalab Pro Set will enable kids to be more creative and explorative.

No screen required

Kids can construct their knowledge on coding and logic directly with their hands.

Intuitive symbol design

Use directional language and no literacy required.

Gamification

Kids learn through playing and thereforefeel that coding is simple.

Packaged with challenge booklets

Kids learn through playing and thereforefeel that coding is simple.

Compatible with Lego®

Kids learn through playing and thereforefeel that coding is simple.

Learn to Code, Code to Learn

- Motion
- Event
- Sequence
- Parameter
- Loops
- Function
- Forever loops
- Debugging
- Conditionals

- Math
- Geometry
- Music
- Art
- DIY
- Science

Easy to Use



Step1: Create your playground. Set the starting point, the goal and your storybackground.



Step 2: Plan the route and predict the movement for MatataBot.



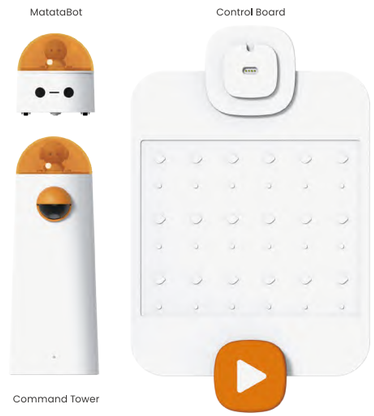
Step 3: Press the big button and observe if the MatataBot goes to where you want.

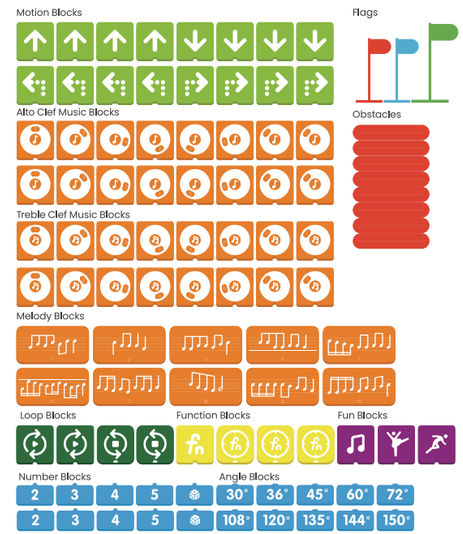


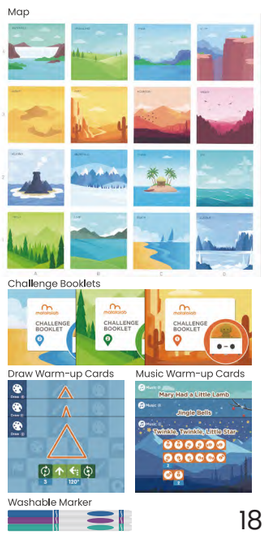
Step 4: Verify and debug if it goes to the wrong place.

Problem-solving skills developed.

What's Included











Recommended for K-Grade 1

Coding Set

Allowing kids to develop the necessary cognitive abilities and learn coding skills at a young age. Kids are expected to leverage their imagination to create infinite possibilities using coding blocks and algorithms to control a robot car. With instant feedback, they will quickly learn that coding is simple.

No screen required

Kids can construct their knowledge on coding and logic directly with their hands.

Intuitive symbol design

Use directional language and no literacy required.

Gamification

Kids learn through playing and thereforefeel that coding is simple.

Packaged with challenge booklets

Kids learn through playing and thereforefeel that coding is simple.

Easy toexpand

Available to be played with Musician/Artist/ Animation/Sensor add on.

Compatible with Lego®

Kids learn through playing and thereforefeel that coding is simple.

Recommended for K-Grade 4

Musician add-on

See in action



Allowing kids to learn notes and beats through programming. With free combination, kids can compose their favorite music, or even create their own now!

- Learn notes and beats
- Create music
- Compose music

Recommended for K-Grade 4

Artist add-on

See in action



Allowing kids to draw beautiful graphics and pictures through programming. More advanced stages of coding, their mathematical theories of geometry also improve.

- Draw shapes
- Learn mathematical concepts
- Learn geometry

Recommended for Grades 1-4

Sensor add-on

See in action



Allowing kids to draw beautiful graphics and pictures through programming. More advanced stages of coding, their mathematical theories of geometry also improve.

- **Detects sound, color, light, infrared(IR), gyro, touch, message sending and receiving.**
- **Controls the onboard LED lights on the Matatalab Controller.**

Recommended for K-Grade 4

MATATA Map



See in action

MATATA Map includes 16 pieces (10x10cm) magnetic grids with 6 sets of story themed cards, which allows kids' limitless backgrounds to build upon, even a 3D one. Each grid can be opened and inserted with various story cards that are double-sided.

- **Magnetic and support to build a 3Dbackground.**
- **Can be opened and changed into limitless backgrounds.**
- **Double sided.**

Recommended for Grades 4

MATATA FRIENDS



See in action

Three new silicone covers for the robot are: sky blue unicorn, pinky bunny and orange cat designs. Kids can now decorate their MatataBot as their favorite characters! Tail hook compatible with Lego bricks.

- **Three new characters.**
- **Personalized play.**
- **Tail hook compatible with Lego bricks.**

MatataCode

APP



MatataCode is a graphical programming App based on blocks.Combine all the coding blocks on the App to join in Matatalab' s adventures. Kids can use their imagination to create infinite possibilities with MatataBot in the real world, through this App!

GET IT ON Google Play

Download on the App Store

MatataCode

Matatalab Curriculum Introduction

Curriculum Name	Product	Language	Standards	Number of Lessons	Age	Content Area	Pictures
Activity Cards for Tale-Bot Pro	Tale-Bot Pro	English , Russian	America's "New York State Prekindergarten Foundation for the Common Core" and China's "Guide to Learning and Development of Children Aged 3 to 6"	42	3 to 5	Math, Social Emotional, Social Studies, Science, Art	
Matatalab Lite	Matatalab Lite	English	N/A	16	3 to 5	ELA, Science, Math, Art, Literacy	
Matatalab Learning Station Curriculum	Pro Set	English, Russian, German, Turkish	ISTE, NGSS, CSTA, and Computer Science Network	12	4 to 6	Computer Science, Art	
Matatalab Musician Add-on	Coding Set + Musician Add-on	English, Russian, German, Turkish	NAfME (The National Association for Music Ed ucation), and CSTA	12	4 to 9	Music	
Matatalab Artist Add-on	Coding Set + Artist Add-on	English, Russian, German, Turkish	NCAS (National Core Arts Standards), and CSTA	12	4 to 9	Art	
Coding Activity Cards	Coding Set	English , Russian , German	ISTE, CSTA, Common Core	40	4 to 8	Coding, Math , Art , ELA , Social Studies,Science	
Activity Cards for Musician Add-on	Coding Set + Musician Add-on Set/Pro Set	English , Russian , German	ISTE, CSTA, Common Core	10	4 to 8	Art	
Activity Cards for Artist Add-on	Coding Set + Artist Add-on Set/Pro Set	English , Russian , German	ISTE, CSTA, Common Core	10	4 to 8	Music	
Matatalab Animation Add-on Teacher Guide	Pro Set + Animation Add-on	English	Common Core, and ISTE	16	5 to 9	Computer Science, Music, Social Studies,Art	
Matatalab Sensor Add-on Teacher Guide	Pro Set + Sensor Add-on	English	Common Core, and ISTE	16	5 to 9	Math, Science, Social Studies, ELA	
Matatalab Extracurricular Curriculum	Pro Set	English, Russian, German, Turkish	ISTE, NGSS, CSTA, and Computer Science Network	12	6 to 9	Computer Science, Music, Social Studies,Art	

Curriculum Standards

CSTA ISTE COMMON CORE STATE STANDARDS INITIATIVE PREPARING AMERICA'S STUDENTS FOR COLLEGE & CAREER NEXT GENERATION SCIENCE STANDARDS

Professional Development

With schools today facing numerous complex challenges – from developing students' computational thinking skills, to developing students' 21st century skills, to integrating new technology in the classroom – a professional learning is more needed. In order to help teachers use Matatalab products to face these new challenges well, Matatalab provides a comprehensive professional learning opportunity. Teachers can choose Self-Guided courses, Virtual Training courses, and On-Site workshops according to your own needs. Join our professional development to help you and your students more prepared to this new digital age.



Self-Guided

1. Lite Course
2. Coding/Pro Set Course
3. Advanced Coding



Virtual Training

Level 1: COMPETENCE
Giving teachers the ability to use new tools
Level 2: COMFORT
Building experience and understanding
Level 3: CURRICULUM CONNECTIONS
Ensuring alignment



On-Site Workshop

On-Site professional development lets educators, in groups up to 15, experience first-hand an embedded model of STEM learning.

Matatalab Certified Educator (MCE)



Matatalab Certified Educator (MCE) program proves educators' expertise in using Matatalab technology to teach STEAM subjects.



Collaborate

Children are expected to enhance team awareness by completing tasks as a team.



Confident

Children are expected to enjoy the satisfac-tion of completing tasks.



Create

Innovative competitions combined with creative task-based challenges.



Share

Children are encouraged to share their creative works made in the competition with peers around the world

MWRC

MatataWorld Robotics Competition (MWRC)

Promote children's overall capacities through fun and challenging events

MWRC

MatataWorld Robotics Competition (MWRC) is a global robotics event. In 2020, the MWRC Competition Committee was initiated and established by China, Japan, Singapore, Canada and other countries to promote the development of STEAM education for preschool children around the world and provide a platform for MatataBot enthusiasts to express themselves through the event.

MatataWorld
Robotics Competition








International Judges

China



Feng Gao, Ph.D.

Post-doctoral research fellow at the Future Laboratory, Tsinghua University

Assistant Professor, Peking University

Russia



Mikhail Libkin

Director of ORT (http://www.ort.ru/) in Russia, one of the largest education-al nonprofit organization in the world

Professor in STEAM education

USA



Chad E. Smith, Ph.D.

Associate Professor and Coordinator， Education of the Deaf

Co-founder, TWU Future Classroom Lab

UAE



T.Hessa Al Taniji

Robot Specialist in the Ministry of Education of UAE

Judge of the World Robot Olympiad 2019

Judge of the First Lego League FLL 2019

Singapore



Jane Ching-Kwan, Ph.D.

Leader in Singapore's early childhood education

Ph.D. in Child Development & Family Studies with a specialization in Children and Technology

Finland



Sampo Forsström

Lecturer,
Project Manager,
University of Eastern Finland
Teacher Training School
FCL Ambassador in Finland

Matatalab Case Study

With the help of global teachers, Matatalab coding robots enter into more than 8000 schools and institutions worldwide, bringing joy of hands-on coding and building up computational thinking for the younger ones.

Case Studies

Italy



Alfonsina Cinzia Troisi
Preschool children (4-5 years)
IC E. De Filippo di Sant'Egidio Del Monte Albino
Italy
Tale-Bot Pro



How many kids are in a group

15

How was the Matatalab robot(s) used?

FROM STORYTELLING TO RESPECT FOR THE ENVIRONMENT AND RECYCLING
From reading the book "Like a tree", we develop the idea of environmental education for the survival of ourselves.
We learn to understand that:
trees are living beings;
man is a living being just like a tree;
the tree has behaviors similar to human beings; and they are essential for the life of the human being;
we can get help from TALE BOT PRO to learn to respect trees: WE BUILD A TREE with recycled material: first we EXPLORE THE GARDENS that surround us and the WOODS of our Parco dei Monti Lattari
The NATURAL ENVIRONMENTS THAT SURROUND US, can be reproduced with recycled material present in our section: the FOREST AND OUR COUNTRY, (sheets and pieces of cardboard that we no longer use, newspaper sheets, empty medicine boxes: we recycle the paper that is produced with tree trunks, WE DO NOT WASTE PAPER!).
The trees (firs) have a shape: we learn to distinguish the flat geometric figures (the triangle); WE PROGRAM Tale Bot Pro using the elementary instructions and the microphone card, to collect the triangles scattered randomly on the thematic map of the NUMBERS, let's count them in Italian and in English, WE RECORD our voice to make TALE BOT speak and let's build a fir tree with the triangles made to draw this Bot and then cut out by us children.

What skills did it develop?

Learning outcomes:
It starts the autonomous use of the first basic concepts of instrumental literacy of coding: elementary education, repetition, procedure, bug, debugging;
Learn how to use Tale Bot Pro to draw;
Develop eye-hand skills;
Discriminates the flat geometric figures of the square and the triangle as "half" of the square.
Use the ELEMENTARY INSTRUCTIONS and microphone cards to sort numbers and quantities, counting progressively and regressively up to 5;
compare quantities and numbers up to 5;
it makes associations between numbers and quantities;
it uses the topological concepts ("bigger" and "smaller", "closer" and "farther"), to search for simple shapes placed on a thematic map and create a simple sequence of instructions for the reconstruction of a path.
Learn how to use the programming cards and the microphone card, to retrace different paths.

What worked best and what was challenging?

ADVANTAGES: Tale Bot Pro was an excellent mediator to keep the children's attention on the didactic activity

which they experienced as a "game".
These 4 and 5 year old children, in two hours, easily learned the proposed didactic contents, without ever taking their eyes off the activity or moving away from the group.
This Bot manages to leverage the interests of children, at least initially focusing on their motivations: the spark of interest in their eyes has allowed us teachers to have relaxed and fun times to devote to the learning process.
The interest is then fueled by the wonder when they understand the use of the microphone.For section teachers, thematic maps are particularly usable in section and very suitable for educational content: this has stimulated the purchase request.
DISADVANTAGES: paper programming cards do not have that indentation that allows them to intuitively understand that the instructions must be linked; that same indentation that allows them to understand that the instructions are hooked like the pieces of a puzzle for the passage of information (input / output

How did students respond?

This Bot manages to leverage the interests of children, at least initially focusing on their motivations: the spark of interest in their eyes has allowed us teachers to have relaxed and fun times to devote to the learning process.
The interest is then fueled by the wonder when they understand the use of the microphone.

What is the favorite function for the students?

The recording function. the drawing function. the Interactive Maps. Storytelling (from the book, to the story, to the implementation of thematic maps) to build.







Case Studies

France



Charlotte
Preschool
École Sainte Thérèse Toulouse
France
Tale-Bot Pro



How many kids are in a group
8

How was the Matatalab robot(s) used?
To sump up : in 3 weeks (i received it late and my school has to close due to covid) I had the time to introduce 3 lessons to 3 classes: «Who is tale bot» «Can a bot draw» «A journey to the zoo». It was small group of 8 to 10 so I repeated it 3 times . Each kid had the possibility to manipulate and they worked by team of 2 for each coding : one speculate and found the order of the arrow and the other press the arrows.
I introduced it also to a colleague and to her class and she took the bot at home in order to practice it for January . Her daughter (6 grade) discovers the bot all by herself and was amazed by all the possibilities.

What skills did it develop?
Work together, Problem Solving, Language Observation, Counting skills.

What worked best and what was challenging?
It was challenging for the rest of the class to wait for their turn The zoo and cycle of frog was the top best for them. 8 or 10 students is the maximum if we want all them to watch the map in the right way up.

How did students respond?
They were totally part of it, a lot of sparkle in their eyes, concentrated and focused on the problem solving : use of the arrow to where the bot told them.

Share your comments upon the class using Matatalab
I was impressed by the possibilities of programming and all those maps. Very good idea the command cards . Kids weren't bother at all by the English language, they love hearing the voice of the bot . They found him so cute, for them it became part of the class .When he was on my desk after the lesson and they were persuaded that he was sleeping.

What is the favorite function for the students?
The drawing function, drawing, paper craft, accessories for the both sides of the robot.

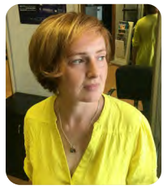
Any others you would like to share
Here is the comments of my colleague who discovered tale a bot : Anne « he is so cute, kids love it and when they custom it they work together and use craft skills »Amandine « so easy to use, I was afraid of coding but it is so simple »Isabelle « Fantastic, when we'll do planting , the cycle of sunflower will be our assessment »





Case Studies

Russia



Bychkova Irina Viktorovna
Preschool
School 1540
Russia
Tale-Bot Pro



How many kids are in a group
23

How was the Matatalab robot(s) used?
With the help of Tale-bot, children learn to program, we make descriptive stories of professions, about how I spent the weekend; we made recipes for salad and other dishes; with the help of a robot, we talked about how to grow microgreens, developed our own instruction cards with tasks; put words out of syllables; "walked" around the zoo;....thanks to the drawing function, they drew paths for the dog to the bowl, the house, talked about what the kitten was doing, for this they drew a map with tasks on an A3 sheet. With the help of a robot artist, they drew a New Year's card (Tale-bot drew balloons on the Christmas tree, children did everything else)

What skills did it develop?
Classes with Tale-bot contribute to the formation of a comprehensive development of the child. Develop memory, attention, perception, thinking, speech, creativity. Develop cognitive interest and technical skills. Develops communication skills and the ability to work in a team.They receive initial programming skills. Children get a lot of fun from working with a robot.

What worked best and what was challenging?
There have been no difficulties so far. In the future, we plan to use other work opportunities.

How did students respond?
The children are delighted!! They didn't even need instructions on how to control the robot



Share your comments upon the class using Matatalab
Classes with Tale-bot make learning more interesting, arouse children's cognitive interest and creative activity， and learn how to work in a team. The initial programming skills are laid. The knowledge gained in the process of work reveals the creative abilities of children and teachers.

What is the favorite function for the students?
The dancing function. The drawing function. The Interactive Maps. Storytelling. The paper craft. The accessories for the both sides of the robot









Case Studies

Estonia



Ene Kruzman,
Svetlana Polkovnikova,
Nutsa Orlik,
Niina Ivanova

Kohtla-Järve Lasteaed Tareke
4-5 years old
Estonia
Tale-Bot Pro

How many kids are in a group

20

How was the Matatalab robot(s) used?

On the eve of Christmas we have included Tale-bot Pro in activities dedicated to Christmas. To do this, we used the robot's drawing function. Adults showed children how to install felt-tip markers on the robot. After that, the children independently installed everything necessary for the robot to be able to draw. When everything was ready, the children, with the help of adults, programmed the robot so that it could draw an image for Joseph and Mary. The image consisted of two lines and a circle. The children knew these geometric shapes and named them with easily. The result is showed on the uploaded photos.

Based on the age of the children, also we have used different maps: shape monsters, fruits and veggie challenge, my five senses, counting game. Since the children of our class native language is Russian and they are learning Estonian, these maps help children in learning Estonian language. And for these activities we have used voice saving function.

What skills did it develop?

observation skills, abstract thinking, logical thinking, logical connection, creativity, divergent thinking, comparison, innovation skills, mathematical skills.

What worked best and what was challenging?

The best is:

- comfortable buttons for kids;
- in manual coding (code function) the color bar allows children to see where the error is encoded and make corrections accordingly;- sound recording function helps in learning other languages;
- large wheels on the robot allow it to be used on different surfaces (that is, a perfectly flat surface is not required for the robot to move);
- emotional feedback that he gives to the child after each performed operation.

How did students respond?

Children very like emotional feedback of Tale-bot Pro and they are happy to take part in activities with him. The robot does not seem difficult for children, so they are happy to learn it on their own.

Share your comments upon the class using Matatalab

The robot is good for use in small subgroups. If there are some Tale-bot Pro in the class, then it is possible to organize competitive activities with children.

What is the favorite function for the students?

The recording function, dancing, drawing.









Case Studies

Belarus



Olga

senior preschool age (5-7 years old)
kindergarten №239, Minsk
Belarus
Tale-Bot Pro



How many kids are in a group

5

How was the Matatalab robot(s) used?

This kit is convenient to use in group and individual lessons. The possibilities of use are unlimited in different classes, which are conducted in accordance with the curriculum. The first steps combine interest and fear (how does this work? Can't I break it?). Now the guys themselves propose routes and topics and require more independence.

What skills did it develop?

When working with a robot, the following are formed: the ability to determine the sequence of the arrangement of objects "one after another", "from left to right" and "from right to left"; transfer the orientation in the surrounding space to a sheet of paper, creating the simplest plans, schemes, and vice versa, moving according to a simple plan, find the place of the object according to the scheme; the ability to determine the position of images on a sheet of paper, based on the following landmarks: "center", "right and left upper corners", "right and left lower corners", "middle of the upper, lower, right and left sides"; navigate the environment in the direction from other objects; moving in a given direction; the ability to solve simple arithmetic problems for addition and subtraction. Spatial directions "from ... to", arbitrariness, premeditation, purposefulness of all mental processes, cognitive interest, as well as logical and mathematical methods of cognition are developing. The use of a robot in this educational activity contributes to the manifestation of the prerequisites of mathematical abilities.

What worked best and what was challenging?

Constant novelties and various stories are bright and interesting in each new lesson. It's great that you can work without special skills. Everything is simple and accessible to everyone. The capabilities of the robot allow you to develop creative imagination and qualitatively master the techniques of algorithmic thinking, the basics of programming. But for a child, all this is an exciting game. Difficulties: Different levels of abilities and training of children;

How did students respond?

Modern children are spoiled by different gadgets, but the robot managed to surprise them. Both the design itself, the set, and the functions and skills of the robot are of keen interest. The desire to help, support, complete tasks and come up with an algorithm is only a small part of what the guys want. Joy, smiles, good mood and a positive attitude to the lesson - you can go on for a long time, describe the bright spectrum overwhelming children Now the pupils are waiting for the robot at each lesson. Other guests now seem too "ordinary" for them

What is the favorite function for the students?

The recording function, dancing, repeat, drawing, Storytelling, paper craft, accessories for the both sides of the robot.

Share your comments upon the class using Matatalab

can be used both for subgroup work and individually. At any stage of the lesson:at the beginning as a surprise moment; in the middle - the practical development of specific educational tasks, and also at the end - as encouragement and reflection.During the game, children are constantly interacting, which contributes to the development of communication (they learn to negotiate and plan the game, distribute roles and functions, take into account the wishes of the players, act in concert, notice difficulties, work in a team, exchange information, help other children, find ways to establish successful social contacts with peers in activities and communication, etc.) The use of an intermediary robot will contribute to the formation of new social roles, the assimilation of the rules of cultural and safe behavior.







Case Studies

Singapore



Virgie Tasico
Kindergarten 1
Skool4kidz
Singapore
Tale-Bot Pro

How many kids are in a group
3-5

How was the Matatalab robot(s) used?
Children were introduced to the newest Matatalab product named Tale-Bot Pro.
They were excited to use the cute little robot as its design and colours are eye-catching and very appealing. Children explored the different colours and icons on each button. They are quite familiar with the directional arrows, the play button in the middle, the delete and the dance button. They were also introduced to the Recording and Repeat button. Children were intrigued by the Coding command light indicators and asked about them and how it works. They were amazed when they saw the lights when we turned it on. It is lightweight and easy to grasp.

What skills did it develop?
It helps to boost children's creativity as they create anything from their imagination and bring these ideas to life.

What worked best and what was challenging?
The colour-coded command cards and Tale-Bot Pro's colour indicators make it easy for children to remember which direction/action to use.
Some children would like to use the command cards, but it is limited to the number of cards provided for each directional arrow.

How did students respond?
Children can transform Tale bot Pro to different designs depending on children's limitless imagination and creativity.

Share your comments upon the class using Matatalab
Children prefer different ways to plan their commands - some like to plan their commands by writing directional arrows on a command strip or papers while some prefer to work on the bot directly.



What is the favorite function for the students?
The recording function.





Case Studies

Russia



Ekaterina Loseva
Kindergarten No. 8 "Skazka" Sergach,
Nizhny Novgorod region
Russia
Matatalab Pro Set





How many kids are in a group

12

How was the Matatalab robot(s) used?

In our kindergarten there are three sets of MATATALAB PRO SET, each is for 4 children. The kids are really looking forward robotics classes, asking what interesting things they will do this day.

On the eve of the Cosmonautics Day I decided to surprise the children and organize a "Space Trip" for them. First, I suggested the children to watch a video letter from Belka - the first dog to enter space. The film told them that the first dogs, Belka and Strelka, successfully flew into space, and after that the first man went into Space and returned safely.

Then we decided to draw space. With the help of diagrams kids easily made an algorithm for MatataBot, inserted a marker and drew stars which they cut out and stuck down to a construction paper with the space background. The background transformed. The kids were so excited! But something else was missing in space, and then we decided to draw a rocket using a scheme of house. The further step was to consider who would fly the rocket and how to make an eliminator in rocket. Children proposed to remove the upper part of the robot, cut out a circle, put the rocket on cosmonaut robot.

Having much fun, children launched the rocket into space with a well-known phrase of first cosmonaut Yuri Gagarin "Let's go!" Using a diagram with motion blocks, a dance block and musical blocks, the rocket set off on a space trip.

The children also wished to travel through Space, but their task was not easy. It was required to choose cosmonaut and spacecraft captain. The captain chose a card with planet image where he would send his cosmonaut, laid out a maze of plastic cubes on the space mat, put a green pin at the start, and a red one at the finish. Then he laid out an algorithm using motion blocks on the control panel and sent his cosmonaut to the planet. Cosmonaut had quite difficult task as well, he put on a spacesuit which was not very comfortable to move in and listened carefully to his commander instructions. When he landed successfully on the planet, teacher took a card with its picture and read some notable facts about it.

At the end of the training we made a conclusion: what interesting things kids had learned, what they liked, if children had any difficulties during the training, if it was hard to be cosmonaut and what you feel while wearing cosmonaut's spacesuit. Then we decided where children would like to go next lesson.

What skills did it develop?

The ability to work in teams and individually, problem solving skills, logical thinking, basic coding skills, carefulness, practical orientation, math skills, communication skills, fine motor skills, friendly co-operation

What worked best and what was challenging?

With great interest, the children made algorithms based on diagrams for drawing and musical composition. The children even had no idea that MatataBot could draw, dance and play music. The most difficult thing was to make an algorithm without using a diagram, as well as building a maze for cosmonaut, since the captain had to decide which way cosmonaut should go. The kid who played the role of cosmonaut found it hard to follow his captain. It required being quite careful and not to make

movements before the captain gave a command. For this type of training to be more successful I decided to use the same mats on other lessons with MATATALAB PRO SET.

How did students respond?

The children were satisfied with their journey. Since they received a video letter from Belka, drew and cut out stars, a rocket which they launched into space, they tried themselves as cosmonauts and captains. Children learned names of planets, how different they can be in color and size, and much more.

Share your comments upon the class using Matatalab

This is a great tool to practice in a game way such important skills as STEAM as well as communication and problem solving. And it all comes with a free screen Matatalab sets which combines with our kindergarten curriculum in great way!





Case Studies

Belarus



Ivanchikova Ksenia
Ostroshizy (Loghoysk region)
Kindergarten: BELARUS
Matatalab Pro Set



How many kids are in a group

4

How was the Matatalab robot(s) used?

We use 2 MATATALAB PRO SET, 4 participants per subgroup. The age of the students is 4-6 years old. The course was created for an academic year and contains 36 lessons, 60 minutes each, with a frequency of 1 time per week.

Each lesson consists of 3 parts: theoretical part, practical part, experimental part, reflection. At the first stage, we cover the topic of the lesson, discuss the children'sexperience on this topic, looking through additional materials on this topic.

In the second stage, children complete practical tasks using flashcards from MATATALAB PRO SET booklets on the topic of the lesson. Before performing the following tasks, children needs some funny physical exercises.

In the experimental part, the students apply the knowledge gained in
additional tasks proposed by the teacher.

At last, students have few minutes for self practice according their desires.

In the final part of the lesson, children express their emotions using emoticons, which they independently choose from the basket and attach on a magnetic board under their own name. Next, we discuss the knowledge gained in the lesson and answer the questions that have arisen.

What skills did it develop?

During the training, students learned to work in teams, analyze various
situations and quickly find the right solution.

Children learned to understand instructions, work according to a plan, began to better navigate in space.

Students got acquainted with the basic algorithmic constructions (following, repetition, condition), the conception of ANGLE and the properties of different geometrical figures.

How did students respond?

We had a limited time to test everything, but the kids really liked this way of working and how matata did everything.

What worked best and what was challenging?

Thanks to the attractive set-appearance of the MATATALAB PRO SET, children were constantly passionate about their studies. Sufficient amount of teaching material attached to the kit. The set provides a lot of opportunities for classes on various topics. It is grate that no needs in computers.

It was difficult to put things in order in the box, the arrangement of programming blocks in the box seemed to me not convenient enough, irrational. I had to come up with my own ways of organizing to quickly find block.teachers were convinced that the children couldsolve these assignments in their group.

How did students respond?

Throughout the course, the children showed great interest in the classes, came up with their own projects and implemented them at the end of each part of the training course.

Share your comments upon the class using Matatalab

I find it a good advantage that it is possible to organize group activities with a large number of children using a small number of sets. And also high quality of the manufacture of the kit. The set will work for a long time.

Of course, it's great that there is no need for computers.

Teacher can perfectly combine physical activity, mental and creative work in accordance with the principles of STEAM education.

Recommendation: to come up with a more convenient box for storing parts, which could be used in the lesson as an organizer, and not transfer blocks to other containers.

Any others you would like to share

We are planning to launch classes for an older group of children using Scratch. We would like to take part in competitions, as well as organize an exhibition of matata-drawings.





Case Studies

Estonia



**Ene Kruzman,
Svetlana Polkovnikova,
Nutsa Orlik,
Niina Ivanova**

Kohtla-Järve Lasteaed Tareke
4-5 years old
Estonia
Matatalab Pro Set
Matatalab Lite

How many kids are in a group

20

How was the Matatalab robot(s) used?

Matatalab Robots is included in integrated activities in mathematics (counting and geometric shapes), drawing, orientation in space and using every week. For thematic activities children with help of adults prepare a mat and a suit for the robot, which makes the lesson more interesting and varied for children.

Since children are small, they do not create separate melodies. But children really like to include musical moments in the activity.

Children also like to draw with a robot. In the spring, children painted birdhouses for birds using MatataLab.

What skills did it develop?

observation skills, abstract thinking, logical thinking, logical connection, creativity, divergent thinking, comparison, innovation skills, mathematical skills

What worked best and what was challenging?

Challenging:

- the trajectory of the robot's movement deteriorates over time and it goes to the side. This flaw interferes with drawing activities since the lines do not connect and the drawing does not work.
- small robot wheels require a perfectly flat surface. Otherwise the robot does not reach the desired point or stands still.
- there are too small discernible images on music chips for programming. It makes it difficult for young children to differ chips from each other.

The best is:

- the robot is separate from the control panel. This allows the robot to move in any direction and use it in different activities.
- the shape of the robot allows you to easily make different suits for it.

How did students respond?

Children are always happy to take part in activities with a MatataLab.

Share your comments upon the class using Matatalab

Children, regardless of their character traits, can demonstrate their skills and knowledge. This helps them open up. Children get better math skills.





Case Studies

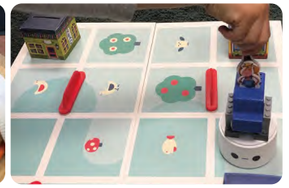
USA



Judy Quintero

Pre-K Pre-Code — Unplugged computational thinking for preschoolers
U.S.
Preschool
Matatalab Coding Set





How many kids are in a group

4

How was the Matatalab robot(s) used?

We like to do "mash-ups", combining the versatile Matatalab Coding Set with well-known stories and games. In this lesson, we paired "Mattie" with a game called Pick Me Up, Piggy! Children transported 4 different farm animals to different locations in the community (the library, pizza parlor, paint store, and dentist). Upon arrival, an animal was dropped through the slot on top of the building, thus being hidden from sight. Each child came up with a story, explaining why their animal was visiting the place where they were taken—that made it easier to remember where each one was. After all animals were delivered, children then had to remember where each animal was and code Mattie to pick it up!

What skills did it develop?

Collaboration, memory, small-motor skills, language/communication, sequencing, directional skills, debugging, parameters, planning, estimating, counting, decomposition, cause and effect, problem-solving, story telling, confidence....

What worked best and what was challenging?

Children had fun coming up with stories explaining why each animal was visiting the place where they were taken, in order to more easily remember where they were. The greatest challenge was estimating how many times to move forward or backward, on the game board, which was not a board designed for Matatalab. We also played the game on the Matatalab board, which made it much easier to know which parameter coding tiles to use!



How did students respond?

Children were so excited and proud when Mattie arrived where they intended.

Share your comments upon the class using Matatalab

Matatalab Robot is a very effective and versatile way to teach computational thinking to young children. There are a million ways to integrate coding instruction into the preschool curriculum using a screen-free robot like Matatalab!

Case Studies

Estonia



Ene Kruzman

KOHTLA-JÄRVE KINDERGARTEN TAREKE
ESTONIA
Pre-school
Matatalab Pro Set
Musician add-on, Artist add-on





How many kids are in a group

150

How was the Matatalab robot(s) used?

Below is our action plan for the next school year During the school year (01.09.2020-31.08.2021) we use the robot in learning and play activities according to the kindergarten's study and action plan. Topics of the kindergarten action plan in the 2020/2021 academic year:

• September: "Autumn is here"; • October: "Waste and rubbish"; • November: "Safe traffic"; • December: "The Joys of Winter"; • January: "Health and well-being", • February: "Estonia - mmu homeland"; • March: "Theater Month"; • April: "Spring is here"; • May: "Water"; • June: "Summer is here"; • July: "Sea and Coast"; • August: "Biodiversity and Nature"

After that, we use the robot in external activities:

We participate in the international Erasmus + projects “ECO - us support!”, “Healthy eating and movement for a better quality of life”, “Découvrir et partager nos propres cultures pour créer ensemble notre culture Européenne”. We take part in eTwinning projects: finding partners, creating and running a joint learning project. We participate in the "Green School" program.

We carry out individual activities with children, including groups with children with special needs. September-October 2020: Conducting CODE WEEK activities in kindergarten and participating in events outside kindergarten. Workshops for teachers: learning to use new robotics devices, introducing them and introducing them to other kindergarten teachers in practical workshops. Workshops for children.

November: Celebrating Father's Day with a robot.

December: “Robots can dance and play music” (Children make beautiful Christmas clothes for robots, use Christmas music, create dances for robots and dance with robots). Cooperation with other child care institutions.

November-December: we participate in Robotex (both as a participant and as a workshop).

January: sports competition "Robot going through the maze". Cooperation with other child care institutions.

February: “Traveling of robots across Estonia” (conducting a quiz, drawing Estonian symbols, etc.). Cooperation with other child care institutions.

March: “Telling fairy tales with robots” (costume preparation). Cooperation with other child care institutions. "Costume Exhibition".

April: Open learning activities “The robot is our helper” (each teacher shows an interesting and useful learning activity).

May: Creative drawing exhibition "From nature through the eyes of robots". Cooperation with other child care institutions.

September 2020 - May 2021: We share our experiences on Facebook pages. Creating a blog “Robotics” on the kindergarten website. Creating your own book "Robotics in kindergarten". Improving the field of kindergarten curriculum “Robotics”. Further development of educational activities in the field of robotics. Videos and / or images of the activities, trainings and workshops will be produced and covered in the media.

What skills did it develop?

Integrated activities: Robotics, language and speech, me and the environment, mathematics, music, Estonian as a second language, movement, art.

The aim is to support the areas in the curriculum (general skills, language and speech, mathematics, me and the environment, movement, music, art, robotics).

Integrating robotics with other areas of learning and education:

General skills Using robotics equipment:

1) the child develops cooperation and problem-solving skills, the ability to perceive oneself and partners, to consider others, to explain one's views;

2) the child improves perception (visual, auditory, spatial, temporal, kinesthetic perception), memory (both verbal and non-verbal memory, auditory and visual memory) and attention (intentional attention, ability to concentrate, switching skills), fine motor skills;

3) the child learns to communicate, adopts generally accepted practices in society and proceeds from ethical beliefs;

4) the child's thinking develops (logical thinking, analysis and synthesis skills, comparison, consequence of finding connections, inferring, creating connections between everyday life and different subject areas), understanding the rules of behavior, motivation to learn, to acquire new knowledge;

5) the child learns to share and wait, to clean up after himself. Me and the environment

Using robotics equipment for a child:

1) understands and feels the surrounding world as a whole;

2) has an idea of himself or herself and the roles of himself or herself and others in the living environment;

3) values both Estonian cultural traditions and the cultural traditions of his or her nation;

4) values his or her own health and the health of others and tries to behave healthily and safely;

5) values the environmentally friendly and environmentally friendly way of thinking;

6) notices phenomena and changes in nature Language and speech

Using robotics equipment:

1) the child expresses himself / herself intelligibly, is able to convey his or her thoughts and intentions;

2) the child develops reading and writing skills, storytelling and description skills;

3) the child acquires a new vocabulary.

Mathematics

1) dealing with robotics supports the concepts of: quantities, counting and numbers, calculation, sizes and measurement, sorting, geometric shapes, days of the week, but, seasons of learning; Using robotics equipment:

2) the ability to orientate in space and on paper, develops in a defined area;

3) the ability to find, analyze and explain logical connections develops.

Art, Music

Using robotics equipment:

1) the child enjoys creative self-expression;

2) the child can compose his or her favorite music;

3) the child is able to create new simple pieces of music and drawings.

Movement

Using robotics equipment:

1) develops the child's attention and accuracy;

2) the child wants to move and enjoys the movement;

3) is able to make efforts in the name of purposeful activities;

4) actively works alone and in a group; Estonian as a second language

Using robotics equipment for a child:

1) is interested in the Estonian language and culture;

2) wishes and dares to communicate in Estonian with both peers and adults;

3) recognizes and understands Estonian words and simpler expressions;

4) uses simpler Estonian words and expressions in everyday communication.

What worked best and what was challenging?

MatataLab Pro set, because there are currently three sets of MatataLab sets in kindergarten, but practice has shown that our kindergarten teachers really like MatataLab and at least three sets of groups are needed to carry out teaching activities properly. But in kindergarten, robotics devices are used by 8 groups. With the help of MatataLab, it is possible to diversify learning activities. In Matatalab, children learn programming through playful and manual activities. Children can program the robot to draw various graphic elements. Kids can compose their favorite music or create something completely new.

How did students respond?

MatataLab have a positive effect on teaching and guiding children, they motivate children:

provide a good opportunity for exploration in a learning environment. Robotic gadgets - is an exciting learning opportunity where the child is in an active role.

The use of digital tools supports and activates children, arouses children 's interest and provides an opportunity to diversify the teacher's work and improve the teaching of the subject.

Children like that the robot can draw and play music.

Share your comments upon the class using Matatalab

Matatalab is suitable for use by preschoolers. Matatalab is a learning tool that makes the learning process exciting; is compact and easy to use; a big bonus is the guides and teacher materials / lesson plans that come with the product. Before the teacher starts using Matatalab in class, he should play with it himself and test all the instructions to understand exactly how the robot moves and how to place the blocks on the base.

Teacher materials should also be explored to make it clear how and where to start with children. Matatalabi can be linked to all subject areas of pre - primary education (me and the environment, language and speech, mathematics, art, music. definitely recommend that colleagues try it and use it in their studies. As the whole set is well packaged, it is very convenient to use. The tool is easy to take out and reassemble later. However, the tool does not require much space to move around so it can be used freely for desktop activities.





Case Studies

Singapore



TRICIA TOH
LITTLE TREE HOUSE LLP
Singapore
PRE SCHOOL
Matatalab Coding Set





How many kids are in a group

4

How was the Matatalab robot(s) used?

The Matatalab robot is used during lesson time, as part of a lesson curriculum on AROUND THE WORLD. Teachers guide children in the lesson, first explaining and teaching children the different type of landscapes and geographical phenomenon of the unique places in the world such as Valley, Beach, River, Mountain. After children gain an understanding of the various geography, teacher then introduce robot and incorporate a story. Teachers then ask the children to go to different landscapes according to the character (Sally) - and how they plan to get to the different places in the world. For example, it starts with Sally taking a walk to the beach from home, and then she saw an island, she then has to "swim" to the island. Children will need to tell the teacher how to get to the island as there are obstacles such as "sharks" and "big boats" in the way. Children will brain-storm in their little groups (with the teacher's facilitation and questions asked) how to go around the obstacles to get to their destination. They will collectively give instructions (or take turns to give next steps) such as "Need to turn right" "Need to turn left" "Need to go 2 steps forward" Teachers will not give them the answer and allow them to explore according to their instructions, and finally, ask them "Is this where Sally supposed to go?" Children will then discuss and evaluate their next steps to resolve the problem (Sally is lost!)

What skills did it develop?

Teamwork, Critical Thinking, Communication, Logical step

What worked best and what was challenging?

Storytelling and giving the context so children are more engaged. Having children overcome obstacles and identifying the shortest possible alternative.

How did students respond?

Children are very engaged and excited about the activity. They are all eager to chip in their views, and have to take turns patiently to share their opinions.

Share your comments upon the class using Matatalab

The classroom activity is now livened up with an alternative activity which can cultivate teamwork and promote virtues such as patience. Teachers have to be well equipped with classroom management and asking the right questions to trigger response in children. The teacher must also know how to modify the challeng-es to make it relevant, interesting yet sufficiently challenging for children to learn.



Case Studies

Macau



Ally Loi
Project: Pui Ching Middle School
Kindergarten Dept.
Grade K2 - K 3
Matatalab Pro Set





How many kids are in a group

4

How was the Matatalab robot(s) used?

Participants are kindergarten students came from Macau famous Pui Ching Middle School. They joined the class as the extra-curricular activities. There are total 20 students in on class, students are separated into small group which is four students in each in order to participate the activities every class. In the beginning of every class, I will share them new story with students to show them the new symbols on the blocks, students are excited to share the story with their parents after class and even teach their parents to play with them.

What skills did it develop?

Firstly, students are learning how to cooperate with their classmate, as they are all around 4 to 5 years old. They also learn how to solve the problem step by step by moving the robots, they learnt basic coding skill and problem-solving skill.

What worked best and what was challenging?

Students are engaged during the entire period, they love the Matatalab and want to play it well, it is an exciting class. The challenging part is to control the class order during the group activities.

How did students respond?

There will be 20- 25 minutes for students to work and play with their classmate. In each case, students did not want to stop at the end of the session. We felt their enthusiasm during the class. Students were very excited and emotionally involved while the first time show the musical coding.

Share your comments upon the class using Matatalab

I am very enthusiastic about Matatalab learning tools, as it is a block-based , screenless and tangible programming tool that allows students to move the robot through a different kind of map. it is very friendly to introduce to kindergarten and lower grade students; they enjoyed the moment to create different ways to solve the problems. Nothing is important to build up students' interest.





Case Studies

Canada



Sarah Pryor
K-2nd Grades
Allenby PS
Canada
Matatalab Coding Set



How many kids are in a group

2-4

How was the Matatalab robot(s) used?

An inspired way to engage students with coding is to use characters and have them code a story. Our class used one common character whose name in French is Vert Ver (=Green Worm). Students wrote a simple story in a notebook; created a route that would be coded to match their story; recited their story while the Matatabot runs through the code and the teacher records the scene.

As you can see, there are many layers to working through this challenge. We had a mini-lesson about the elements of a story, ie. a story has a beginning, middle, end; it has at least one character and it has at least one setting (where and when the story takes place). After writing a very short story (3-5 sentences) with my help, students used a sticky note to write the title of their story and any places mentioned in their story like 'at school'. When it was their turn to code their story, students placed their sticky notes on the board and compiled the coding tiles. A few students got their code - instructions- correct on their first attempt but most students had to change their code and try again to read while the Matatabot moved along. After that, I recorded the student reading their story as the Matatabot travelled from beginning to end.

What skills did it develop?

Students told me that they had never written a story before and had never coded a story either. They learned to pause and think as they placed the coding tiles to follow the path they chose. Many saw that they had to review their plan and come back to code after they had done a bit more thinking. Students learned that a bit of struggle for s okay and that success can be tricky but t s definitely possible.

What worked best and what was challenging?

Students were very motivated to write once we had made a character together and they had seen my demonstration. That students could write only to recite their story and not to have all of the spelling mistakes corrected is also a motivator: let students read their own creative writing. It was good to have short stories because we quickly saw that the tiles could only allow so much movement on the board, ie. only four of each blue tile limited the length of a story.

How did students respond?

Students were thrilled to see the code work as planned. They clapped for each other's work.

Share your comments upon the class using Matatalab

How can we explore having more tiles in the kit? We all feel that more tiles would be helpful.
We will continue to code and explore the functions of the other tiles.







Case Studies

Belgium



Kevin Bostoen
eduCentrum vzw Fyxxi
Kindergarten: second - third grade
Matatalab Pro Set





How many kids are in a group

4

How was the Matatalab robot(s) used?

On Monday the 23rd of November we taught a workshop at “The Four Gardens”, a primary school in Oude-naarde, Belgium. The workshop took place in the afternoon, with children of the second and third year of kindergarten (4 - 5 years old). There were 22 children in total for three supervisors, which meant that each supervisor had seven to eight children in their group. Each group got to know a few different tools, among which Matatalab, which they went through on a rotation scheme. Thus, each group had about 20 minutes to get to know Matatalab. Since there were two sets available per group, the children got to work with Matata in small groups of 3 to 4 children. We did not use the supplied booklet, but used assignments in which the children were allowed to place the green and red flags on the map themselves. The children were already familiar with this way of working from earlier programming exercises in the classroom. The children gave each other an assignment per group, by placing the green and red flags on the map. We soon realised that the transfer from the robot’s desired movement to the tiles on the panel seemed a bit too difficult. We therefore introduced an extra step, where the children first placed the tiles the robot had to perform on the map (e.g. if the robot had to go one step forward on the map, we placed the right tile on the map on that spot).
The children were able to do this task easily. Then, we explained how to place the tiles onto the panel, starting with the first tile they had placed, then the second and so on. Of course, we were a bit limited in time to discover everything about Matata, but with a little more time, the childrenwould have been able to follow the exercises from the booklet as well.

What skills did it develop?

Language acquisition. Innovative thinking. Attention to detail. Patience. Communication.

How did students respond?

We had a limited time to test everything, but the kids really liked this way of working and how matata did everything.

Share your comments upon the class using Matatalab

TEach of the two kindergarten teachers of the class were also able to work with Matata for 20 minutes with their group. They had the following findings about Matata:
- They thought it was a pity that there were a limited amount of moving tiles (forward, backward, left and right) in the box. Because the children placed the tiles on the mat first, we sometimes had too few forward tiles. Once the children understood this process, they could make the transfer to using the numberblocks.
- The lighthouse and the car certainly appealed to the children's imagination.
- The booklets are definitely an added value. After the children had becomeacquainted with Matata, the teachers were convinced that the children couldsolve these assignments in their group.
- The additional music and drawing tiles are nice extras for older children, but drawing in particular proved a bittoo difficult for this class.

Any others you would like to share

When I think back to the workshop, the children really liked how matalab was controlled from the lighthouse and moved over the map. The puppet in the cart and the lighthouse was also a wow-efffect for them. The teachers found it a pleasant tool to get to know.





Case Studies

USA



April Blackburn
Grades K-2
Summer Adventure Camp
USA
Matatalab Coding Set





How many kids are in a group
4

How was the Matatalab robot(s) used?
For our Summer Camp, we have a STEM/Makerspace Lab and we are wanting to incorporate the use of robots in our lab. We don't just want our kids to know how to use robots, we want them to figure out the purpose of the robot that was created for them to work with. We combined the Matatalab Coding Set and a lesson about habitats. In this lesson, the children had to program their Matatalab Robot to arrive at three habitat locations (grassland, forest, and desert) within one program they created. Upon arrival, they used a flag to mark that their robot reached that habitat.

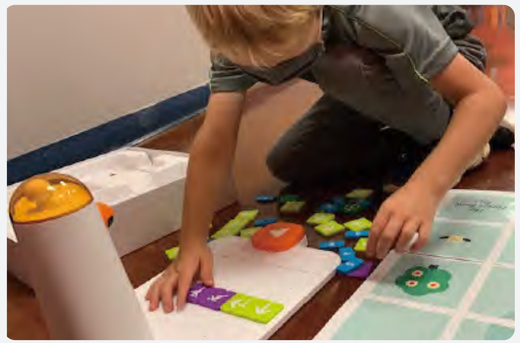
What skills did it develop?
Coding, teamwork, collaboration, critical thinking, following directions, small-motor skills, sequencing, directional skills, planning, estimating, counting, cause and effect, and problem-solving

What worked best and what was challenging?
The children had fun learning how to program the Matatalab robots. They had not worked with robots before so it was a fun experience to watch them experience it for the first time. The greatest challenge was teaching the smaller students how to "plan" their program for where the robot would stop and go.

How did students respond?
The children never gave up and even helped each other when they got stuck and weren't sure what was wrong with their code or program they entered. It really helped with their collaboration and communication skills.

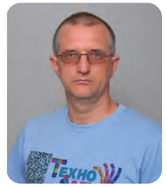
Share your comments upon the class using Matatalab
The Matatalab Robot is a very fun and adaptable way to teach young children the use of coding, programming, and robotics. I can now think of endless ways this can be used in the classroom or for teaching young children who have interest in robotics and coding.





Case Studies

Ukraine



Vladyslav Kushnirov
STEAM-education Studio "Technolab"
Ukraine
Primary school
Matatalab Coding Set
Musician add-on, Artist add-on





How many kids are in a group
4

How was the Matatalab robot(s) used?
For the primary school, an important element of learning is the study of the outside world.
We offer a set “4 Seasons ” for Integrated training, which consists of a special field and a set of cards.
The field is designed to work with two Matatalab Coding Set or Pro Set simultaneously.
The set also contains 12 cards with images associated with different seasons (3 cards per season).
You can also create your own cards for your own stories.
As an example you can play the game "Seasons".
Two teams start from different corners of the field, alternately pulling out the cards with the seasons. After receiving the card, the team must to code a program for Matatabot to reach the season indicated on the card.
The team that will live the first "fully" year wins.
In the case of a "meeting" of robots in a particular image, the robot that got there second must perform some additional action (dance, melody, etc.).
You can also use the cards to help children remember the names of months. The barriers can additionally be used in the field to complicate programming.
If you use Matatalab Pro Set, you also can code some melodies due to season or drawing some shapes.

What skills did it develop?
knowledge of the outside world, teamwork, storytelling

What worked best and what was challenging?
The best time for kids was memorizing the theme "Seasons". It was difficult to achieve teamwork from two teams at once

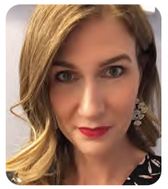
How did students respond?
Competition between teams allows one team to account for the mistakes of another

Share your comments upon the class using Matatalab
Please, give more freadom for children :)



Case Studies

Canada



Erica Phillips
Sir Charles Tupper School
Canada
Grade 1
Matatalab Coding Set



How many kids are in a group
4

How was the Matatalab robot(s) used?
This was a new to us tool for coding in the classroom. We did intro activities using commands to direct students around the room using the floor tiles. We then talked about how MatataLab uses coding blocks that read left to right top to bottom like you would read a book. In groups of two-three students choose a flag and placed it on the map provided. They then figured out the steps (testing as they went) to get the robot to the flag using the commands forward, turn right, turn left, even backwards! Students were very excited when they were successful at completing the challenge. They then discussed other ways to get from point a to point b. When three student flags were on the map they had to problem solve their way around the map without crossing into someone's flag. Students really likes how the blocks read like a book as that supported something that they are being taught in literacy. Some students started creating stories to go with where they were on the map and where they were going, supporting language development and oral communication. Each student had their own turn but also watched and could support each other when needed.

What skills did it develop?
Communication, problem solving, collaboration.

What worked best and what was challenging?
What worked best was that the blocks read like a book, left to right, top to bottom. Other coding tools that we have used read vertically and that is harder for the students to understand. Student could easily manipulate the pieces and use the board and planning space. Challenging is once they turn they have a hard time understanding move forward is still arrow pointed up. To support this we would have the students stand up and physically turn and move so they could understand the moving forward.

How did students respond?
Students absolutely loved MatataLab. The first two times that we used it in our classroom it was borrowed from the Department of Education. After the second time with the device in our room and the kids love of using it I then ordered two pro sets for our school so that we have access to them always.

Share your comments upon the class using Matatalab
This is definitely not a whole class activity and I believe small groups 2-4 are optimal with it so in our classroom we use it as one of our centres. This way students are engaged using many tools and then rotate through the centres eventually getting to all of them. Recommendation: to come up with a more convenient box for storing parts, which could be used in the lesson as an organizer, and not transfer blocks to other containers.

Any others you would like to share

Now that the Pro Sets have arrived I am excited to have the Grade one students start exploring with the music add-on and the artist add-on. Can't wait to see what these students will create with purpose and passion!.





Case Studies

Colombia





Laura Coll & Héctor
1st grade (6 years old)
Gimnasio Moderno
Colombia
Matatalab Coding Set、Musician add-on
Artist add-on、Sensor add-on



How many kids are in a group

25

How was the Matatalab robot(s) used?

Kids loved Matata in class. Robots were used to introduce our students to computational thinking. Gimnasio Moderno used to introduce students to computational thinking in 1st grade: off-code programming and visuospatial activities. Otherwise, using Matatalab's products we could introduce them in a funnier, and more interactive way. Using the geography mat, we have taught them the importance to understand the order of each sequence (script). After that, we made some emphasis about how they could use different techniques to organize their ideas to know where they are located, in order to move Matata to the right position (according to the challenge purposed). Besides, we used all Matata's products we have with our teacher mates.

Most of all, we used the Musician add-on and the Artist add-on with teachers who are teaching these subjects. ICT teachers were the responsible to teach them, in order to understand all their functionalities, and understand how they could use these products into their classes.

What skills did it develop?

Among others, our skills related to Computational Thinking topics were: S1. Organize information to solve small problems in the class. S2. Pass different computational and technological challenges using the critical thinking routines.

What worked best and what was challenging?

BEST

Having a touchable coding interface improves a lot the sequence student's script comprehension Command colors to differentiate between each add-on pack Icons to identify the different kind of coding concepts (it is really easy to teach how it works a loop, or even a function, concepts which may be so hard to understand for kids) The mat (not the material used to make it): the idea to use mats to teach ANY SUBJECT teachers want to teach

CHALLENGING

Differentiate command blocks (Could it improve if all the movement commands were made with different colors, according to their movement?)

Organize a group of kids to work with just a Matatalab kit.

Keep the mat save (after some uses in class, corners start breaking them). The plastic one (which come included with Matata sensor pack) was excellent: material, measure, etc. The other one, we had some troubles to keep the robot forward, because there were some "holes" between each picture.

How did students respond?

The best part to teach students with Matatalab was watching their faces, after they reached every challenge purposed in class, even when these challenges were really easy to solve. Therefore, teaching them through the such powerful of their emotions and feelings probably it be the best way to engage further their deeper acknowledgements with their learnings.

Share your comments upon the class using Matatalab

After the class using Matatalab, students asked us when we are going to use them again. Probably, we will use them next year, to work not just computational thinking, or ICT topics. With the rest of ICT teachers, we are thinking about the possibility to use them to introduce the first steps in each subject or, even we are thinking about the chance to make some groups to bring teams to the MWRCMatataWorld Robotics Competition.





Case Studies

Israel



Shalhevet Zakai
First grade
gordon petach tikva
Israel
Matatalab Coding Set
Matatalab Pro Set



How many kids are in a group
5-6

How was the Matatalab robot(s) used?
I used the robot as immigrants that immgrate from one country to another. Some robots had more diffculitites than other robot. I made it on the base of Immigration Week.
During the week the young students learned and explored different countries from which they came immi-grants to Israel, and finally as a summary and happy record activity the students successfully coped and helped the ascend. The students planned for the "immigrants" robots an ascension route to Israel from their country of origin, this taking into account the obstacles those who are facing them and wanting to reach quickly and safely to the collected destination.
Personal experience, experience and enjoyment are the milestones that lead us to learning, understanding and implementation and experience true success.

What skills did it develop?
The ability to plan, to solve problems, organize, working in a group, connection between two different subjects learned at school.

What worked best and what was challenging?
My biggest challange was to plan the lesson ahead: material, plan etctera.
The fact that the pupils could work with the robot eventhough it was thier first try with the robots.

How did students respond?
The pupils were excited they liked the task. They asked for more lessons like the one they had.

Share your comments upon the class using Matatalab
Wow....
The robots match their age.
The robots are friendly to use.
On the other hand it can varestile of usage.
You can challange the pupils by its level.

What is the favorite function for the students?
The dancin g function, The accessories for the both sides of the robot.







Case Studies

Australia



Karl Easton
Kellyville Ridge Public School
Australia
Grade 1
Matatalab Coding Set



How many kids are in a group
20

How was the Matatalab robot(s) used?
The students followed the Challenges within the books that came with the kit. We used all 3 activity books. We had x4 kits. So small groups of 4 to 5 worked on a table with a kit. Classroom teacher and myself rotated through thegroups to assist where needed. Matata Lab was a good natural progression from an initial intro to coding andcomputational principles with Bee Bots. Students had also done some 'Unplugged Coding ' with me. Students had 1x 50 min lesson a week for 5 weeks. Term was 10 weeks. First half of Term was Unplugged Coding and Bee Bots. We also adapted the Matatalab kit for simple maths operations. (see attatched pic 1B). Milk bottle lids of variouscolours had either a multiplication, addition or subtraction sign placed on them. They acted as markers that could beplaced on the board. We created ten additional white lids with the numbers 1 to 10 on them. The code then needed to be written to visit the correct milk bottle lids to get the correct answer.

What skills did it develop?
Sequencing. Problem Solving. Pattern recognition. Understanding basic coding language such as Repeat and Loops. Writing and reading Algorithms.

What worked best and what was challenging?
Students understood the basic principles of finding the correct 'tile' and then placing it in the correct order. In each group of 4 or 5 we would get the students to take turns being the "banker" & the "code master".
The bankers role was to look after the tiles and keep them in order. The banker initially would lay out all the tiles in an array that made it easy to access the tile needed by the code master. The code master would ideally ask the banker for the tile they needed. We then tweaked this so a template was produced for the banker to simply place the tiles on. (see attached pic 1B & 6). Challenge Book 3. This book caught a few students out - who hadn't mastered the skill of using the Repeat blocks or Loops.

How did students respond?
Enthusiastic. Responsive. We had a review session at the end of each lesson. In this review session, students had their own min white boards. Teacher would ask questions and present the question on the SMART board or sometimes just verbalise a True or False question. Questions mainly took the format of pictorial in nature due to language difficulties of Kindergarten.

Share your comments upon the class using Matatalab
The product has merit. Simple to operate and intuitive design saw children pick up on what to do very quickly.

Any others you would like to share
Now that the Pro Sets have arrived I am excited to have the Grade one studentsstart exploring with the music add-on and the artist add-on. Can't wait to seewhat these students will create with purpose and passion!







Case Studies

Hong Kong



Wong Chun Wai
Primary 1-3
Hoi Pa Street Government Primary School
Hong Kong
Matatalab Pro Set



How many kids are in a group
2-3

How was the Matatalab robot(s) used?
convenient for teachers to prepare classes with just a MATATA BOX for each group.
In our school, students could join Matatalab course during their extracurricular activity period. They were first very attracted with thebright colour design. The course started with introducing the basic elements, e.g. MatataBot, command tower. In the beginning, theyfollowed teachers' instruction, placed two flags on the map. Then, theyhad a mission, found out the steps for robot to reach the destination by placing coding blocks. Students used trial and error, placed any Matata blocks on the control surface. To figure out the best solutions, they would do a quick evaluation and revised the plan if they made any mistakes. In order to motivate students, we held a competition. Groups got one pointafter finishing the mission on time.
Also, the class could definitely cater to learner's diversity. Low ability students were considered: teacher provided extra blocks (hints, such as blocks) to help them complete the challenges. High ability students could challenge themselves to figure out the shortest way or alternate ways to complete the route. Throughout the course, students have learnt basic coding language, which was a good preparation for learning advanced coding programme (e.g. scratch, microbit, app inventor.)

What skills did it develop?
Collaboration, Problem-solving, Coding

What worked best and what was challenging?
Matatalab helps junior students to build a basic foundation in coding. Meanwhile, it enhances their knowledge in different subjects which make it become a great teaching tools. For example, students can apply 'Matatalab Artist Add-On' and draw various shapes. That enhances their geometry knowledge (Mathematics), e.g. internal angles of a square, numbers of sides in hexagon, characteristics of parallelogram.

How did students respond?
Students felt super excited on unboxing new sets of blocks. Throughout the lessons, they kept trying to solve problems. Once they completed the mission, they had a big smile on their faces. They got a lot of satisfaction from Matata.

Share your comments upon the class using Matatalab.
Matatalab is a very great STEM tool for our students. They have learnt to enjoy the process of problem solving, sharing ideas within groups. This helps Teachers create an effective lesson. Last year, we also included Matatalab in STEM FUN DAY, higher grade students tried to use Matata to complete some missions. They found it interesting too!





Case Studies

Portugal



Liliana Marisa da Costa Fernandes
first to fourth grade
Agrupamento de Escolas de Alberto Sampaio
Portugal
Matatalab Coding Set



How many kids are in a group

an average of 18 per group, some classes have 25 students, other has 15.

How was the Matatalab robot(s) used?

MatataLab was used in Robotics' classes, with groups of 1st and 2nd grade. It was used to trans computational thinking skills with students, articulating mostly with Maths tasks.

In 3rd and 4th grade classes, it was used in English classes, in order to consolidate knowledge and train different sentence structures. Students got familiar with the robot and then used it to train vocabulary skills and develop different abilities in Computational thinking, through the development of pedagogical projects. Students are developing two different projects, "Back to the Moon", after Tintin's adventures, and "Around the World in Eight Chapters", after Jules Verne's book. In this projects students cover different items of the curriculum, and they added MatataLab to improve their projects. In the first one they designed a game, using 2 dice and the robot to go through the Solar system and learn more about it. In the second one they are discovering different countries around the globe, traveling through a map with our little friend. Students revealed increasing motivation to acquire competences and learn concepts, with the robot, which is a great benefit for them. Both projects were presented at Science on Stage Portugal festival, and "Around the World in Eight Chapters" project was selected to represent Portugal in Science on Stage Europe festival, where we'll share ideas using MatataLab.

In English classes, 3rd and 4th grade students are developing ideas, after the "Colour Monster" book, which can be shared later.

What skills did it develop?

The skills most developed were related to Computational Thinking, analysis, abstraction, automation and debugging, which can be transposed to every learning area. It also contributed to develop communication competences, students' critical thinking, collaboration spirit and creativity. All these competences will be essential for the next century future jobs.

What worked best and what was challenging?

The most challenging was to create routines to use the robot, as we have large classes, a group of 4 students per robot is the ideal average. Otherwise everything went very well, students got familiarised with the tool, as it is very intuitive, and started developing ideas and collaborating with eachother in planning different mats.

How did students respond?

Students were very responsive and motivated.

Share your comments upon the class using Matatalab.

I believe this is an awesome tool to introduce offline coding and teach Computational Thinking essentials to students. Afterwards it is a great tool for students to use in an autonomous way, developing their own projects and ideas, either to present new content to colleagues or to consolidate knowledge.





Case Studies

Korea



Yuri Park
Seoul Namu Primary School
Republic of Korea

Grade 1-4
Matatalab Pro Set, Sensor add-on,
Animation add-on



How many kids are in a group
4

How was the Matatalab robot(s) used?
Matatalab is an excellent robot for coding classes especially for the lower grades of elementary school. Also it is good for learning the basic concept of coding, writing the code by yourself. Children can code and move the robot by theirselves and check the result with their eyes. It was very useful as a coding robot for physical computing.

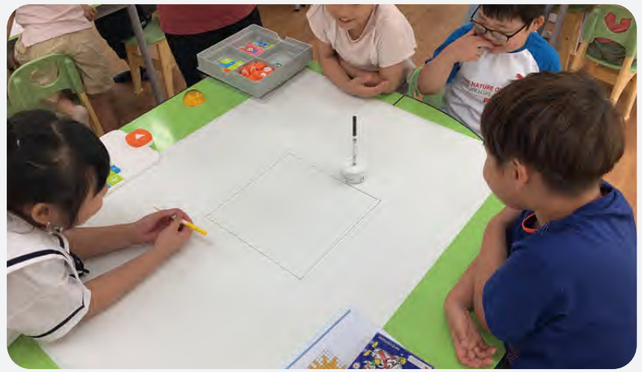
What skills did it develop?
basic concept of coding, Computer thinking, Code and Debugging.

What worked best and what was challenging?
When code and move Matatabot, its direction is based on Matatabot's direction. However, many children has been confused direction, because they think about it on their side of view.

How did students respond?
As looking at it as a one-year course, it was so much fun just by moving the robot in the beginning. I gradually increased the difficulty level and it worked as concentrated on maintaining interest for children.

Share your comments upon the class using Matatalab.
Students should take turns to complete the tasks.

Any others you would like to share
In the case of a one-year course, it is important to allocate so as not to take too many classes early. By slowly solving the concept of coding and teaching with Matatalab, you can continue to keep your children interested.







Case Studies

Hong Kong



Miss Ashley Wong
P3
Po Leung Kuk Lam Man Chan English Primary School
Hong Kong
Matatalab Coding Set



How many kids are in a group

4

How was the Matatalab robot(s) used?

It is fun to learn coding with Matatalab robot. Students can run their programs by controlling this robot.This robot is easy to use and manage for students. It is very simple. Teachers set a goal in the map. Students need to control the robot to reach the final destination. They have to come up with a program by using a number of direction plates and number plates. They are able to play and learn it within a single lesson when they have some basic coding knowledge. They can do the coding task in a group and also develop good communication skills. In a coding lesson, teachers teach basic coding concepts such as sequence and loops. It is important for students to understand how computers/robots work and why we need to give clear instruction to computers. When students do the coding task with Matatalab robot, it is nesseesary for them to go through many trials and errors because this is the best way to reach a desired result or a correct solution by trying out one or more ways or means and by noting and eliminating errors .They can try one thing or another until the task succeeds. Debugging is essential when doing coding exercises. It is easy to use Matatalab robot to do debugging because students just need to remove the plates and replace the correct one. To sum up, students really I enjoy a lot to use Matatalab robots in learning coding.

What skills did it develop?

Coding skills
Critical thinking skills
Problem solving skills
Communication skills
Higher order thinking skills

What worked best and what was challenging?

It is very easy to use Matatalab robots and it provides lots of different challenging tasks.
Sometimes students may not recognize the right turn/left turn icons.

How did students respond?

Fun and happy.

Share your comments upon the class using Matatalab.

Students should take turns to complete the tasks.

Any others you would like to share

This is a good tool to learn coding.





Case Studies

Thailand



Niti Boonyakiat
National Science Museum
Thailand
Grade 4-6
Matatalab Pro Set, Matatalab Lite





How many kids are in a group

3

How was the Matatalab robot(s) used?

Matatalab was employed as an important tool to enhance the basic coding lessons for children at the National Science Museum (NSM), Thailand. It was added to be a part of the " Kids Can Code" workshop activity which was implemented in IT camps for young children. Before starting this activity, the children were asked to think about whether they have used any codes in real-life situations, in order to let them comprehend the simple commands prior to learning the basics of coding. Then, they were assigned to complete the coding mission game by arranging the design of their algorithms, and lead characters in the mission to travel from starting points to the destination following the conditions in practicing worksheets. The Matatalab was used after this process to increasingly motivate and challenge the children's enjoyment to learn and construct their algorithm design. With the Matatalab mechanism, the children were convinced to design and use their strategies to achieve the mission of activity. For the result, it was found that children's logical thinking skill had been effectively improved by the "learning by doing" method.

What skills did it develop?

basic coding skill, problem-solving skill, logical thinking skill, and strategic planning skill.

What worked best and what was challenging?

The command blocks. They were designed with symbols that are simple to understand for children. The command blocks are an essential point to decrease difficulty in the meaning interpretation of commands or codes, and sustain children's interest and confidence to learn the basic of coding.

How did students respond?

The Matatalab could promote the children's understanding and motivation in learning the basic coding in NSM, Thailand. Most of the children who participated in this activity had the enjoyment to learn, paid attention, and were interested in the activity particularly, upon learning through the Matatalab.

Share your comments upon the class using Matatalab

Advantages

1. The command blocks of the Matatalab were created to ease the difficulties for children. It can assist the children to gain more understand of leaning the basic coding in terms of unplugged programming.
2. Educators can use the Matatalab with several target groups (Kindergarten - Grade 6) because its features were constructed with concrete ability to design the various coding challenges, ranging from easy level to the complicated level.
3. Overall, the Matatalab characteristics are reliable and suitable for children's attention. From the children's behavioral observation during the processing of the Kids Can Code workshop activity in NSM, Thailand, the Matatalab can extremely increase enjoyment, immersion, engagement, and interest of children on learning the basic coding rather than using the traditional coding worksheets.
4. The handbook of the Matatalab communicated clearly. The educators could easily understand how to navigate Matatalab's facility. This resulted in the effective design of the coding lessons by using the Matatalab, which eventually corresponds to the objectives of informal learning context at NSM, Thailand.

Disadvantages

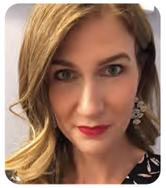
1. Maintaining signal connection between the command board and the processing unit is quite difficult. Communication failures frequently occurred when trying to connect many pairs of devices in a small area.
2. Some of the Matatalab's devices are easily dropped and damaged when used as a robot cover or the tower cover.
3. There is only one set of charger in the Matatalab Pro Set, but there are two devices that need to be recharged after each ending activity. This resulted in a long waiting time to charge devices on preparation for the next group, which can be problematic when multiple groups are taking turn to do the activity.





Case Studies

Canada



Erica Phillips
Sir Charles Tupper School
Canada
Grade 6
Matatalab Coding Set



How many kids are in a group

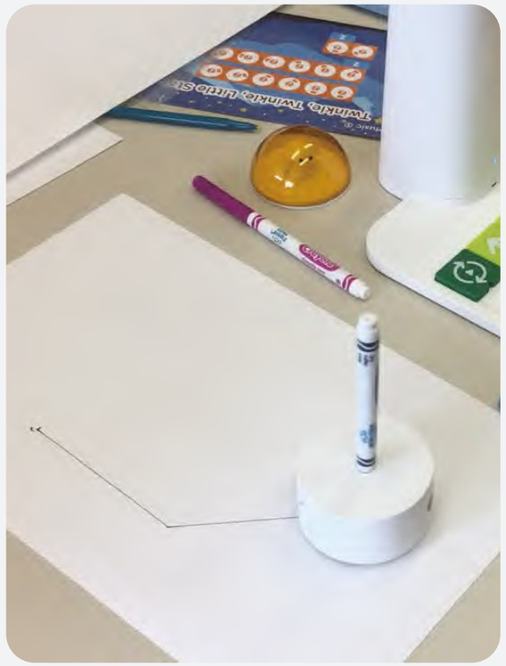
2

How was the Matatalab robot(s) used?

Student were concluding their unit in Geometry on Triangles in Math. Using the Artist add-on students used MatataLab to code Triangles. It was inspired by the activity card with the equilateral triangle on it which triggered quite an in depth conversation. This was do to the fact that thestudents knew the inner angle of an equilateral triangle are each 60degrees adding up to the total of 180. On the activity card it said to turn 120 when the students assumed it would be 60. We tried 60 and quickly realized that this did not work. So we started talking about the outside angles. Extended the lines and looked at how far we would have to turn. From the equilateral students then wanted to attempt triangles that had acute angels, obtuse angles, and a right angle. There was a lot of problem solving and communication as well as collaboration. There were also a lot of mistakes, but that is where the learning begins. When they messed up they were motivated to try again, changing the pen colour to see the difference. On one of the mistakes a student realized that even though what they were aiming for had not worked one more turn and line and they would have a parallelogram, so they did and then they calculated all of the internal angles and compared that to a triangle. Students successfully drew many triangles and just wanted to keep challenging themselves.

What skills did it develop?

Communication, problem solving, collaboration.



What worked best and what was challenging?

The amount of angle blocks is great, student can use them on their own or combine them to create other angles. Use of the MatataLab itself was easy for these students (I know the age recommendation is 4-9, but these 11 year olds loved it). They would switch the pen colour to see from one trial to the next how they improved. Challenges: Battery died, but we have two so the other one was charged and ready to step in. Other challenge was keeping it on the paper, we should have had larger paper to start.

How did students respond?

The students loved using MatataLab. They had been recently drawing triangles with rulers and protractors in class and they expressed that this was way more fun. Even though it was fun, lots of learning was taking place. When mistakes happened they did not get frustrated buts simply tried again, they even laughed at themselves.

Share your comments upon the class using Matatalab

This was only two people at one time using the MatataLab as an extension of what they were doing in Math but it was extremely successful. We have two Pro Sets currently at our school that were purchased for the lower elementary, however when I saw the artist add-on I thought of our grade 6 students as I watched them drawing triangles on a walk through the other day. This was a perfect fit for them and they enjoyed using it.

Any others you would like to share

We will continue to explore how we can use MatataLab to support the curriculum in our school, using it with our youngest (grade Primary) to our oldest (Grade 6). With the pro set we also have the music add-on that we are working on figuring it out.



Case Studies

Finland



Sampo Forsström

Finland
University of Eastern Finland Teacher Training School
Matatalab Coding Set
Musician add-on
Artist add-on



How many kids are in a group

5

How was the Matatalab robot(s) used?

The FCLab and matatalab pilot started on Thursday the 17th of February with five teacher students who are doing their practice in the University of Eastern Finland Teacher Training School. The student teachers are first year students and their prior knowledge of coding and working with robot sets was very slim.

The goals of the teacher student workshop was to get a first hand experience from novices about the usability of the sets. We did not give any instructions on how to use the products so the starting point was very "Deweyish", Learning by doing! We also discussed the pedagogical possibilities and the students'assumption about how robots would work in the classroom with the 1st graders.

In about five minutes the student teachers were actively coding with the blocks and doing challenges. Some used the instruction manual and

others learned from each other. There was a nice ripple of conversation and plenty of smiles around the table. During the 40 minutes of testing the students made different routes with and without obstacles, tried many functions, composed music with the add-on and drew many kinds of geometrical shapes. The robots were made to dance, sing and move.

What skills did it develop?

The student teachers felt that during the workshop they had developed their coding skills and they learned about programming. When the basic commands and principles were understood they were able to develop problem solving skills, creativity and math skills.

From this short experience the student teachers thought that the pedagogical possibilities include learning collaboration skills and coding skills. The Artist Add-On can be integrated into, for example, mathematical geometry or visual arts. The robots enhance interaction and group working skills. In their opinion the matatalab robots Inspire and motivate to learn.

What worked best and what was challenging?

After the personal hands-on session we discussed the experiences. One student said: "At first, it took a moment to figure out how the Matatalab robot worked, but when it was clear, I thought it was easy to use. The best, I think, was the music add-on and making my own compositions." Another student commented that: "I liked using it. The best thing was to try the artist section, as it allowed you to challenge yourself well and try new things."

How did students respond?

In a short survey after the workshop all the teacher students thought that the sets were easy or very easy to use. After the basic introduction some students started to try creative solutions with the robots eg by typing your own name or drawing certain shapes. They thought the hands-on session was fun and it Increased enthusiasm for coding, creative work and opened possibilities for integration into different school subjects.

Share your comments upon the class using Matatalab

Share your comments upon the class using Matatalab

The next steps in the piloting will be taken with the 1st graders and we are very excited about that!Any others you would

Any others you would like to share

The link to the video:
https://drive.google.com/file/d/1Ky12-xqQA5h2RDYP2sN3zq6OQpxRdh6T/view?usp=sharing







Case Studies

Finland



Tiina Matveinen
Finland
Grade 1
Matatalab Coding Set
Artist add-on



How many kids are in a group

21

How was the Matatalab robot(s) used?

In the first session we had an animal theme. We got to know the basic use of the robots by practicing to code them to greet animals. Then we added music, which needed to ring when the robot met an animal. After that we coded a robot to go around an animal a couple of times.Rest of the time the students were able to code freely.

In the second session we tried the Artist Add-on sets. We revised basic geometry so the lesson was integrated into the mathematics curriculum. We made different kinds of geometrical shapes and figures.

The final task was to make an own masterpiece with a group and thisboosted and emphasized the importance of creativity and cooperation.Another content in mathematics was the repetition of the reading of time. The students placed clock dials (12 different times) on the platform and they picked up the corresponding written time and the task was to program the matabots to the right time. This simple exercise combined nicely with the math content and programming skills of the curriculum. We used programming as a learning tool in a fun and highly motivational way!

What skills did it develop?

Coding with the matatabots developed the following skills:
-sense of direction
-to follow rules
-critical thinking (was my coding right or not, why not)
-geometrical shapes
-reading the time
-cooperation
-patience
-interaction with peers
-problem solving
-creativity

What worked best and what was challenging?

It seemed that students understood the main principle of robots quite fast. They just tried and learned how to use robots. Students worked very well in cooperation with others. We were able to quickly combine learning objectives with programming. How did students

How did students respond?

Students were very enthusiastic and at some point it was hard for them to listen to instructions because they just wanted to code. After the sessions students found out that coding was fun and it would be nice to do more coding withMatata robots

Share your comments upon the class using Matatalab.

During the pilot I as a teacher experienced cooperation with peers, happy faces, joy of learning new things and happiness when they figured out the solution. It was nice that we were able to boost creativity skills for my students. Robots were easy to use. There were tasks for all kinds of students, for them who just started coding and also for them who were at a more advanced level.

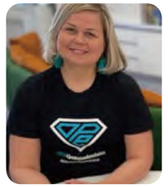






Case Studies

Finland



Teija Paavilainen
Finland
UEF University of Eastern Finland,
Rantakylä teacher training school
Grades 5-6
Matatalab Coding Set



How many kids are in a group
13

How was the Matatalab robot(s) used?
Students from grades 5 and 6 get to know how Matatalab Coding set works so that they could help the younger children to learn new skills. After getting to know the basic skills (making Challenge booklets that best meet their coding skills) they also planned a labyrint (see video) as a challenge for other students to manage it. Then they compared the coding and saw if there was multiple ways to solve the problem.

What skills did it develop?
Basic coding skills, creativity, problem solving skills, co-operation.

What worked best and what was challenging?
The challenge booklets are an easy way to get to know how matatabots work. I enjoyed a lot that children were able to study which was the optimal level for them to try to solve the coding problems. These students are with good technological and working skills so I think there wasn't any bigger problems.

How did students respond?
Students liked a lot working together with the bots and also learned a lot from their partner. Matatalab products were very engaging also for these older students and they enjoyed the possibility to choose their own level on doing. Also the labyrinth-challenge was nice because they had the possibility to be creative.

Share your comments upon the class using Matatalab.
Easy for teachers to use. Multiple creative ways to use the bots to learn new skills. Children are engaged and enthusiastic.









Case Studies

USA



Susan Wells

The International Preschool of Raleigh &
The Duke School
Grades PK-8
Matatalab Coding Set, Musican Add-on, Artist Add-on



INTRODUCTION

This Matatalab case study was conducted at two schools – at The International Preschool of Raleigh located in Raleigh, NC, and at The Duke School located in Durham, NC during February 2020 and March 2020. Students at both schools were introduced to and explored the Matatalab Coding, Music and Art sets.

The International Preschool of Raleigh(IPR)provides full and half day preschool education for children ages two through five years old. This school has a strategic partnership with Mornwind Education which also operates an IPR location in Beijing, China. This global campus gives all IPR students an international learning experience as they learn collaborative liberal arts and STEM curriculum.

The Duke School educates children from pre-kindergarten through eighth grade, ages three to thirteen years old. The curriculum taught in this school emphasizes in-depth investagation of important topics that guides and encourages students to apply skill and strategies allowing them to solve real world problems.

Both schools include curriculum that highlights STEM skills and project-based learning. Both schools emphasize skills that enable their students to discover knowledge for themselves.

BACKGROUND

The Matatalab Coding Set is a block-based, screenless and tangible programming tool that allows students to move a robot through a naturemap by way of a Bluetooth-enabled command tower and board.



The Coding Set includes a Bluetooth-enabled command tower, control board, wheeled robot, and thirty-seven coding blocks in the form of enumerated tiles. The basic Matatalab set includes coding blocks, about the size of two Lego® bricks which allow students to place them in a coding configuration on the control board. The command tower takes a photo of the blocks' configuration and at the touch of the large orange button, sends code via Bluetooth connectivity to move the robot on the map.



The Artist and The Musician Add-on Expansion Packs are Matatalab sets that supplement the Coding Set. The Artist Expansion Pack, with twenty angle blocks, allows students to use a marker placed in the robot's center and configure coding blocks to have the robot create basic and involved shapes. The Musician Expansion Pack, with thirty-two music blocks and ten melody blocks, allows students to code a series of simple songs. Students can also code and compose music themselves.

CHARACTERISTICS OF STUDY

The Matatalab Coding Set is a block-based, screenless and tangible programming tool that allows students to move a robot through a nature map by way of a Bluetooth-enabled command tower and board.

Students and Teachers

Students and teachers at the International Preschool of Raleigh worked with Matatalab for aseveral hours in one day. Students and teachers at the Duke School worked with Matatalab over a multi-day period during hourly after-school sessions.

Objectives

The case study's objective was to observe students' and teachers' reactions to different aspects of the Matatalab learning tools and to note how well these tools teach STEM and STEAM skills.

As a 2019 study from the US Department of Education states:

In an ever-changing, increasingly complex world, it's more important than ever that our nation's youth are prepared to bring knowledge and skills to solve problems, make sense of information, and know how to gather and evaluate evidence to make decisions. These are the kinds of skills that students develop in science, technology, engineering and math—disciplines collectively known as STEM. If we want a nation where our future leaders, neighbors, and workers have the ability to understand and solve some of the complex challenges of today and tomorrow, and to meet the demands of the dynamic and evolving workforce, building students' skills, content knowledge, and fluency in STEM fields is essential.

Activities

In order to participate, students from each large group were separated into smaller groups of four. Each of these smaller groups were given twenty minutes to work with and experience each of the following Matatalab sets: Coding, Artist, and Musician.

After receiving basic instructions on the meaning of the symbols on the blocks and the contents of each of the expansion packs, students were able to collaboratively explore and play with each set.

At the end of the prescribed time students were very reluctant to stop playing.

During the musical coding, while the musicwas playing by the robot, students clapped along and sang the songs.

During the art coding, students were very excited and yelled out ways that they could make things from each shape. Students were so excited that they clapped enthusiastically.

In each case students did not want to stop at the end of the sessions - they preferred to stay working with the projects. They asked if they could extend their time and when they would be able to work with the sets again.

Results

Regardless of age or location, students in both schools were highly engaged while working with Matatalab.

Because each student could work at their own pace, they remained engrossed throughout the process.

Working with Matatalab required little to no previous experience with coding or engineering. Because of this ease of use, students were not hesitant to try out and explore the kits.

Students learned advanced and refined coding skills. In particular they learned how to manipulate code to have the robot complete specific tasks.

Students developed problem- solving skills by using trial and error to correct bugs in their codes.

Students also refined collaboration skills as they discussed and resolved challenges presented by their tasks.









STUDENT RESPONSE

All of the students were excited to play with and experience each of the sets. While the contents of each set did require some explanation, once done, students were able to grasp how to use the contents of each set. Students utilized the workbooks as they challenged themselves to learn more about each set.

Students expressed their desire to begin independently working with the contents as soon as they were able. Both groups proved to be very engaged during the entire period. Students stated the following: “I want a turn.” “I know how now!” “I want to work with it!” “Can we please use Matata every day?!”

True elation and enjoyment were shown by the students with the art and musical sets. During the musical coding, while the music was playing by the robot, students clapped along and sang the songs.

During the art coding, students were very excited and yelled out lots of ways that they could make things from each shape. Students were so excited that they clapped with excitement.

One student announced, “I feel smarter when I’m coding the Matatabot.”

TEACHER RESPONSE

Teachers in both schools were very enthusiastic about Matatalab learning tools. They appreciated the tactileand visual aspects of the tool. Teachers were especially impressed seeing how this tool captivated and held the attention of their students. They stated they were eager to try Matatalab in their classrooms for upcoming math and literacy lessons.

The following are some of their quotes that specifically reflect their responses:

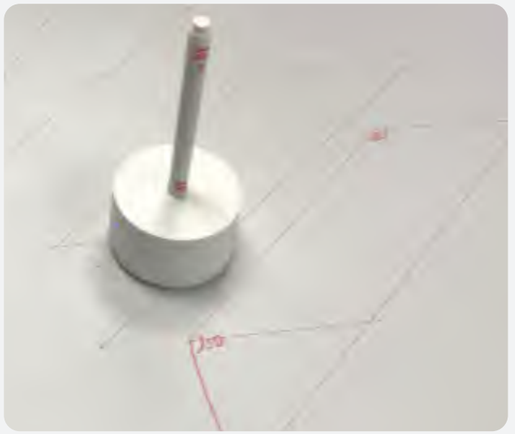
General Ed teacher:
“Some of the kids totally understand it. They get it right away and love it. We’d like to have more units. We’d like to have enough so the kids who get it can go work in small groups of 2-3. Then I can work with a group of 4-5 who need more guidance and help.”

“It's really amazing to watch two of my students put their heads together with one of the Matatalab books. The blocks are pretty intuitive. The kids love it and you can truly see the learning in action.”

Math teacher:
“One of the best things is seeing my older students using the Artist pack to understand and identify angles. I give them a worksheet with the type of angle and a description. They use the robot to draw an example of that angle. Could we do it without the robot, of course, but the kids are a thousand times more engaged using Matatalab to do the work.”

Pre-Kindergarten Teacher:
“I love the durability of Matatalab. I keep all the coding blocks in a plastic tub so all the small parts stay together.”











Kindergarten Teacher:

"When they said my kids would learn to code with Matatalab I really didn't believe. But really you should see them now, and listen to them. We use them to write letters and numbers and my 5- and 6-year-olds totally get it! If you listen, you'll hear them talking about math, counting how many steps, talking about degrees of angles to make their letters. I especially love hearing them talk about the coding

blocks and using words like ... loop. Matatalab is my number one pick for hands-on learning."

Third Grade Teacher:

"We'd like to have more units. We'd like to have enough so the kids who get it can go work in small groups of two to three when they're doing their math problems. They love Matata so much, math is a lot more fun with a hands-on tool."

ADMINISTRATOR RESPONSE

Administrators at both schools were equally interested in the Matatalab learning tools. The following quotes reflect their enthusiasm:

"My teachers love Matatalab and use it across content areas."

"In Kindergarten our teachers use it in their centers. Now that kids know how to use it they are able to be independent with the robot and map. "

"Our music teacher loves to give her students turns composing music and also listening to notes to recognize patterns."

"Literacy is another area teachers are using Matatalab. They're able to have students write reports about all the places the robot visits. They've even made their own maps and worked together to build a brand-new journey for the robot. My teachers love seeing the kids so engaged in really creative work."

CONCLUSION / REFLECTION

The Matatalab Coding Set and Art and Music Add-on Expansion Packs proved to be extremely engaging for all students who participated in this case study. The ease with which even the very youngest students learned how to successfully use the sets is a testament to the powerful teaching potential this tool has when included as a part of any classroom's STEM curriculum.

It was motivating to see the different ages of children able to use the Matatalab tools successfully and enthusiastically. Children as young as three and four were able to use directional code and work together to make shapes and play music. Older students, all the way up through primary grades, were extremely engaged with the Matatalab tools. They were especially enthusiastic using the Artist Expansion pack.

Teachers and administrators were also very excited about the potential for learning afforded by the Matatalab sets. They were impressed with the curriculum reach these tools afforded students. They found it easy to include Matatalab tools in their daily planning. As a whole teachers and school leaders only wanted more sets of Matatalab for their students.

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Member of European Schoolnet

Matatalab is officially cooperated with European Schoolnet, a network of 34 European Ministries of Education, in their Future Classroom Lab project. By establishing this partnership, Matatalab and European Schoolnet are joining forces to give students a better learning experience and help them enjoy the benefits of technology. To find out more, please visit : https://fcl.eun.org/matatalab

FCL Information:

The Future Classroom Lab is created by European Schoolnet, it's supporting over 30 ministries and industry partners to help visualise how conventional classrooms and other learning spaces can be easily recorganised to support changing styles of teaching and learning.

European Schoolnet Information:

European Schoolnet or EUN is a network of 34 European Ministries of Education, based in Brussels. As a not-for-profit organisation, it aims to bring innovation in teaching and learning to its key stakeholders: Ministries of Education, schools, teachers, researchers, and industry partners.

Educational Accreditation

Matatalab STEAM learning solution have received certifications from international education organizations for high quality in pedagogy and usability.

Education Alliance Finland

ISTE Seal of Alignment

ISTE SEAL OF ALIGNMENT REVIEW FINDINGS REPORT

Matatalab

JULY 2020

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ABOUT

ABOUT ISTE

The International Society for Technology in Education (ISTE) is the premier nonprofit membership organization serving educators and education leaders. ISTE is committed to empowering connected learners in a connected world and serves more than 100,000 education stakeholders throughout the world.

As the creator and steward of the definitive education technology standards, our mission is to empower learners to nourish in a connected world by cultivating a passionate professional learning community, linking educators and partners, leveraging knowledge and expertise, advocating for strategic policies, and continually improving learning and teaching

ISTE SEAL OF ALIGNMENT

Resources and products designed with the ISTE Standards in mind are choosing to demonstrate their commitment to support critical digital age learning skills and knowledge. Regardless of a solution's intended grade level, purpose or content area, by addressing the ISTE Standards and earning a Seal of Alignment, a solution is shown to consciously, purposefully and meaningfully support best practices for digital age teaching and learning.

ISTE considers a solution aligned to the ISTE Standards only after an extensive review conducted by trained ISTE Seal of Alignment reviewers, and it has been determined to meet all critical elements of a particular standard indicator in accordance with specific review criteria.

By earning a Seal of Alignment, ISTE verifies that this product:

- Promotes critical technology skills
- Supports the use of technology in appropriate ways
- Contributes to the pedagogically robust use of technology for teaching and learning
- Aligns to the ISTE Standards in specific ways as described in the review finding report

RESOURCE DESCRIPTION

WHAT IS MATATALAB?

The central product is the Matatalab Coding Set, which is designed for use by children ages 4-9. It includes the major hardware and instructional components necessary to develop a set of fundamental coding skills. The Matatalab Coding Set is supported by four add-on packs that expand the kinds of programming students can do. These add-ons are *Musician, Artist, Sensor, and Animation.* There is also a simplified version called *Matatalab Lite* that allows programming and control of the robot without using the control board and command tower.

The core components of the Matatalab system are:

1. A controllable **robot**
2. A set of **coding blocks** that contain individual instructions for the robot
3. A **control board** on which the coding blocks are arranged
4. A **command tower** that reads the blocks and transmits them to the robot via Bluetooth maps with 16 blocks arranged in a 4x4 matrix on which the robot moves in response to instructions transmitted by the command tower. Numerous pre-printed maps are available and custom maps can be created.

HOW IS MATATALAB IMPLEMENTED?

The curriculum guides that accompany each Matatalab Coding Set product include 12 lesson plans with a variety of learning activities structured to progressively develop coding skills. Lessons are usually 60 minutes in duration, and they include standard lesson plan components: objectives, a list of standards addressed (including but not limited to ISTE standards), advice for teacher preparation and setup, materials needed, etc.

Most lessons culminate in the completion of coding projects which are completed collaboratively by student groups of four. Beginning lessons focus on basic skills required to set up and control the robot while more advanced projects range from programming the robot to draw various shapes to creating a board game through which the robot advances as students play the game. The vocabulary provides the opportunity to gain in-depth, advanced experience with coding-specific terminology that younger children may not otherwise have the opportunity to work with (algorithm, function, loop, parameter). Educators have the option to adjust the pacing and project activities to suit the level of the students being taught.

Students use teacher-provided journals to take notes, draw up plans for projects, and write about their experiences. Assessment occurs via a class discussion about what went well and what students would do differently if they had the chance to try the same project again.

Product: Matatalab Coding Set
Organization: Matatalab
Date of Award: July 2020

REVIEW METHODOLOGY

ISTE Seal of Alignment reviews are conducted by a panel of education and instructional experts. Reviewers use data collected both separately and collectively to determine how a solution addresses specific elements described in each of the indicators of the ISTE Standards. Special instruments are used by reviewers to collect data on potential alignment across all resource materials. Alignment is determined based on the extent to which all or some of specific elements are addressed within the materials. Reviewers conduct regular calibrations to assure the validity and reliability of the results and final review findings are combined for an overall score for alignment on each individual indicator.

During the review process for Matatalab, reviewers:

- collected data on when and how each activity addressed specific skills and knowledge described in the ISTE Standards for Students at either a foundational or applied level.
- compiled findings to determine overall alignment across all ISTE Standards for Students and indicators.
- used aggregate findings to form the basis of the overall alignment results.

SCOPE OF REVIEW

ISTE reviewers conducted a comprehensive review of Matatalab's materials, including:

- Matatalab Coding Set
- Matatalab Lite
- Matatalab Pro Set
- Musician add-on
- Artist add-on
- Animation add-on
- Sensor add-on
- Seven curriculum books
- Mobile app
- Online training program

The reviewers had the opportunity to set up the robot, examine curriculum guides and component lessons in the coding kit and add-ons, and complete some of the project challenges. Additionally, the review team visited the Matatalab website to explore the array of downloadable activities, read the company blog, and other available materials.

REVIEW FINDINGS

Matatalab Coding Set addresses the ISTE Standards for Students at both the Foundational and Applied levels.

- Resources and activities aligned at the foundational level primarily focus on introductory skills and knowledge that facilitate skill acquisition to eventually meet ISTE Standard indicators while resources aligned at the applied level focus primarily on practical, real-world activities.
- Applied – Resources and activities aligned at the *Applied* level primarily focus on practical, real-world, and/or relevant opportunities to practice the skills and knowledge learned in the curriculum.

Matatalab Coding Set was found to address the following standards and indicators of the ISTE Standards for Students:

ISTE STANDARDS FOR STUDENTS

	Standard 1 Empowered Learner	Standard 2 Digital Citizen	Standard 3 Knowledge Constructor	Standard 4 Innovative Designer	Standard 5 Computational Thinker	Standard 6 Creative Communicator	Standard 7 Global Collaborator
Indicator A				Applied	Foundational	Foundational	
Indicator B						Foundational	
Indicator C	Foundational			Foundational	Applied		
Indicator D	Applied				Foundational		

Foundational resources and activities focus primarily on knowledge that facilitates skills acquisition to eventually meet ISTE Standards indicators.

Applied resources and activities focus primarily on practical, real-world and/or relevant opportunities to practice the skills and knowledge learned in the curriculum.

ISTE Standard	Foundational/Readiness Finding Statement	Proficiency/Applied Finding Statement
1. Empowered Learner. Students leverage technology to take an active role in choosing, achieving and demonstrating competency in their learning goals, informed by the learning sciences.		
1.c. Use technology to seek feedback that informs and improves their practice and to demonstrate their learning in a variety of ways.	Students expect and use feedback from the Matatalab robot as they try out different coding sequences. Analysis of what the robot does, intended or not, guides adjustments to the code to improve their programming expertise.	
1.d. Understand the fundamental concepts of technology operations, demonstrate the ability to choose, use and troubleshoot current technologies and are able to transfer their knowledge to explore emerging technologies.		Students develop coding skills to direct a robot's movements, synthesize music, and generate original works of art. Programming concepts employed include loops, functions, and parameters.
4. Innovative Designer. Students use a variety of technologies within a design process to identify and solve problems by creating new, useful or imaginative solutions.		
4.a. Know and use a deliberate design process for generating ideas, testing theories, creating innovative artifacts or solving authentic problems.		Students use deliberate design process to plan and create simple original works of synthesized music and to direct the robot to draw artistic pieces that become part of larger student-constructed works.
4.c. Develop, test and refine prototypes as part of a cyclical design process.	Every project in the curriculum gives students the opportunity to design, test, and refine their coding instructions.	
5. Computational Thinker. Students develop and employ strategies for understanding and solving problems in ways that leverage the power of technological methods to develop and test solutions.		

5.a. Formulate problem definitions suited for technology-assisted methods such as data analysis, abstract models and algorithmic thinking in exploring and finding solutions.	Students analyze challenges and self-selected designs to break them down into component parts which can be addressed with correctly selected and arrange coding blocks.	
5.c. Break problems into component parts, extract key information, and develop descriptive models to understand complex systems or facilitate problem-solving.	Younger students gain experience in breaking problems into smaller steps that help achieve the desired movement of the robot or musical output.	Older students face numerous challenges to break large challenges into smaller challenges with individual steps to completion.
5.d. Understand how automation works and use algorithmic thinking to develop a sequence of steps to create and test automated solutions.	Many activities give younger students experience with the concept of setting up a sequence of robot instructions once and repeatedly initiating execution of those instructions with the touch of a button.	Older students have many opportunities to become proficient in increasing the power of automation by controlling the robot with code that is made more compact and efficient with the use of parameters, loops, and functions.
6. Creative Communicator. Students communicate clearly and express themselves creatively for a variety of purposes using the platforms, tools, styles, formats and digital media appropriate to their goals.		
6.a. Choose the appropriate platforms and tools for meeting the desired objectives of their creation or communication.	Every challenge in this curriculum requires students to determine, recognize, and properly sequence the right command blocks that will guide the robot to achieve their intended objectives.	
6.b. Create original works or responsibly repurpose or remix digital resources into new creations.	The Animation, Artist, and Musician add-ons give students many opportunities to create original graphic or musical works. The basic coding kit gives students introductory experiences that contribute to foundational skill development for this standard.	

CONCLUSION

Matatalab offers an engaging resource that makes computer coding and robot control accessible to elementary students. The accompanying curriculum guides contain a wealth of introductory activities that give students a good grounding in computer coding. Using the resource feels like play, but users will develop an operational understanding of significant and fairly sophisticated coding concepts. The system has clear instructions for set up and is simple to operate. Young learners will learn basic concepts as they work toward a level of semi-independence in programming and controlling the robot while older students build on coding skills.

After reviewing Matatalab;s offerings against the ISTE Standards for Students, the ISTE Review Team found that Matatalab makes coding accessible to elementary students and the projects provide opportunities to explore applications of technology while developing skills related to computational thinking and design.