

## GAME-BASED CURRICULUM

To be used together with [E-BOOK](#), which consists of lesson plans for teaching through gamification in special education classrooms.

Gamification is not an independent course but can be used in various lessons to change up learning and make it more interactive. Therefore, this curriculum gives an overview on what could be used in different subjects and specific lesson plans can be found in our E-book above.

### Curriculum Goals and Objectives

- *Academic Skills:* Enhance literacy, numeracy, and subject-specific knowledge (science, social studies).
- *Life Skills:* Develop social, communication, and daily living skills.
- *Cognitive Skills:* Improve memory, attention, and problem-solving.
- *Physical Skills:* Encourage fine and gross motor skills through interactive activities.

### Framework and Structure

#### *Age groups:*

- Primary (Grades 1-3)
- Intermediate (Grades 4-6)
- Middle School (Grades 7-9)

#### *Subjects\*:*

- Language Arts (Estonian, English)
- Mathematics
- Science
- Social Studies
- Art and Music
- Physical Education
- Speech Therapy
- Music
- Communication
- Physics

*\*Main subjects covered in E-book*



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## Game-Based Learning Approach\*

<p><i>Digital platforms for gamification</i></p>	<ul style="list-style-type: none"> <li>- <a href="https://www.gimkit.com/me">https://www.gimkit.com/me</a></li> <li>- <a href="https://www.canva.com/">https://www.canva.com/</a></li> <li>- <a href="https://www.soundtrap.com/musicmakers">https://www.soundtrap.com/musicmakers</a></li> <li>- <a href="https://genially.com/">https://genially.com/</a></li> <li>- <a href="https://lessonup.app/">https://lessonup.app/</a></li> <li>- <a href="https://nearpod.com/">https://nearpod.com/</a></li> <li>- <a href="https://www.classdojo.com/">https://www.classdojo.com/</a></li> </ul>
<p><i>Board Games</i></p>	<ul style="list-style-type: none"> <li>- Snake ladder game with different points and tasks</li> <li>- Obstacle course tasks</li> <li>- Word guessing games</li> <li>- Monopoly (replace some cards with subject related tasks)</li> </ul>
<p><i>Physical Activities</i></p>	<ul style="list-style-type: none"> <li>- <a href="https://play.google.com/store/apps/details?id=com.sixtostart.zombiesrunclient&amp;hl=en&amp;pli=1">https://play.google.com/store/apps/details?id=com.sixtostart.zombiesrunclient&amp;hl=en&amp;pli=1</a></li> <li>- <a href="https://navicup.com/">https://navicup.com/</a></li> </ul>
<p><i>Augmented Reality Platforms</i></p>	<ul style="list-style-type: none"> <li>- <a href="https://www.cospaces.io/">https://www.cospaces.io/</a></li> <li>- <a href="https://appadvice.com/game/app/catchy-words-ar/1266039244">https://appadvice.com/game/app/catchy-words-ar/1266039244</a></li> <li>- <a href="https://perceived.design/">https://perceived.design/</a></li> </ul>

*\*Some suggested digital platforms for classroom*

## Example Games and Activities

### Primary (Grades 1-3)

- Language:
  - Phonics Bingo: Helps with letter-sound recognition.
  - Word Puzzles: Simple crosswords and word searches.
  - Story Builder: Digital tool for creating simple stories.
- Mathematics:
  - Number Matching: Digital and physical games to match numbers with quantities.
  - Shape Hunt: Game to find and identify shapes around the classroom, can be done by using AR(augmented reality) too.
- Science:
  - Nature Explorer: AR-based game for identifying plants and animals.
  - Simple Experiments: Hands-on activities with step-by-step guidance.
- Social Studies:
  - Map Adventure: Board game to learn about a country's geography.
  - Cultural Quest: Create interactive digital game about a country's traditions and customs
  - Practice social situation in the classroom (role-playing games)
- Art and Music:
  - Art Color Matching: Provide color matching games where children match colors to famous paintings or objects in the classroom.
  - Sing-Along Sessions: Organize sing-along activities where students learn new songs and are rewarded for participation.
  - Musical Chairs: Play musical chairs with different types of music, encouraging students to listen and recognize various musical styles.
  - Shape Collages: Let students create collages using different shapes, earning points for identifying and using specific shapes and colors.
- Physical Education:
  - Animal Movement Games: Play games where children move like different animals (e.g., hop like a bunny, crawl like a bear) to develop motor skills.
  - Relay Races: Set up simple relay races where students pass a baton or complete a small task before the next person goes, rewarding teamwork and participation.
  - Balloon Volleyball: Have students play volleyball with balloons, promoting hand-eye coordination and teamwork.
  - Hopscotch: Use hopscotch to teach numbers and coordination, rewarding students for completing the course.



- Speech Therapy:
  - Sound Bingo: Create bingo cards with pictures of objects that start with target sounds, rewarding students for completing a row or column.
  - Storytime Adventures: Have students take turns adding to a story, practicing specific speech sounds or structures, and earning points for creativity and correct usage.
  - Rhyming Games: Organize games where students match rhyming words, earning points for each correct pair.
- Music:
  - Clap the Rhythm: Play a game where students clap back rhythms you play, rewarding accuracy and participation.
  - Song Creation: Have students create simple songs using a few notes, rewarding creativity and participation.
  - Musical Statues: Play music and have students freeze when the music stops, encouraging listening skills and rewarding those who stay still.
- Communication:
  - Picture Descriptions: Use picture cards and ask students to describe what they see, rewarding detailed descriptions and vocabulary usage.
  - Guess the Object: Play a game where one student describes an object and others guess what it is, encouraging clear communication and listening skills.
  - Follow the Leader: Play a game where students follow a leader's actions and words, promoting listening and communication.

## Intermediate (Grades 4-6)

- Language Arts:
  - Grammar Quest: Digital game focusing on sentence construction and grammar.
  - Reading Adventures: Choose-your-own-adventure books with comprehension questions.
- Mathematics:
  - Fraction Puzzles: Interactive games to understand fractions and decimals.
  - Math Relay: Physical game combining movement and math problem-solving.
- Science:
  - Lab Simulation: Digital tools simulating basic experiments.
  - Eco-Warrior: Game teaching about environmental conservation.
- Social Studies:
  - History Hunt: AR game exploring historical events and figures in Estonia.
  - Community Helpers: Board game about different professions and their roles.
- Art and Music:



- Art Puzzles: Create digital or physical puzzles of famous paintings that students must complete to learn about the art piece and its history.
- Music Composition: Use software that allows students to compose their own music, rewarding them for creativity and complexity.
- Art Scavenger Hunt: Organize a scavenger hunt in an art museum or gallery where students can earn points for finding specific pieces and answering questions.
- Virtual Art Exhibitions: Have students create their own digital art and curate a virtual exhibition, with peers voting on their favorite pieces
- Physical Education:
  - Fitness Bingo: Create bingo cards with different physical activities. Students must complete a row, column, or diagonal to win.
  - Step Challenges: Use fitness trackers to monitor steps, with students earning rewards for reaching certain milestones.
  - Obstacle Course Races: Set up obstacle courses with different stations, awarding points for completion and speed.
- Speech Therapy:
  - Interactive Storytelling: Use apps where students create and narrate their own stories, earning points for using target speech sounds or structures.
  - Sound Hunts: Create scavenger hunts where students find objects that start with or contain certain sounds.
  - Speech Therapy Bingo: Make bingo cards with target words or sounds that students practice during sessions.
  - Role-Playing Games: Develop role-playing scenarios where students must use specific language skills to progress.
- Music:
  - Rhythm Games: Use games like "Just Dance" or "Guitar Hero" to teach rhythm and timing.
  - Music Theory Quizzes: Create quizzes on music theory concepts using platforms like Quizizz or Kahoot.
  - Virtual Band Practice: Use software that allows students to practice and record parts of a song, then combine them to create a full band performance.
  - Songwriting Contests: Organize contests where students write and perform original songs, with peers and teachers judging.
- Communication:
  - Conversation Starters: Use card games with conversation starter prompts to encourage communication and social skills.
  - Digital Pen Pals: Pair students with digital pen pals to practice written communication, with rewards for regular participation.

## Middle School (Grades 7-9)

- Language Arts:
  - Debate Club: Structured debates on various topics to improve speaking skills.
  - Mystery Stories: Writing and solving mysteries based on clues.
- Mathematics:
  - Algebra Adventures: Game-based learning for algebra concepts.
  - Geometry Dash: Physical activities involving geometric shapes and properties.
- Science:
  - Physics Playground: Hands-on experiments and digital simulations.
  - Biology Quest: AR explorations of human body systems and ecosystems.
- Social Studies:
  - Civics Challenge: Interactive digital game on government and civic responsibilities.
  - Cultural Exchange: Projects and games about different cultures and global awareness.
- Art and Music:
  - Digital Art Competitions: Use graphic design software for students to create digital art pieces, awarding points for creativity and technique.
  - Music Production Projects: Allow students to use music production software to create their own tracks, with rewards for originality and technical skill.
  - Art History Escape Room: Design an escape room with puzzles related to art history, where students solve clues to advance, learning about different art periods.
- Physical Education:
  - Fitness Challenges: Create fitness challenges (e.g., push-up challenge, 5K run) with leaderboards and rewards for top performers.
  - Team Sports Tournaments: Organize tournaments in sports like soccer, basketball, or volleyball, awarding points for participation, sportsmanship, and victories.
  - Fitness App Tracking: Use fitness apps to track physical activity, with students earning badges for reaching milestones.
- Speech Therapy:
  - Debate Teams: Organize debate teams where students practice their speech skills on various topics, earning points for effective arguments and delivery.
  - Speech Presentation Competitions: Hold competitions where students present speeches on assigned topics, rewarding clarity, persuasiveness, and adherence to speech goals.
  - Role-Playing Scenarios: Use complex role-playing scenarios where students must navigate social interactions, earning points for successful communication.



- Music:
  - Music Production Projects: Have students create original music using production software, with rewards for creativity and technical skill.
  - Music Theory Apps: Use apps to learn and practice music theory, with students earning points for progress and accuracy.
  - Live Performance Critiques: Have students perform and critique each other's music, with rewards for constructive feedback and performance improvement.
- Communication:
  - Digital Pen Pals: Pair students with international pen pals, rewarding regular and meaningful communication.
  - Podcast Creation: Have students create their own podcasts on topics of interest, rewarding creativity, clarity, and content quality.
  - Social Media Projects: Design projects where students create and manage social media campaigns, learning about digital communication and responsible use.
- Physics:
  - Physics Simulation Games: Use simulation software for students to explore physics concepts, with points for completing challenges.
  - Engineering Projects: Have students build projects like bridges or catapults, rewarding creativity and understanding of physical principles.
  - Interactive Lab Activities: Conduct hands-on labs where students experiment with concepts like motion, energy, and forces, with rewards for successful experimentation and analysis.

## Accessibility and Adaptations

- Customizable Difficulty Levels: Adjust games based on individual student needs.
- Multisensory Approach: Use visual, auditory, and tactile elements to cater to different learning styles. Depending on your study group, choose the correct approach (some need more visualization, others prefer working with auditory elements).
- Assistive Technology: Incorporate speech-to-text, text-to-speech, and other assistive tools if needed. (such as speechify etc...)
- Inclusive Design: Ensure games are accessible for students with physical disabilities.

## Assessment and Feedback

- Formative Assessments: Ongoing assessments through game progress and performance. Give out points, stickers or other rewards for getting ahead in the task.
- Summative Assessments: Periodic evaluations through quizzes and projects.
- Feedback Mechanisms: Provide instant feedback through games and regular teacher-student interactions.

## Teacher and Parental Involvement

- Training Programs: Workshops and resources for teachers to effectively use game-based learning.
- Parental Guidance: Involve parents in the learning process through home-based game activities and progress updates.

## Resources and Materials

- Digital Resources: Tablets, computers, and educational software.
- Physical Resources: Custom board games, AR tools, and physical activity equipment.
- Educational Content: Curriculum-aligned materials tailored for special education.

