Wednesday 7 June, 2023 – NKUA Central Building

16:00 - 17:00	Registrations		
17:00 - 18:30	Opening Ceremony - "Ioannis Drakopoulos" Amphitheatre Chair: Hans-Georg Weigand		
18:30 - 19:30	Keynotes 1/"Ioannis Drakopoulos" Amphitheatre		
	Nathalie Sinclair, Simon Fraser University: Aesthetising mathematics education research Chair: Chronis Kynigos (NKUA)		
19:30-21:00	**Posters, Demos & Reception***		
	A DIDACTIC PROPOSAL FOR TEACHING MATHEMATICS TO PRIMARY SCHOOL CHILDREN Eleni Tsami, Dimitra Kouloumpou, Andreas Rokopanos, Dimitrios Anastasopoulos	USABILITY OF 3D MODELLING AND PRINTING TO LEARNING MATHEMATICS IN A PRIMARY SCHOOL INCLUSIVE CLASSROOM Branko Anđić, Eva Ulbrich, Mathias Tejera, Andrea Mate-Klatyik, Zsolt Lavicza	A FRAMEWORK BASED ON ECOLOGICAL THEORY OF ANALYSING SPATIAL LEARNING IN AUGMENTED REALITY GEOMETRY Yang Yang, Manolis Mavrikis, Eirini Geraniou
	CHARACTERIZING TOUCHSCREEN ACTIONS FOR ACTION-BASED EMBODIED LEARNING IN K-12 MATHEMATICS INSTRUCTION Wing-Leung Yeung, Oi-Lam Ng	GEOGEBRA CODING - BRIDGING INTERACTIVE GEOMETRY AND VISUAL PROGRAMMING Sokratis Karkalas, Filothei Chalvatza, Manolis Mavrikis	HONG KONG ETHNIC MINORITY STUDENTS' MULTIMODAL DISCOURSE ABOUT TRIANGLES IN DYNAMIC GEOMETRY ENVIRONMENTS Oi-Lam Ng, Allen Leung, Huiyan Ye
	INSTRUMENTAL GENESIS OF CHATGPT IN A CHALLENGE-BASED COURSE INVOLVING MATHEMATICS Zeger-jan Kock, Ulises Salinas-Hernández, Birgit Pepin	MaLT2: A DIGITAL EXPRESSIVE MEDIUM FOR STUDENTS' AND TEACHERS' MATHEMATICAL ACTIVITY Konstantinos Gavrinas	COMMUNITIES OF LEARNING AND PRACTICE IN MATHEMATICS TEACHER PROFESSIONAL DEVELOPMENT Dimitris Diamantidis
	PRODUCTIVE USE OF GENERATIVE AI LANGUAGE MODELS FOR MATHEMATICS TEACHING Nils Buchholtz, Lukas Baumanns, Judith Huget, Franziska Peters, Maximilian Pohl, Sebastian Schorcht	RECOGNISING MACRO-SPACES USING GOOGLE MAPS: A STUDY WITH EIGHT-YEAR OLD CHILDREN Yudi Andrea Ortiz-Rocha, Ana Isabel Sacristán, Ivonne Sandoval-Cáceres	SKILLSPRINT: GAMIFYING MATHEMATICS REPETITION Magnus Lauritzen Holtet, Anh-Kha Nguyen Vo, Sofia Papavlasopoulou
	SAMR MODEL FOR 3D PRINTING AND AUGMENTED REALITY Antía Fernández López, Teresa Fernández Blanco	TECHNICAL ADVANCES AND DIDACTIC REASONING IN THE PROJECT AuthOMath Guido Pinkernell, Gunter Ehret, Jose Manuel Diego Mantecón, Angel Ríos San Nicolas, Chris Sangwin, George Kinnear, Zsolt Lavicza	THE ROLE OF ChatGPT IN MATHEMATICS INQUIRY-BASED LESSONS: A STUDY IN BRAZIL Jonei Cerqueira Barbosa
	THE BUTTERFLY PROJECT: MAKING SENSE OF FUNCTIONS THROUGH INTERPOLATION Romain Gourvil	ONLINE COLLABORATION – FOR WHO? Liv Sofie Nøhr	

*** During the next days of the Conference the posters will be on display in the "Poster Room" on the 1st floor / Marasleio Didaskalio**

Thursday 8 June, 2023 – Maraslion Didaskalion			
9:00 - 10:30	Workshop Sessions (The underlined author is also the chair of the workshop session)		
	Workshop Session 2.1 Room 1	Scott Courtney	GAPMINDER – DIGITAL TOOLS THAT SUPPORT A FACT-BASED WORLDVIEW TO CONFRONT SOCIETAL CHALLENGES AND MISCONCEPTIONS
	Workshop Session 2.2 Room 2	Rebecca Samantha Stäter, Sina Wetzel, Matthias Ludwig	TEACHING COMPUTATIONAL THINKING: A LOW-THRESHOLD APPROACH USING COLETTE
	Workshop Session 2.3 Room 3	Katrin Gruhn, Carina Tusche, Laura Graewert, Raja Herold-Blasius, Daniel Thurm	CREATING DIGITAL ESCAPE GAMES FOR MATHEMATICS EDUCATION
	Workshop Session 2.4 Room 4	Chronis Kynigos Dimitris Diamantidis, Vaggelis Fakoudis	MATHEMATICS IN THE DIGITAL SCHOOL INFRASTRUCTURE (MINISTRY OF EDUCATION - CTI DIOPHANTUS)
10:30 - 11:00	**Coffee Break**		
11:00 - 12:00	Keynotes 2/Amfitheatre Maraslion Didaskalion		
	Osama Swindan, Ben Gurion University of the Negev: Augmented reality: just a big name or a technology that really does promote mathematical thinking? Chair: Alison Clark-Wilson (University College London)		
12:00 – 13:00	**Light Lunch**		
13:00 – 14:30	Research Reports		
	Research Reports 2.1.1 **"Analytics & AI"** Room 1 Chair: Marcelo Milrad	Christian Bokhove	HELP-SEEKING IN AN ONLINE MATHS ENVIRONMENT: A SEQUENCE ANALUSIS OF LOG-FILES
		Camilla Spagnolo, Giorgio Bolondi, Alessandro Gambini	SOLVING A PROBLEM WITH AI: CONSIDERATIONS ON TEACHING AND LEARNING MATHEMATICS
		Dorota Mozyrska	E-COACHING METHODOLOGY IN TEACHING LINEAR ALGEBRA AND CALCULUS
	Research Reports 2.1.2 **"Communication in distance education"** Room 2 Chair: Ana Isabel Sacristán	Katharina Kirsten, Gilbert Greefrath	INTEREST AND SELF-EFFICACY IN DISTANCE LEARNING - A COMPARISON OF SYNCHRONOUS DISTANCE AND ON-CAMPUS TUTORIALS
		Amanda Thomas, Nathaniel Largo	CONCEPTUALIZING NEW IMPERATIVES FOR TECHNOLOGY: TEACHING ELEMENTARY MATHEMATICS IN A VUCA WORLD
	Research Reports 2.1.3 **"Classroom Mathematical activity"** Room 3 Chair: Eirini Geraniou	Angela Zoupa, Giorgos Psycharis	ABSTRACTION OF MOTION IN PATTERNS ENHANCE ALGEBRAIC GENERALIZATION IN MATHEMATICS CLASSROOMS
		Sara Bagossi, Osama Swidan, Omar Abu Asbe	FEELING THE SLOPE: LEARNING THE DERIVATIVE CONCEPT WITH AUGMENTED REALITY
		Marios Pittalis, Eleni Demosthenous, Eleni Odysseos, Ute Sproesser	REPRESENTING DISTANCE-TIME SCENARIOS IN A DIGITAL EMBODIED LEARNING ENVIRONMENT
14:30 - 15:00	**Coffee Break**		
15:00 – 16:30	Research Reports		

	Research Reports 2.2.1 **"Transformational designs and tools"** Room 1 Chair: Nathalie Sinclair	Annalisa Cusi, Sara Gagliani Caputo	DESIGN OF DIGITAL ENVIRONMENTS AIMED AT FOSTERING ASYNCHRONOUS WORKING GROUP ACTIVITIES: EMERGING CATEGORIES OF STUDENTS' COLLABORATIVE PROCESSES
		Myrto Karavakou, Chronis Kynigos	SINE, YOU THINK, IT CAN DANCE? AN AESTHETICALLY DRIVEN MATHEMATICAL ACTIVITY FOR MEANING MAKING ON TRIGONOMETRIC FUNCTIONS
		Marianthi Grizioti, Maria-Stella Nikolaou	ENHANCING STUDENTS' 21ST CENTURY SKILLS THROUGH PLAYING AND MODIFYING EMBODIED DIGITAL CLASSIFICATION GAMES
	Research Reports 2.2.2 **"3D printing in Mathematics Education"** Room 2 Chair: Osama Swidan	Antonietta Esposito, Francesco Saverio Tortoriello	THE 3D PRINTER IN KINDERGARTEN EDUCATIONAL ACTIVITIES
		Maria Mavri, Evgenia Fronimaki, Patricia Ikouta Mazza, Dimitris Papandreou, Maria Koltsaki	EXPLORING THE POTENTIAL OF 3D PRINTING AT MATHEMATICAL LITTERACY
		Annamaria Miranda	EXPLORING THE ROLE OF 3D PRINTING TECHNOLOGY IN SUPPORTING UNDERGRADUATE STUDENTS' TOPOLOGICAL CONCEPTUAL KNOWLEDGE
	Research Reports 2.2.3 **"Computational Thinking"** Room 3 Chair: Marios Pittalis	Paolo Musmarra, Maria & Rosaria Del Sorbo	LEARNING GEOMETRY USING COMPUTATIONAL THINKING, SCRATCH AND PYTHON TURTLE
		Emil Bøgh Løkkegaard, Liv Sofie Nøhr, Eirini Geraniou, Andreas Lindenskov Tamborg, Morten Misfeldt	PROGRAMMING AND COMPUTATIONAL THINKING IN MATHEMATICAL SUBJECT AREAS
		Abolfazl Rafiepour, Mohammad Radmehr	THE IMPACT OF TEACHING SCRATCH ON GROWTH OF COMPUTATIONAL THINKING OF 7TH GRADE STUDENTS
16:40 – 18:10	Research Reports		
	Research Reports 2.3.1 **"Designs and tools for classroom practice"** Room 1 Chair: Melih Turgut	Katia Schiza	TINKERING WITH ANIMATED MODELS OF LETTERS: INSIGHTS IN THE USE OF VARIABLE
		Melih Turgut, Iveta Kohanová, Jørn Ove Asklund, Solveig Voktor Svinvik	INTERNAL RECORD AS A CATALYST: FOURTH GRADERS' PROBLEM-SOLVING PRACTICES WITH PROGRAMMING ROBOT EMIL
		Yee Man Chan, Oi-Lam Ng	MATHEMATICAL LITERACY DEMONSTRATED IN PROGRAMMING-BASED MATHEMATICAL PROBLEM SOLVING: THE CASE OF COMPOUND INTEREST
	Research Reports 2.3.2 **"Students' activities support"** Room 2 Chair: Christian Bokhove	Carina Tusche, Daniel Thurm, Shail Olsher	HOW COMBINING SELF-ASSESSMENT AND AUTOMATIC ASSESSMENT MIGHT HELP TO SUPPORT STUDENT ENGAGEMENT
		Annalisa Cusi, Agnese Ilaria Telloni	EXPLORING STUDENTS' PERSPECTIVES ON THE SUPPORT PROVIDED BY DIGITAL META-SCAFFOLDING
		Laura Graewert, Daniel Thurm, Stephan Hußmann, Bärbel Barzel	DIGITAL FORMATIVE SELF-ASSESSMENT

16:40 – 18:10	Research Reports 2.3.3 **"Methodological approaches"** Room 3 Chair: Giorgos Psycharis	Roberto Capone, Mario Lepore	A PROPOSAL OF MIXED METHOD ANALYSIS IN MATHEMATICS EDUCATION USING FUZZY COGNITIVE MAP
		Nektaria Panagi-Louka, Demetra Pitta-Pantazi, Constantinos Christou	ICT IN MATHEMATICS ACHIEVEMENT: EVIDENCE FROM ETIMSS 2019
	Research Reports 2.3.4 **"Tools for Teachers Designs"** Room 4 Chair: Eleonora Faggiano	Ulises Salinas-Hernández, Zeger-jan Kock, Birgit Pepin, Alessandro Gabbana, Federico Toschi, Jasmina Lazendic-Galloway	USING DIGITAL CURRICULUM RESOURCES IN CHALLENGE-BASED EDUCATION: A CASE STUDY WITH APPLIED MATHEMATICS AND PHYSICS STUDENTS
		Dimitris Diamantidis	THE USE OF FOCUSED AUTHORING DIGITAL TOOLS FOR LEARNING MATHEMATICS IN TASK DESIGN
		Panagiota Argyri, Zacharoula Smyrnaiou	THE EDUCATIONAL GAME CHOICO AS DIGITAL LEARNING ENVIRONMENT FOR SUPPORTING STRATEGIES FOR CAREERS DECISION MAKING PROCESS

Friday 9 June, 2023 – Maraslion Didaskalion

9:00 - 10:30	Workshop Sessions (The underlined author is also the chair of the workshop session)		
	Workshop Session 3.1 Room 1	Anica Eumann, Bärbel Barzel	IMPLEMENTING FORMATIVE ASSESSMENT STRATEGIES IN EVEREYDAY MATHEMATICS EDUCATION WITH AN UNDERSTANDING-ORIENTATED DIGITAL DIAGNOSTIC TOOL
	Workshop Session 3.2 Room 2	Mathias Tejera	3D PRINTING AND MODELING FOR MATHEMATICS EDUCATION: FROM THEORY TO PRACTICE
	Workshop Session 3.3 Room 3	Guido Pinkernell	TECHNICAL ADVANCES INITIATING DIDACTIC REFLECTION IN TEACHER EDUCATION
	Workshop Session 3.4 Room 4	Chronis Kynigos, Maria-Stella Nikolaou	CONSTRUCTIONIST AUTHORING SYSTEMS (EDUCATIONAL TECHNOLOGY LAB, E.D.S., PH.S., N.K.U.A.)
10:30 - 11:00	**Coffee Break**		
11:00 - 12:30	Keynotes 3.1 / Amfitheatre Maraslion Didaskalion		
	Nicholas Jackiw, Simon Fraser University. Chronis Kynigos, National Kapodistrian University of Athens. and others to be announced Chair: Alison Clark-Wilson (University College London)		Designing digital environments in the context of mathematics education. A Panel Discussion
12:30 – 13:30	**Light Lunch**		
13:30 – 15:00	Research Reports		
	Research Reports 3.1 **"Connections to curriculum"** Room 1 Chair: Allen Leung	Eleonora Faggiano, Federica Mennuni	STUDENTS' MEANING-MAKING PROCESSES IN THE DIGITAL ERA: HOW CAN THE TEACHER FOSTER MATHEMATICAL DISCOURSE?
		Eleonora Faggiano, Ana Isabel Sacristán, Helena Rocha, Marisol Santacruz-Rodríguez	A CROSS-NATIONAL COMPARISON ON HOW THE CONGRUENCE AND SIMILARITY OF FIGURES IS ADDRESSED WITH TECHNOLOGY
		Ana Isabel Sacristán, Homero Enríquez-Ramírez	TECHNOLOGY INTEGRATION BY PRIMARY-SCHOOL TEACHERS IN RURAL MEXICO AND THE DESIGN OF A PROFESSIONAL DEVELOPMENT PROGRAMME
	Research Reports 3.2 **"Digital games"** Room 2 Chair: Maria Latsi	Rebecca Samantha Stäter, Matthias Ludwig	DESIGNING A DIGITAL LEARNING ENVIRONMENT FOR COMPUTATIONAL THINKING: THE FOUR PILLARS OF <COLETTE/>
		Ljerka Jukić Matić, Sonia Palha	INTEGRATING DIGITAL GAMES IN THE CLASSROOM: A CASE STUDY WITH GAME PROBCHALLENGE
		Sonia Palha, Anders Bouwer, Daan van Smaalen, Kevin Hooijschuur	FOSTERING JOYFUL PRACTICE WITH DIGITAL EDUCATIONAL GAMES: THE FUNCTION DUNGEON GAME
	Research Reports 3.3 **"Teaching and learning of Geometry"** Room 3 Chair: Bärbel Barzel	Camilo Sua, Angel Gutiérrez, Adela Jaime	OBSERVING THE SPACE THROUGH THE PLANE: ANALOGIES PROMOTED WITH DYNAMIC GEOMETRY ENVIRONMENTS
		Maria Rosaria Del Sorbo, Maria Giuseppina Adesso, Roberto Capone, Oriana Fiore, Giovanna Quercitelli	GEOMETRY IN THE METAVERSE: ARE HIGH SCHOOL TEACHERS RESPONSIVE TO CHANGE?
		Dubravka Glasnović Gracin, Ana Krišto	DO DIGITAL TEXTBOOKS OFFER NEW OPPORTUNITIES FOR GEOMETRY EDUCATION? AN ANALYSIS OF TASK FEATURES

	Research Reports 3.4 **"Teachers' professional identity and development"** Room 4 Chair: Birgit Pepin	Daniel Thurm, Eirini Geraniou, Uffe Thomas Jankvist	UNPACKING TEACHER BELIEFS ABOUT MATHEMATICAL DIGITAL COMPETENCY
		Francesco Saverio Tortoriello, Ilaria Veronesi	USING GRAPHING CALCULATORS IN TEACHER EDUCATION
		Giulia Lisarelli, Mirko Maracci, Bernardo Nannini	THE MOVING ARROWS ENVIRONMENT: A DIGITAL ARTIFACT FOR MEDIATING THE MEANINGS OF VARIABLE AND UNKNOWN
15:10 - 16:40	Keynotes 3.2 / Amfitheatre Maraslion Didaskalion		Scalling up in-service professional develompent for teachers: a 20-year intervention towards the use of digital media in classroom
	Dimitra Egarchou, CTI Diophantus, Chronis Kynigos, NKUA Chair: Charalampos Zagouras, CTI Diophantus, University of Patras		
16:40 - 17:10	**Coffee Break**		
17:10 - 18:40	Teacher's Posters		
17:30 - 19:00	Museum (Optional)		
19:00 - 20:o0	Walk & Talk: Aristotle's Peripatetics		
20:00 - 23:00	Conference Dinner (Optional)		

Saturday 10 June, 2023 – Maraslion Didaskalion

9:00 - 10:30	Workshop Sessions (The underlined author is also the chair of the workshop session)		
	Workshop Session 4.1 Room 1	Amber Manders	CREATE YOUR OWN MATH EDUCATIONAL CONTENT WITH SOWISO
	Workshop Session 4.2 Room 2	Michael William Rumbelow	AUGMENTING BLOCK PLAY: USING AI TO RECOGNISE AND RESPOND TO ARRANGEMENTS OF PHYSICAL BLOCK MANIPULATIVES
	Workshop Session 4.3 Room 3	Myrto Karavakou, Daan van Smaalen	GAMMA - Games for Mathematics Education
	Workshop Session 4.4 Room 4	Bjarnheiður Kristinsdóttir	USING SILENT VIDEO TASKS TO SPARK DISCUSSION IN THE MATHEMATICS CLASSROOM
10:30 - 11:00	**Coffee Break**		
11:00 - 12:30	Keynotes 4.1 / Amfitheatre Maraslion Didaskalion		
	Plenary International Projects Chair: Giorgos Psycharis (NKUA)		
12:30 – 13:30	**Light Lunch**		
13:30 - 15:00	Keynotes 4.2 / Amfitheatre Maraslion Didaskalion		
	Plenary Panel: Celia Hoyles (University College London), Richard Noss (University College London), Marcelo Milrad (Linnaeus University), Sonia Abrantes Garcêz Palha (Hogeschool van Amsterdam), Christian Bokhove (Southampton University) Chair: Manolis Mavrikis (University College London)		
15:00 – 15:30	Closing Ceremony Chair: Hans-Georg Weigand (Wuerzburg University)		