

Learn STEM Innovative Model of learning STEM in secondary schools



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WP2-LearnSTEM Pedagogical Model-A4- Inquiry learning package Mobile games in STEM Education

Introduction:

To complement the LearnSTEM learning program, mobile games as learning tools were selected that offer STEM content in a playful way. Mobile games are listed in the partner languages and in English.These mobile games are from external resources and serve only to complement the project, they were not created by the LearnSTEM consortium.

Find these interactive games in the LearnSTEM Online Learning Platform on https://learnstemwebsite.eduproject.eu/games

COUNTRY	Game Name	Link or How to access	STEM Area (e.g., Science, Tech, Eng, Math)	Brief Description	Language (EN/Native)
Germany					
1	Math Playground	https://www. mathplaygrou nd.com/	Maths	The website provides different mini-games for several topics of mathematics.	EN
2	Math Games	https://www. mathgames.c om/	Maths	The website offers several games for learners of all grades.	EN
3	Idle World	https://www.c razygames.c om/game/idle -world	Science	Idle World is a creative simulation game where you build a world from cubes, crafting life after the Big Bang. Use energy and natural elements to shape Earth's landscapes, create trees, rivers, animals, and humans, and watch your pixel world come alive. Embrace the challenge of crafting a thriving planet and explore endless possibilities in this imaginative journey.	EN

4	Alchemy	https://www.c razygames.c om/game/alc hemy	Science	Alchemy is a puzzle game where you combine two elements to make the third one. Do some experiments to discover them all.	EN
5	Mini Scientist	https://www.c razygames.c om/game/min i-scientist	Engineering	Mini Scientist is a point and click adventure that lets you play as a little dude who wants to go to space. There's a little problem though - his rocket needs one more part, the engine! You'll need to help him go through a guarded facility to find the part he needs so he can go to his dream trip to space.	EN
6	Elemente Wissen	https://kappe nberg.com/ak minilabor/app s/akriddle.ht ml	Chemistry	A game for learning the names and symbols of the elements.	DE
7	AK Riddle	https://kappe nberg.com/ak minilabor/app s/akriddle.ht ml	Chemistry	In this game, learners can answer a quiz on chemistry content.	DE
8	Schlaukopf	https://www.s chlaukopf.de/	Physics	This websites offers quizzes for all grades and their different topics.	DE
9	Turtle Coder	https://www.c ode-your- life.org/Akad emie/Fuer_Ki nder/1369_T urtle_Quadra t.htm	Coding	With Turtle Coder, the learner learns to code so that the turtle builds a square.	DE
10	BASF Virtual Lab	https://basf.ki ds- interactive.de /	Chemistry	With the help of Doctor Blubber, the learner is in a virtual lab and can play through various levels with different challenges.	DE
Greece					
1	Brain it on!	https://playho p.com/app/23 9644	Physics	The app adds to kids' knowledge of physics helping them to understand the surrounding aspects and phenomena. Subsequently, they can feel more connected to the world around them.	EN

2	Construction City 2	https://constr uction-city- 2.en.softonic. com/android	Engineering	An amazing app to introduce young learners to the various domains of engineering primarily, physics and construction.	EN
3	Tynker	https://www.t ynker.com/	Coding	Minecraft coding exercises, robotics programming, and flight path programming games. The app introduces children to the world of robotics.	EN
4	Sky Safari	https://play.g oogle.com/st ore/apps/det ails?id=com.s imulationcurri culum.skysaf ari7&hl=en	Astronomy	An excellent resource for young learners to learn about outer space, astronomy, clouds, celestial bodies, and the sky.	EN
5	Monster Math	https://www. monstermath. app/	Mathematics	The app offers a great blend of mathematics, games, and storytelling.	EN
6	Μαθηματικά παιχνίδια Ελληνικά (Math games Greek)	https://play.g oogle.com/st ore/apps/det ails?id=com.r vappstudios. math.kids.co unting&hl=el	Maths	It is a fun addition and subtraction game, an educational game designed to help preschool and kindergarten children understand basic math, to count and compare numbers.	GR
7	MAΘHMATIK A E-ΣT ΔHMOTIKOY (MATHS 5th- 6th CLASS OF PRIMARY SCOOL)	https://wordw all.net/el/reso urce/283089 7/%CE%BC %CE%B1%C E%B8%CE% B7%CE%BC %CE%B1%C F%84%CE% B9%CE%BA %CE%B1- %CE%B5- %CF%83%C F%84- %CE%B4%C E%B7%CE% BC%CE%BF %CF%84%C E%B9%CE% BA%CE%BF %CF%85	Maths	Maths for students 10-11 years old	GR

8	Λαβύρινθος (Maze)	https://games .gnhm.gr/maz e/	Biology	Botanis, sea/water plants, animals and their connection with environment	GR
9	Προσομοιώσε ις (Simulations)	https://phet.c olorado.edu/ el/simulations /browse	Physics, Chemistry, Maths, Bilogy, Earth Science	Interactive Simulations on several chapter of Physics, Chemistry, Maths, Bilogy, Earth Science	GR
10	Εργαστήριο επιστημών γυμνασίου (High school science lab)	https://play.g oogle.com/st ore/apps/det ails?id=com. hazelfunstudi o.girls.high.s chool.science .lab&hl=el	Science	Offers lots of fun experiments for crazy science game lovers.	GR
Italy					
E-GAMES	IN ENGLISH				
1	Heat Energy	https://scicha mp.com/Phys ics%20game s/Heat%20en ergy2xc/	Physics	Click/tap to make the balloon fly. Dodge the various obstacles along the way. Answer a question if you get hit by an obstacle to continue. Answer a number question to create a rainbow	English
2	Physical quantities and measurement s game	https://scicha mp.com/Phys ics%20game s/Physical%2 0Quantities% 20and%20M easurements 2x/	Physics	Just click to break the glass block and help penguin to reach the fish. Answer multiple choice questions on area, volume and density and their units and conversions as you play.	English
3	Sound energy game	https://scicha mp.com/Phys ics%20game s/sound2xc/	Physics	In this fun platformer game you have to answer questions on the theory of sound as you cross various levels in the Temple of Sounds. Use arrow keys to move and jump.	English
4	Electricity and Magnetism game – The challenge	https://scicha mp.com/Phys ics%20game s/Electricity% 20and%20m agnetism2xc/	Physics	This game is ideal for middle and high school students to get interested in the topics of electricity and magnetism.	English
5	Photosynthesi	https://scicha	Biology/Scien	In this photosynthesis game you	English

	s game	mp.com/Biolo gy%20games /Photosynthe sis%20and% 20respiration 2x/	ce	first select the input and output steps involved in the photosynthesis process. Then answer multiple choice questions on photosynthesis and grow fruits.	
E-GAMES	IN ITALIAN				
1	Effetto serra (Greenhouse effect)	https://phet.c olorado.edu/s ims/html/gree nhouse- effect/latest/g reenhouse- effect_all.htm l?locale=it	Science	It is a simulation game that describes the effect of greenhouse gases and clouds on sunlight, infrared radiation, and surface temperature. It also explains why greenhouse gases affect temperature.	Italian
2	Densità (Density)	https://phet.c olorado.edu/s ims/html/den sity/latest/de nsity_all.html ?locale=it	Science	It is a simulation game that describes how the concept of density depends on the mass and volume of a material. It explains how objects of the same mass can have different volumes and objects of the same volume can have different masses.	Italian
3	Pressione (Pressure)	https://phet.c olorado.edu/s ims/html/und er- pressure/late st/under- pressure_all. html?locale=i t	Physics	It is a simulation game that describe how the pressure in air and water changes as a function of depth. It shows how the pressure changes. It shows the value of the pressure in different situations.	Italian
4	Magnete e bussola (Magnet and compass)	https://phet.c olorado.edu/s ims/html/mag net-and- compass/late st/magnet- and- compass_all. html?locale=i t	Science	The simulation game shows the direction of the magnetic field at different positions around a bar magnet and an electromagnet. It describes the strength of the magnetic field at a distance in a quantitative and qualitative way. It shows how the Earth's magnetic field relates to a bar magnet	Italian
5	Elettricità statica e palloni (Static	https://phet.c olorado.edu/s ims/html/ballo	Science	The simulation game describes and models basic concepts of static electricity (charge transfer,	Italian

	Electricity and Balloons)	ons-and- static- electricity/late st/balloons- and-static- electricity_all. html?locale=i t		attraction, repulsion, grounding) It shows force versus distance for different charge configurations	
Romania					
1	Inventioneer s	https://play.g oogle.com/st ore/apps/det ails?id=se.fili mundus.inve ntioneers https://apps.a pple.com/us/ app/invention eers/id92620 2053	Science, Engineering	Inventioneers is an educational STEM game that stimulates children's logical thinking and creativity through physics-based puzzles. Players create inventions using principles such as gravity and mechanical forces, solving problems with interactive pieces. With a friendly interface and progressive challenges. The game has won Parents' Choice Gold Award and was nominated at the Nordic Game Awards 2015.	EN
2	Trash Monsters	https://play.q oogle.com/st ore/apps/det ails?id=com. bunnyandgno me.mullag https://apps.a pple.com/mn/ app/trash- monsters/id1 046221391	Science	Trash Monsters is an educational game with interactive puzzles, quests and mini-games that teaches children about recycling and environmental protection. Although it's not a classic STEM game, it integrates concepts from science and ecology. Awarded at technology conventions and exhibited at the ZKM in Karlsruhe, Germany. Available for free, it offers an educational and engaging experience for the whole family.	EN

3	bekids Coding	https://play.g oogle.com/st ore/apps/det ails?id=com. bekids.kaka https://apps.a pple.com/us/ app/bekids- coding-code- games/id162 9576108	Tech, Engineering	bekids Coding is an educational STEM game for children aged 6-12 that teaches coding through interactive missions. Although it is designed for children in particular, it can also be useful for teenagers or anyone who wants to learn fundamental programming concepts. Recommended by teachers, it helps develop logical thinking and problem-solving skills.	EN
4	Math Riddle and Puzzle Game	https://play.g oogle.com/st ore/apps/det ails?id=com. BlackGames. MathRiddles https://apps.a pple.com/us/ app/math- riddles-and- puzzles/id14 55734504	Math	It is a STEM educational game that challenges players with logic puzzles involving basic and complex math operations. Recommended by teachers, the game improves critical thinking and problem-solving skills. Suitable for all ages, starting from toddlers, this game is available for free and helps develop concentration and memory through daily challenges.	EN
5	Solar System by Clementoni	https://play.g oogle.com/st ore/apps/det ails?id=it.cle mentoni.siste masolare	Science, Tech, Eng, Math	Solar System by Clementoni is a STEM game that allows children to explore the Solar System, learning about planets, the Sun and celestial bodies. Through interactive activities, they discover	EN

				astronomy and physics concepts, comparing sizes, masses and characteristics of planets. In-game quizzes help reinforce what they have learned.	
6	Planetarium Projector	https://play.g oogle.com/st ore/apps/det ails?id=it.cle mentoni.plan etario	Science, Tech, Eng, Math	Planetarium Projector is a STEM app for kids that lets them explore the Universe through augmented reality. They can learn about constellations, planets and the conquest of space by visualizing 3D models, answering educational questions and comparing planet weights and sizes.	EN
7	Labo Mechanical Studio	https://play.g oogle.com/st ore/apps/det ails?id=com.l aboladoapp.l abo_mechani cal_studio&hl =r0	Engineering	Labo Mechanical Studio is a free, teacher-recommended STEM game that helps children learn mechanical concepts by creating interactive devices. The game develops logical thinking and problem-solving skills in an engaging and educational way.	EN
		https://apps.a pple.com/us/ app/labo- mechanical- studio- kids/id15853 27314			
8	Khan Academy	<u>https://play.g</u> oogle.com/st ore/apps/det	Science, Math	Khan Academy Kids is a free, teacher-recommended educational app that supports	EN

	Kids	ails?id=org.k hankids.andr oid https://apps.a pple.com/us/ app/khan- academy- kids/id13784 67217		STEM learning. It offers interactive lessons and games on math, science, reading and more, developing logical thinking and essential skills. Available commercial-free, it's a perfect tool for early education.	
9	Matematică Distractivă	https://play.g oogle.com/st ore/apps/det ails?id=net.s peedymind.m ental.arithmet ic.trainer.lear ning.games.p ractice.k5.gra de.math.vs.sli mes&hl=ro	Math	Matematica Distractivă (Fun Math) is a free STEM game that helps kids develop mental arithmetic skills such as addition, subtraction, multiplication and division. Through customizable levels and interactive challenges, the game makes learning math more interesting and motivating, stimulating logical thinking in an engaging way.	RO
		https://apps.a pple.com/ro/a pp/matematic %C4%83- distractiv%C4 %83- jocuri/id1534 886813?I=ro			
10	Applaydu: joc și descoperire	https://play.g oogle.com/st ore/apps/det ails?id=com.f errero.applay duGP	Science, Tech, Eng, Math	Applaydu is an educational app, that combines augmented reality and creative games to teach children through interactive activities. They can create characters, solve puzzles and explore	RO

				STEM concepts in a fun and educational way.	
11	Jocuri pentru copii STEAM	https://play.g oogle.com/st ore/apps/det ails?id=com. pescAPPs.St eamKids	Science, Tech, Eng, Math	With this app children learn in a fun way. Without realizing it, they are working with logic, art, music, coordinates, the laws of physics, mathematics, spatial vision even programming! Contains 8 educational games designed with the STEAM philosophy. Perfect for preschool and elementary school!	RO/EN
12	GCompris	https://play.g oogle.com/st ore/apps/det ails/GCompri s Educationa I_Game?id=n et.gcompris.f ull&hl=ro	Science, Tech, Eng, Math	GCompris is a free educational app, available in Romanian, offering over 100 interactive activities. Covering STEM areas such as math, science, geography and computer science, GCompris helps children learn through engaging games that develop logical thinking and essential skills. Activities include math operations, learning how computers work, water cycles, renewable energy and more.	RO
13	VoxiKids	https://play.g oogle.com/st ore/apps/det ails?id=com. uberpixel.nu mmo&hl=ro	Science	VoxiKids is a free educational app for children that combines Romanian language learning with STEM activities. It offers interactive games, augmented reality and develops language and cognitive skills. The app is available on Android and iOS and is approved by the Ministry of Education.	RO

14	Jocuri matematice	https://play.g oogle.com/st ore/apps/det ails?id=com.r vappstudios. math.games. kids.addition. subtraction.m ultiplication.di vision&hl=ro	Math	This free, teacher-recommended STEM math game is perfect for children, but can be useful for teens and even adults. It contains interactive games to learn and practice addition, subtraction, multiplication, division, fractions, decimals and operations combined, all in an engaging way. With no commercials, the game is designed to improve math skills in a friendly and stimulating environment, ideal for continuous learning.	RO
15	Alchimie Amestecă și deschide!	https://play.g oogle.com/st ore/apps/det ails?id=com.il yin.alchemy& hl=RO	Science	This STEM game combines science and chemistry, allowing players to experiment with elements to discover new reactions. Free and engaging, it offers over 500 recipes and is available in English and Romanian.	RO/EN
Türkiye		Į	Į	I	
1	Twin Bilim	https://apps.a pple.com/tr/a pp/twin-bilim- stem- e%C4%9Fiti mleri/id14795 59635?I=tr	Science, Tech, Eng, Math	Twin provides sustainability and environmental education by teaching STEM+A, namely Science (Science), Technology (Technology), Engineering (Engineering), Mathematics (Mathematics) and Art (Art). Contents are linked to the United Nations Sustainable Development Goals	TR
2	STEM4GIRL S	https://apps.a pple.com/tr/a pp/stem4girls	Science, Tech, Eng,	STEM4GIRLS is an interactive mobile application where young girls interested in STEM fields	TR/EN

		/id650413888 3?l=tr	Math	can get education and information. The application was designed specifically to inspire, support and motivate girls in STEM subjects.	
3	Labo Mekanik Stüdyo	https://apps.a pple.com/tr/a pp/labo- mekanik- st%C3%BCd yo-stem- oyunu/id1585 327314?l=tr	Science, Eng	It is an application that allows the user to make simple and interesting devices. With this application, they gradually learn the skills of making various interesting mechanical devices through imitation, practice and free creation.	TR
4	mBlock- Blockly	https://apps.a pple.com/tr/a pp/mblock- blockly-stem- education/id1 146685354?I =tr	Science, Tech, Eng, Math	mBlock Blockly, renamed from the mBlock App, is a graphical programming software made by Makeblock for STEAM education. It introduces users to the world of robotic programming. Without any prior knowledge, users can start programming robots by playing through games; then they can personalize their mBots with newly-learnt programming skills. mBlock Blockly opens up new minds for children: by means of programming, mBlock Blockly introduces program solving strategies and ways to design a project. mBlock Blockly nurtures creative thinkers of the future with communications and hands- on projects.	EN
5	Makeblock	https://apps.a pple.com/tr/a pp/makebloc k-play-stem- robots/id9188	Science, Tech, Eng, Math	Makeblock APP is a robot control software in smart devices. Everyone can directly control Makeblock robots using official controller in the software, or creates and programs a specific controller to achieve	EN

		04737?l=tr		richer robotic functionality. Makeblock APP gives the user a way to grow. You can use the controller function to control directly, you can also drag the control to create a different multi- function console; advanced users can even programmatically through the control to achieve more complex functions.	
6	STEM Buddies	https://apps.a pple.com/tr/a pp/stem- buddies-kids- learning- app/id138041 3683?l=tr	Science, Tech, Eng, Math	Ignite your child's passion for science with STEM Buddies! This educational app for child enthusiasts is meticulously created by experts and accomplished storytellers. STEM Buddies is not just another app for kids learning; it offers an enriching learning experience centered around 7 pivotal science themes.	EN
7	Science Experiment	https://apps.a pple.com/tr/a pp/science- experiments- funlab/id6670 397096?l=tr	Science	the ultimate app for curious kids and their families! Dive into a world of exciting experiments, creative crafts, interactive learning, inspiring stories, and unlimited printables that bring science, STEM, and creativity to life.	EN
8	Bilim ve Oyun Build	https://apps.a pple.com/tr/a pp/bi-li-m-ve- oyun- build/id12165 90312?l=tr	Science, Eng	The Mechanical Lab application was developed by Clementoni to make the assembly of your products easier and more fun. Through this free application for smartphones and tablets, your models will come to life on the screen piece by piece thanks to interactive 3D animations.	TR

9	Simple Machines by Tinybop	https://apps.a pple.com/us/ app/simple- machines-by- tinybop/id936 966570	Science, Eng	Simple Machines integrates with STEM curriculum: kids can alter and test each machine to learn about force and motion, actions and reactions, inputs and outputs, conservation of energy, mechanical advantages, and tradeoffs. Get free activity sheets at tinybop.com.	EN
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