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EXTRACURRICULAR MODELS STEAM FOR THE INCLUSIVE CLASS

DELIVERABLE 3 WP-2 EXTRACURRICULAR APPROACH TO
INTERDISCIPLINARY STEAM PEDAGOGY FOR SEN CHILDREN



Co-funded by
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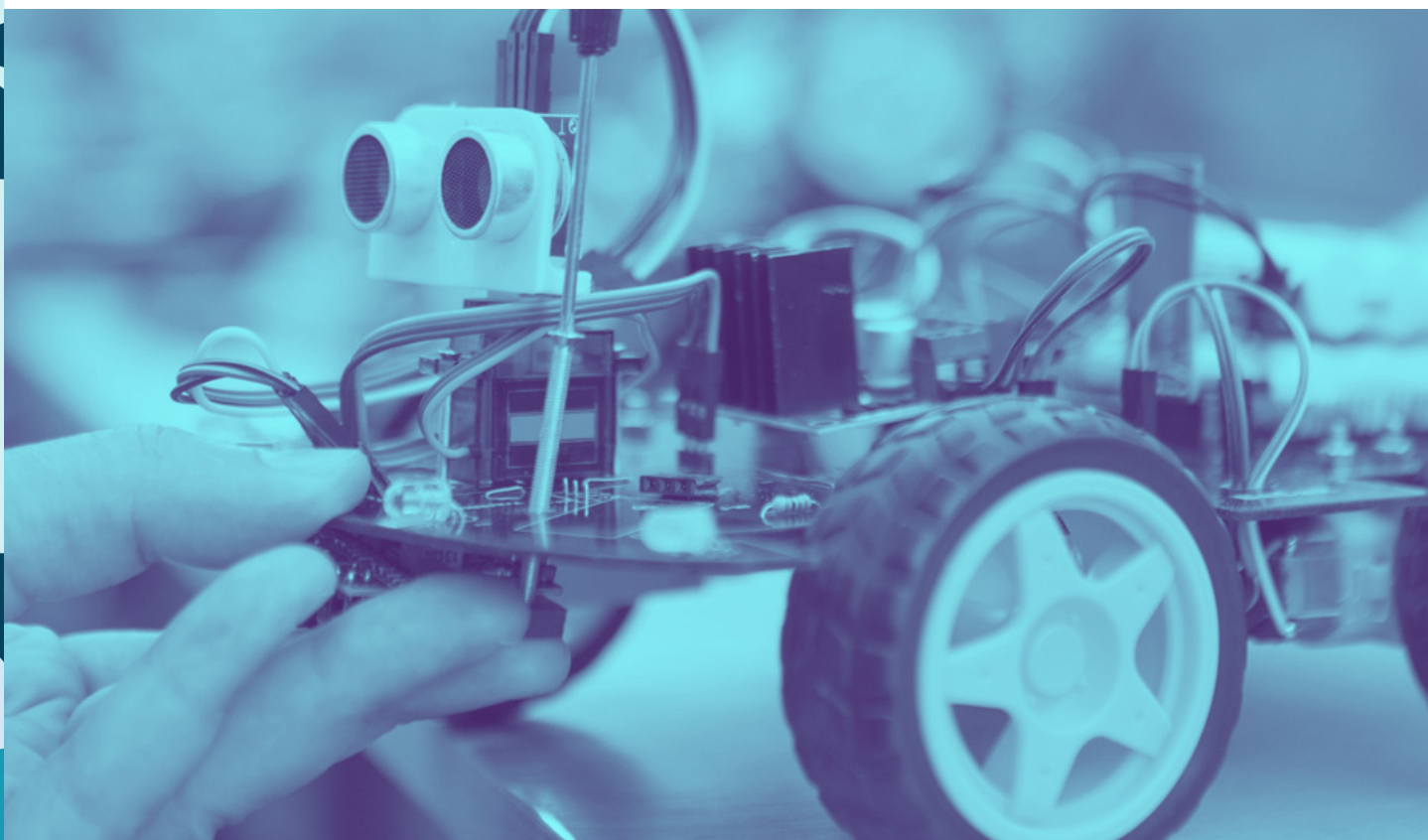
1. INTRODUCTION TO OPTIONAL CURRICULA IN MIXED CLASSES

The optional curricula developed are designed to provide flexible learning opportunities that cater to the interests and abilities of students in mixed classes. Mixed classes benefit from diverse instructional methods that address varying learning styles, allowing students to better engage with the material. These curricula include a variety of subjects that integrate STEAM components to foster a comprehensive learning experience.

The purpose of offering optional curricula in mixed classes is to address diverse learning needs and preferences, as well as to promote inclusion and equitable access to educational opportunities. Optional curricula allow students to explore subjects that match their personal interests, promoting engagement and motivation. They provide a more individualized approach to learning, accommodating different paces and styles. In mixed classes, which consist of students with varying abilities, backgrounds, and learning needs, optional curricula create an inclusive environment where all students can access quality education. By providing a range of options, students can choose subjects that suit their strengths, ensuring equitable learning experiences.

The key benefits of optional curricula for diverse student populations include fostering inclusion and encouraging social interaction and collaboration among students with different abilities. Optional curricula promote group activities and projects that require teamwork, helping students learn from each other's strengths and perspectives. Working in diverse teams encourages empathy, communication, and the sharing of ideas, which is crucial for personal and social development.

Furthermore, optional curricula create a supportive learning environment that values diversity. By offering choices, the curricula acknowledge and celebrate the differences in students' abilities and interests. This approach fosters a culture of respect and appreciation for diverse talents, contributing to a positive learning atmosphere.



IMPORTANCE OF STEAM OPTIONALS IN EDUCATION

STEAM stands for Science, Technology, Engineering, Arts, and Mathematics. Integrating STEAM into optional curricula offers several benefits. It enhances creativity and problem-solving skills by encouraging students to think outside the box and find innovative solutions, as well as providing opportunities for hands-on experimentation and exploration. STEAM education also encourages interdisciplinary connections and critical thinking by linking concepts across different subjects to deepen understanding and encouraging students to analyze problems from multiple perspectives. Additionally, it prepares students for a technology-driven future by building foundational knowledge in emerging technologies and equipping students with skills that are in demand in the modern workforce.



THE ROLE OF STEAM IN SKILLS DEVELOPMENT

STEAM education plays a significant role in promoting 21st-century skills, such as collaboration, adaptability, and digital literacy. It encourages teamwork through group projects and collaborative activities, and it helps students develop adaptability by challenging them with open-ended tasks. STEAM also supports individual interests and strengths by allowing students to choose projects that align with their passions and providing differentiated learning opportunities to cater to varied abilities.

Moreover, STEAM helps bridge gaps between traditional subjects and practical applications by demonstrating the real-world relevance of academic concepts and encouraging students to apply theoretical knowledge in practical contexts. This approach not only makes learning more engaging but also helps students see the value of what they are learning in their everyday lives.

HOW STEAM OPTIONALS FACILITATE LEARNING

STEAM optionals facilitate learning by providing practical, hands-on experiences that make abstract concepts more tangible. These curricula focus on integrating different disciplines, encouraging students to see connections between subjects that might traditionally be taught in isolation. For example, students may use engineering principles in art projects, apply mathematical concepts to real-life scenarios, or explore scientific ideas through creative problem-solving.

By blending arts with science and technology, STEAM optionals help students develop a holistic understanding of how different fields intersect and contribute to innovation. This interdisciplinary approach helps students better grasp the relevance of their studies, making the learning process more meaningful and engaging.

STEAM optionals also cater to diverse learning styles. Visual learners benefit from artistic and graphical representations, kinesthetic learners engage through hands-on projects and activities, and auditory learners can benefit from group discussions and collaborative problem-solving. By accommodating these varied learning preferences, STEAM optionals create an inclusive environment that maximizes the potential for student success.

CONCLUSION

In conclusion, optional curricula in mixed classes offer significant benefits by addressing diverse learning needs, promoting inclusion, and fostering a supportive learning environment. Integrating STEAM into these curricula enhances creativity, problem-solving skills, interdisciplinary connections, and prepares students for a technology-driven future. STEAM education also plays a key role in developing 21st-century skills, supporting individual interests, and bridging the gap between traditional subjects and practical applications.

It is crucial to foster both academic and practical skills through STEAM education to prepare students for future challenges by equipping them with a well-rounded skill set. Educators are encouraged to adopt and adapt these curricula to fit the needs of their students, ensuring flexibility in implementation to address specific classroom dynamics. The potential positive impact on student engagement and learning outcomes makes these optional curricula a valuable addition to the educational landscape.

JUSTIFICATION

Exploring Digital environments through Arts for school students with educational needs combines fundamental art concepts with practical applications on various digital means, preparing students to understand and explore the digital world through arts.

The justification for the existence of such option is given by the fact that it helps students with the formation of the following capabilities, skills and knowledge:

1.Improving basic Art skills:

- Students strengthen their basic arts knowledge like colour identification, colour combinations, line formations and shapes identification, music concepts (pitch, rhythm, pace), theatre core concepts (role playing, oral speech skills, social dexterities), dance basics (body exploration, ability to move rhythmically, cooperating with peers, spatial awareness etc.)
- Students will have a more vivid and appealing representation of their art knowledge through the digital representation of the skills learned, which can improve their academic understanding of both arts and digital means.

2.Introduction to Digital means:

- Students begin to know basic digital means concepts such as: digital sound, digital image, videos, interaction with the Omivista software, observation of Laser cutter machine etc.
- Knowing these basic concepts helps them understand the newly introduced digital means and be able to participate in recurring digital activities from an early age. For example, using digital drawing tablets can help students with fine motor skill challenges or the use of digital recording pen can alleviate speech difficulties.

3.Stimulating curiosity and interest in digital environments:

- By exploring digital environments and concepts with the help of arts, students can discover an interest in subjects such as: digital visual arts, digital music and sounds, podcasting etc.
- This early interest can lead to a deeper understanding of these fields and influence their future educational and occupational preferences. Incorporating digital visual arts in special education can enhance academic readiness, social development, and communication skills. Teachers can use digital platforms to create interactive and engaging art lessons.



4. Practical applicability and connections to everyday life:

- Students learn how to consolidate arts concepts to digital environments and vice versa: using practical arts activities as a basis for performing on a digital activity using the means learned (colours, messy play, movements, speech, music along with digital drawing, digital recording, digital images, digital sounds etc)
- These practical skills help students become more interested about arts and digital means in their everyday lives. It can also help introduce new vocabulary and skills, while encouraging critical thinking through the evaluation of digital content.

5. Development of critical and social thinking skills

- Students will learn to understand, interpret and perform different forms of arts (visual arts, music, dance, theatre) with the help of digital means and use them to make social and personal decisions based on the experiences obtained from these two educational pillars.
- Students develop creative thinking skills essential for social interaction and interpersonal improvement. In addition using digital tools can help provide multiple means of representation, engagement, and expression.

6. Stimulating creativity and innovation

- Lesson projects will include arts activities that stimulate creativity and innovation: creating arts, music, dance, role playing activities or simulating live or prerecorded performances.
- Students will develop skill on various forms of arts and digital versions of these arts, Therefore they will be able to demonstrate and advance their creativity and innovative aspects of their personality through these art and digital projects but also develop new projects of their own in the future.



SPECIFIC LEARNING OBJECTIVES:

1. Introducing the concept of drawing and colours, shapes, lines, stamping etc.

Objective: Students will be able to identify and name different colours and lines and shapes used in everyday life.

Objective: Students will be able to create simple art works using finger painting, stamping, lines but also digital means drawing like drawing tablet or the laser cutting machine of the woodcraft workshop to create 2D outlines on the light burning machine of the shapes learned in previous activities.

2. The basics of messy play method

Objective: Students will be able to experience, feel and identify different material used in their sensory experimentations.

Objective: Students will be able to experience the art fundamentals (colours, shapes, lines) through sensory experiences. By their exposure to various objects, materials, different touches, textures, feels and surfaces the students will understand the essential of arts through sensory integration and hands on involvement.

3. The concept of pitch, rhythm, pace, sound

Objective: Students will be able to understand and explain the difference between fast and slow, loud and soft, high and low pitch, pause etc.

Objective: Students will be able to create and perform simple music activities either live or with the help of digital means based on given instructions or improvisation depending on the activity requirements and previous knowledge acquired.

4. The notions of: role playing and theatre performance

Objective: Students will be able to use speech, movement, emotions, for communication and role performing for to serve the theatrical need of the theatre act.

Objective: Students will be able to improve their social skills through their understanding of role playing and performing.

5. Introduction of the concepts of: critical thinking, observation and mimicking.

Objective: Students will be able to explain their roles, observe the movements and script needed to imitate in their performance therefore improving their memory, imagination and critical thinking.

Objective: Students will be able to analyse their role playing activities, mimic movements and words needed for each role, participate and perform in a small theatrical acts, enactment and improvisation on the script given either live or through digital means.

6. Introducing to the fundamentals of dance and movement: balance, coordination, visual motor integration.

Objective: Students will be able to move according to the requirements of the activity either rhythmically and based on a sequenced pattern of movements given or improvising freely in the space given or on the omivista environment visual activities.

7. Simple wooden crafts in the woodcraft workshop with laser cutting machine.

Objective: Students will be able to create simple 2D shapes (fruit outlines, circles or any other shapes learned previously in art class and practiced on the omivista) on the Laser Cutting machine with the help of their woodcraft educators.

Objective: Students will be able to observe and help to the creation of the 2D wooden shapes and decorate it according to previous knowledge (colours, textures etc) and personal preferences.

8. Arts in everyday life

Objective: Students will be able to recognize situations where arts and digital means are used in everyday life, such as live performances versus pre-recorded, hand-crafted art versus digital art.

Objective: Students will be able to use art skills acquired along with digital skills taught to evaluate art and use it to express their preferences, creativity and feelings and use the arts as an alternative way of communication.



CONTENTS:

The course content consists of a variety of themes and topics that combine visual and performing arts concepts combined with means. The main themes and topics that will be included in this course are:

1. Basics of visual arts: the role of shapes, lines, colours and colour combinations, the concept of outlines textures various means of drawing (crayons, oil painting watercolours, fingerpainting etc.)
2. Basics of wood crafting: basic rules of safety in the workshop, distinguishing different types of wood or other materials according to the final use of the project, wood curing, wood sanding, wood finishing.
3. Basics of laser cutting: the function and use of the laser cutting machine, basic rules of the operation of the machine, the process of the 2D cutting, introduction to the Light Burn software used along with the machine.
4. Basics of music: the role and use of music symbols, pace in music, basic concepts of rhythm, pitch and sound, use of pause in musical pieces. Basics of simple musical composition and improvisation. Basic rules of music lessons like wait my turn to play or sing, not playing when not told or when there is pause in the musical piece etc.
5. Basic concepts of theatre: Basics of characters and of role playing, script, live performance, body movement, sequence, self-expression, creativity, cooperation with peers, self-awareness, social interaction.
6. Introduction to digital means: Introduction to various digital means (computers, laptops, tablets, Talking Pen, softwares like Omivista, Light Burn etc.) Basic safety rules of the use of electronics. Introducing several digital formats like digital sounds, digital images, videos etc.



DIDACTIC METHODOLOGY (SPECIFICALLY SEN)

The educators will teach these subjects to children with special educational needs (SEN), so they will have to use an approach that will take into consideration their needs, abilities and challenges. The teaching methodology will have to be inclusive, quickly adaptable and easily accessible to the students. The following methods could be considered:

1. An assessment for each student:

- An initial assessment of the abilities, needs and skills of every student will help the teacher to create the learning plans and activities. After the initial assessment, each special educator and specialist creates the Individualised Educational Plan (IEP) with their educational objectives and tasks for each student.
- Adaptation of materials and methodology to meet the needs of each student, using individualized educational plans

2. Design fun and creative activities:

- The use of educational games and fun activities will help the children to focus and gain concentration.
- Children can participate in activities that involve music, dance and role-play. They can learn through fun and creative activities.

3. Multisensory activities:

- Children will have hands-on activities that will help them experience the concepts through their senses.
- Multisensory involvement helps children to understand the concepts and process the new information.

4. Create small tasks and activities:

- Having children handle smaller tasks increase their confidence and helps them work on their own pace and abilities.
- By breaking down the tasks, children will have time to process the new information and succeed several times through the learning procedure.

5. Use of a repetitive routines and procedures:

- Using routines and procedures in the classroom makes class time more enjoyable and productive. They offer students a sense of stability and reduce the stress caused by the unknown.
- By having classroom rules and procedures that you follow, your students will know your expectations. Behavioural problems and distractions can decrease when students understand how to act.

6. Use of assistive technology and digital teaching programs:

- Use of the software "OMIVISTA" to make learning more flexible, accessible and attractive.
- Use of interactive "Talking Pen" to help children express themselves.
- Use of applications that help children communicate their thoughts and feelings.

DIDACTIC METHODOLOGY (NON-SEN)

The non-SEN methodology focuses on engaging students in a way that promotes creativity, independence, collaboration, and critical thinking. The teaching style is student-centered and inquiry-based, with an emphasis on experiential learning, allowing students to explore various themes and topics through guided discovery and active participation. Below are the methods that could be employed:

- **Project-Based Learning:** Emphasize project-based learning by having students work on projects that involve visual arts, music, theatre, and digital media. Each project will involve individual and group work, which allows students to explore their interests and fosters collaboration. Encourage students to design and create their projects from start to finish, allowing them to take ownership of their learning.
- **Collaborative Learning Activities:** Promote group work where students can exchange ideas and collaborate on creative projects. For example, students can work in pairs or groups to create a short theatre performance, musical piece, or art installation. Group discussions and peer feedback will be integral to the learning process, helping students to learn from each other and develop interpersonal skills.
- **Guided Exploration and Inquiry:** Encourage students to explore different art forms and materials at their own pace, providing them with opportunities to make choices based on their interests. Facilitate inquiry-based learning by posing open-ended questions and allowing students to experiment and discover solutions on their own.
- **Hands-On, Experiential Learning:** Use hands-on activities, such as drawing, crafting, and playing musical instruments, to help students experience and internalize concepts in a tangible way. Encourage experimentation with different materials (e.g., wood, paint, digital tools) to help students develop skills and learn through practice.
- **Creative Expression and Reflection:** Foster an environment where students feel comfortable expressing themselves through different forms of art, including drawing, music, and theatre. Provide opportunities for students to reflect on their work and the work of others, discussing what they learned, what challenges they faced, and how they overcame them.
- **Thematic Integration Across Subjects:** Integrate themes across different subjects, such as combining visual arts with digital tools (e.g., using software like Light Burn to create digital art) or music with theatre (e.g., creating a musical performance). This approach helps students make connections between different disciplines, reinforcing learning and encouraging a deeper understanding of the content.
- **Encourage Autonomy and Problem-Solving:** Give students opportunities to make decisions about their projects, such as selecting materials, planning their creative process, or choosing roles in group activities. Promote problem-solving by presenting challenges that require students to think creatively and find solutions, such as designing a woodcraft project or composing a simple musical piece.
- **Classroom Discussions and Presentations:** Encourage students to share their projects with the class, fostering communication skills and confidence in presenting their work. Facilitate classroom discussions around themes such as creativity, different art styles, and personal expression, allowing students to develop their critical thinking skills.



ASSESSMENT

Approaches to inclusive assessment require the acknowledgement that every child with special educational needs is unique and educators need to identify and select appropriate strategies that will facilitate their engagement in assessment. For the assessment, the teacher will be able to use the following assessment methods:

1. Individualized Assessments: Each student will be evaluated based on their abilities and needs. Whether it's through observations, projects, portfolios, or alternative assessments, the goal remains the same: to accurately assess what our students know and can do.
2. Inclusive and Accessible Assessments: Every student, regardless of their abilities, should have equal opportunities to demonstrate their knowledge and skills. This requires us to provide necessary accommodations or modifications to ensure that assessments are accessible to all. Whether it's providing extra time, allowing for oral responses or using images, utilizing assistive technology, these accommodations enable students to fully participate in assessments without compromising the integrity of the evaluation.
3. Ongoing Monitoring and Progress Assessment: Ongoing monitoring and progress assessment are essential components of effective assessment in Special Education practices. By implementing continuous assessment methods, like observing the students throughout their activities, we can track our students' development over time. The goal is to ensure that our students are making meaningful progress towards their goals. The Individualised Educational Plan (IEP) is used as point of reference throughout the whole process.
4. Collaboration is Key: Collaboration is key to developing effective assessment practices in Special Education. It's essential to work closely with fellow educators, parents, and specialists to ensure that our assessments are not only accurate but also supportive of our students' overall growth and success. In particular in special schools different specialties collaborate before, during and after the assessment. The learning objectives set by a special educator or other specialist are discussed and worked collaboratively and assessed during the process in different educational contexts.
5. Final projects and presentations: Recognition of all educational objectives and achievements through some gamified projects (theatre performance using the technology learned (talking pen, omivista activities), storytelling with digital means presenting their process of work with digital images, sound and videos, digital games) that integrate concepts presented and learned during the course. Presentation of projects: (2d woodcraft creations from laser cutting, musical pieces, dance performance, art creation, theatrical play) to be presented in front of the class from each student or a group of students in order to assess the student's understanding of the topic as well as a boosting students' self-esteem and self-expression by applauding their effort throughout the whole process.

In order to conduct an effective and attractive "Digital Means Through Arts" course, it is essential to have a variety of materials and resources to support the learning process. Here are some examples of materials and resources needed:

RESOURCES REQUIRED FOR THE COURSE:

1. Traditional Visual Arts and Messy play teaching materials: specialized visual arts material like, sketchbooks, canvases, colours, crayons, watercolours, brushes, playdough, blackboard/whiteboard and markers/chalks, simple materials for stamping like pieces of foam or fruits, pencils, pens, rulers and other aids for drawing shapes, A4 paper, activity reports and learning logs.

2. Messy Play Materials: big bowls, squishy animals or other objects according to the thematic (fruits, shapes, etc), water, sand, rice, cotton, flour, playdough, foam, clay, mud, sawdust, fabrics, felt, craft paper, crinkled paper, creped paper, glossed paper, straws, wood grill sticks, fabrics, cord, ribbons, scissors, glue, food colourings, brushes, sanding paper, pines, pencil shavings etc.

3. Traditional Music teaching materials: musical instruments like metallophone, xylophone, boomwakers, glockenspiel, claves, percussion instruments, flash cards with the notes or other music symbols (treble clef, pause, coloured dots etc).

Other materials: Fabrics, coloured paper, coloured balls, speaker, computer, omivista software, microphones, prerecorded music.

4. Digital resources and technology: computers and tablets (for access to online resources, educational software and interactive applications), access to the Internet and online educational platforms, e-learning platforms and online educational resources, projector and screen (for presentations video, simulations and viewing multimedia content), Omivista software, Light BurnSoftware, Laser Cutting Machine, Talking Pen etc.

5. Wood crafting resources: various types of wood, various types of sanding paper, wood crafting tools (safety glasses, triangle, angle, hand saw, tape measures, claw hammer, plane, screws, screwdriver, rasp, set square, wood file, pressures), wood curing solutions, wood varnishes, brushes.

6. Laser Cutting materials: appropriate wood or other materials that the laser cutter machine could cut, Light Burn software, computer, scanner, pre-drawn outlines or images found on the internet.

7. Dance materials: Fabrics, mats, balls, stretch bands, coloured paper, prerecorded music, position marks (coloured stickers), balance hedgehog pods.

COURSE TITLE: SCIENCE THROUGH CULTURE AND ENVIRONMENT

JUSTIFICATION

This "Science through Culture and Environment" course for elementary and middle school students combines foundational scientific concepts with practical applications in cultural contexts and environmental awareness. It is designed to engage students with both scientific and cultural content, thereby fostering a holistic understanding of their surroundings.

The justification for the course is based on its role in developing the following abilities, skills, and knowledge:

1. Understanding fundamental scientific concepts Students gain foundational knowledge in the following scientific concepts: scientific process, states of matter, energy basics, forces and motion, the human body, the Earth and its resources, weather and climate, space and the solar system, living things and their needs, and simple chemical reactions. By focusing on practical, hands-on activities, students experience how science influences the environment and culture.
2. Awareness of cultural practices and their relationship to the environment Students learn how culture shapes, and is shaped by, the environment, understanding concepts like resource use, sustainability, and traditional ecological knowledge.
3. Promoting curiosity and awareness about nature Students develop an appreciation for nature through activities like observing local ecosystems, investigating cultural practices, and understanding how people interact with their environment.
4. Development of observational and experimental skills Students learn how to make observations, conduct experiments, and record findings. Skills in data analysis are cultivated to help students draw conclusions about natural and cultural phenomena.
5. Practical applicability and connections to everyday life Students explore topics such as recycling, renewable energy, and sustainable agriculture to see science's direct impact on their daily lives.
6. Development of critical thinking and problem-solving skills Students are encouraged to identify environmental issues, think critically about their causes, and propose viable solutions based on scientific principles.
7. Encouraging responsible citizenship This course helps students become more environmentally and culturally conscious citizens, understanding their role and impact in protecting and sustaining their communities and the natural world.
8. Stimulating creativity and cross-disciplinary connections Students are engaged in projects that integrate science with culture and arts, stimulating creativity by involving storytelling, traditional practices, and art in their learning process.



SPECIFIC LEARNING OBJECTIVES:

Understanding ecosystems

- Objective: Students will be able to identify and describe different ecosystems and their characteristics.
- Objective: Students will learn about the interdependence of organisms within an ecosystem and the role of humans in maintaining balance.

Exploring cultural practices related to the environment

- Objective: Students will be able to explain how certain cultural practices contribute to sustainability (e.g., traditional farming techniques, communal resource management).
- Objective: Students will explore how cultural beliefs and values influence environmental stewardship.

Introduction to basic environmental challenges

- Objective: Students will be able to describe key environmental challenges such as pollution, climate change, and biodiversity loss.
- Objective: Students will propose simple solutions to mitigate these challenges in their community.

Scientific inquiry and experimentation

- Objective: Students will learn how to conduct simple experiments to explore scientific concepts related to the environment.
- Objective: Students will develop skills to formulate hypotheses, gather data, and draw conclusions.

Energy and sustainability

- Objective: Students will be able to differentiate between renewable and non-renewable energy sources.
- Objective: Students will learn how energy consumption impacts the environment and propose ways to reduce their carbon footprint.

Understanding resource cycles

- Objective: Students will understand the concept of natural resource cycles such as the water cycle, carbon cycle, and nutrient cycles.
- Objective: Students will observe and record examples of resource cycles in their local environment.

Environmental conservation practices

- Objective: Students will understand the importance of conservation and describe ways to protect local flora and fauna.
- Objective: Students will engage in activities such as planting trees or community clean-ups to foster direct engagement with conservation.

Culture, traditions, and environmental connection

- Objective: Students will explore how different cultures interact with and respect nature.
- Objective: Students will be able to share a cultural story or tradition related to the environment.

CONTENTS:

This section outlines the topics and themes that will be explored throughout the course. It provides a detailed roadmap for students to understand the interconnectedness of science, culture, and the environment, helping them build a strong foundation in both scientific inquiry and cultural awareness.

1. Introduction to Nature and Culture What is culture? What is the environment? How are they related? Overview of cultural practices related to nature.
2. The Scientific Process Asking questions, making observations, forming hypotheses, conducting experiments, and analyzing results. Understanding how scientific inquiry can help solve environmental issues.
3. States of Matter Solids, liquids, gases, and how matter changes states (e.g., melting, freezing, evaporation). Practical activities to observe changes in states of matter in everyday life.
4. Energy Basics Different forms of energy (e.g., light, heat, sound) and the concept that energy can change forms but is never lost. Experiments demonstrating energy transformations and conservation.
5. Forces and Motion Pushes and pulls, gravity, and how things move or stop. Hands-on activities to understand basic concepts of forces and motion.
6. Living Things and Their Needs Characteristics of living things, habitats, and the food chain. Observing local wildlife and discussing the needs of different species.
7. The Human Body Major systems (e.g., respiratory, circulatory, digestive) and how they keep the body alive. Activities to understand human health and the relationship between lifestyle and the environment.
8. The Earth and Its Resources Rocks, soil, water, and how humans use and conserve natural resources. Understanding sustainable resource use and its importance.
9. Weather and Climate Basic weather patterns, seasons, and the water cycle. Observing weather changes and understanding their impact on local ecosystems.
10. Space and the Solar System Planets, the sun, moon phases, and Earth's place in the universe. Relating space exploration to cultural stories and understanding our place in the cosmos.
11. Simple Chemical Reactions Mixing substances, observing basic reactions (e.g., baking soda and vinegar), and discussing safety in handling materials. Activities that demonstrate everyday chemical changes and their effects.
12. Conservation and Civic Responsibility Actions for conservation at individual, community, and global levels. Community-based environmental projects.



DIDACTIC METHODOLOGY (SPECIFICALLY SEN)

The didactic methodology for children with special educational needs is designed to ensure accessibility, inclusivity, and active engagement. It focuses on creating an adaptable learning environment that meets each student's individual needs, encouraging them to reach their full potential while building confidence and fostering a love for science.

1. **Personalized Learning Paths** Initial assessments will be used to tailor content to each student's interests and abilities, with individualized educational plans for those needing additional support. Learning objectives will be broken down into smaller, achievable tasks with frequent positive reinforcement to build confidence.
2. **Multisensory Learning** Use of visual aids (e.g., pictures, diagrams), auditory supports (e.g., sound effects, songs), physical activities (e.g., role-play, movements), and tangible objects (e.g., models, manipulatives) to enhance understanding. Incorporating sensory breaks and movement activities to accommodate varying attention spans and sensory needs.
3. **Sequential Teaching and Scaffolding** Break complex concepts into smaller, accessible steps, gradually building on them to ensure understanding and retention. Use scaffolding techniques to guide students through tasks with decreasing levels of support until they can perform independently.
4. **Repetition and Practical Experience** Reinforcing concepts through repeated practice in various contexts, including hands-on activities, real-world projects, and interactive games. Repetition will be varied to maintain engagement, using different media and methods to solidify understanding.
5. **Assistive Technology and Tools** Utilizing educational apps, digital content, and communication aids to support students with specific needs. Incorporating text-to-speech, speech-to-text, and other assistive tools to enhance accessibility for students with different learning profiles.
6. **Experiential Learning through Nature Walks** Frequent outings to local parks or natural areas to observe ecosystems, record observations, and relate findings to classroom lessons. Providing sensory-rich experiences (e.g., feeling different textures, listening to nature sounds) to help students connect with the material in a meaningful way.



DIDACTIC METHODOLOGY (NON-SEN)

This section focuses on effective teaching methodologies suitable for students without special educational needs. It emphasizes active participation, interdisciplinary approaches, and hands-on experiences to enhance engagement and understanding.

1. **Project-Based Learning** Students work in groups on projects such as building a model ecosystem, creating posters on conservation efforts, or investigating a cultural practice. Students are encouraged to explore real-life environmental problems and collaborate on solutions, integrating scientific knowledge with practical action.
2. **Interdisciplinary Learning** Integrating science with history, geography, language, and art. For example, understanding indigenous cultural practices while studying local ecosystems, or creating art projects inspired by the solar system. This helps students see the connection between different subjects and how they relate to the environment.
3. **Experiential Learning** Hands-on activities like planting gardens, conducting experiments, and building simple energy models to illustrate sustainability. Organizing visits to local science centers, environmental education facilities, or even engaging in citizen science projects to allow students to experience science outside the classroom.
4. **Discussion and Storytelling** Using stories from various cultures to introduce environmental concepts and facilitate discussions about students' roles in their communities. This can include sharing traditional stories related to natural events or inviting guest speakers from local communities to discuss cultural perspectives on the environment.
5. **Simulation and Role-Playing** Engaging students in simulations and role-playing activities that allow them to explore scientific concepts in a dynamic way. For example, role-playing as members of a local government to decide on environmental policy or simulating an ecosystem to understand interdependence. These activities help students develop empathy and understand multiple perspectives regarding environmental and cultural issues. Students work in groups on projects such as building a model ecosystem, creating posters on conservation efforts, or investigating a cultural practice.
6. **Interdisciplinary Learning** Integrating science with history, geography, and art. For example, understanding indigenous cultural practices while studying local ecosystems.
7. **Experiential Learning** Hands-on activities like planting gardens, conducting experiments, and building simple energy models to illustrate sustainability.
8. **Discussion and Storytelling** Using stories from various cultures to introduce environmental concepts and facilitate discussions about students' roles in their communities.



ASSESSMENT

- **Formative Assessments.** Direct observation of student participation during activities and projects, such as noting student engagement during a group activity on ecosystem observation or documenting their contributions in class discussions. Use of portfolios to collect student projects and activities throughout the course, including maintaining a nature observation journal or creating drawings of different ecosystems. Frequent check-ins and informal quizzes adapted to individual learning needs to monitor progress, such as quick oral questions about the water cycle or matching exercises for energy forms. Additionally, assessments could evaluate understanding of states of matter, the water cycle, or simple chemical reactions through practical demonstrations or hands-on activities. Direct observation of student participation during activities and projects, such as noting student engagement during a group activity on ecosystem observation or documenting their contributions in class discussions. Use of portfolios to collect student projects and activities throughout the course, including maintaining a nature observation journal or creating drawings of different ecosystems. Frequent check-ins and informal quizzes adapted to individual learning needs to monitor progress, such as quick oral questions about the water cycle or matching exercises for energy forms.
- **Summative Assessments:** Adapted tests featuring a mix of questions (multiple choice, short answer, and practical application), such as questions about identifying states of matter or explaining a simple chemical reaction. Presentations or exhibitions of student projects, like creating a "mini-ecosystem" or a conservation plan, for example, presenting a diorama of a rainforest habitat or showcasing a poster on recycling practices. Alternative assessments, such as visual presentations, oral reports, or physical models, for students who may struggle with traditional written tests, such as building a simple model demonstrating the solar system or giving a verbal explanation of a cultural practice related to environmental conservation.

In order to conduct an effective and attractive "Science Through Culture And Environmen" course, it is essential to have a variety of materials and resources to support the learning process. Here are some examples of materials and resources needed:

RESOURCES REQUIRED FOR THE COURSE:

Traditional Learning Materials:

Notebooks, textbooks, graph paper, drawing tools, and nature observation journals. Materials related to water (e.g., water samples, droppers, beakers), chemical solutions for simple experiments (e.g., vinegar, baking soda, salt, sugar), and physical examples to illustrate states of matter (e.g., ice, water, steam). Visual aids like posters depicting the water cycle and chemical reactions are also essential.

Digital Resources:

Computers, tablets, and internet access for research. Educational apps focusing on ecosystems, energy, and sustainability. Specific digital science games and virtual lab resources such as Phet Interactive Simulations (for exploring concepts like energy and forces), ABC mouse Science and Environment, Mystery Science, and Tynker (for simple coding related to environmental projects). Virtual science labs such as Gizmos and interactive programs like Legends of Learning could also be beneficial for visualizing concepts like chemical reactions, space, and forces.

Outdoor and Hands-On Materials

Planting kits for gardening activities, recycled materials for building models, and simple measuring tools for experiments. Visits to local science museums, botanical gardens, environmental education centers, and nature reserves. Field trips to water treatment plants, recycling centers, or local farms to provide real-world context for resource management, sustainability, and ecosystems. Participation in workshops or guided tours at science centers or laboratories where students can observe and engage with scientific experiments and demonstrations.

COURSE TITLE: MATHEMATICS THROUGH ECONOMICS

JUSTIFICATION

A math through economics course for elementary and middle school students combines fundamental mathematical concepts with practical applications in everyday life, preparing students to understand and navigate the economic world.

The justification for the existence of such an optional is given by the fact that it helps with the formation of the following abilities, skills and knowledge:

1. Improving basic math skills

- Students consolidate their basic mathematical knowledge: addition, subtraction, multiplication, division and understanding of proportions and percentages.
- Students will have a better understanding of mathematics through practical applications which can improve overall academic performance in this subject.

2. Introduction of basic economic concepts

- Students begin to understand basic economic concepts such as: value, price, demand, supply, saving and investment.
- Knowing these basic concepts helps them understand the economy of society and be able to participate in recurring economic activities from an early age.

3. Stimulating curiosity and interest in economics

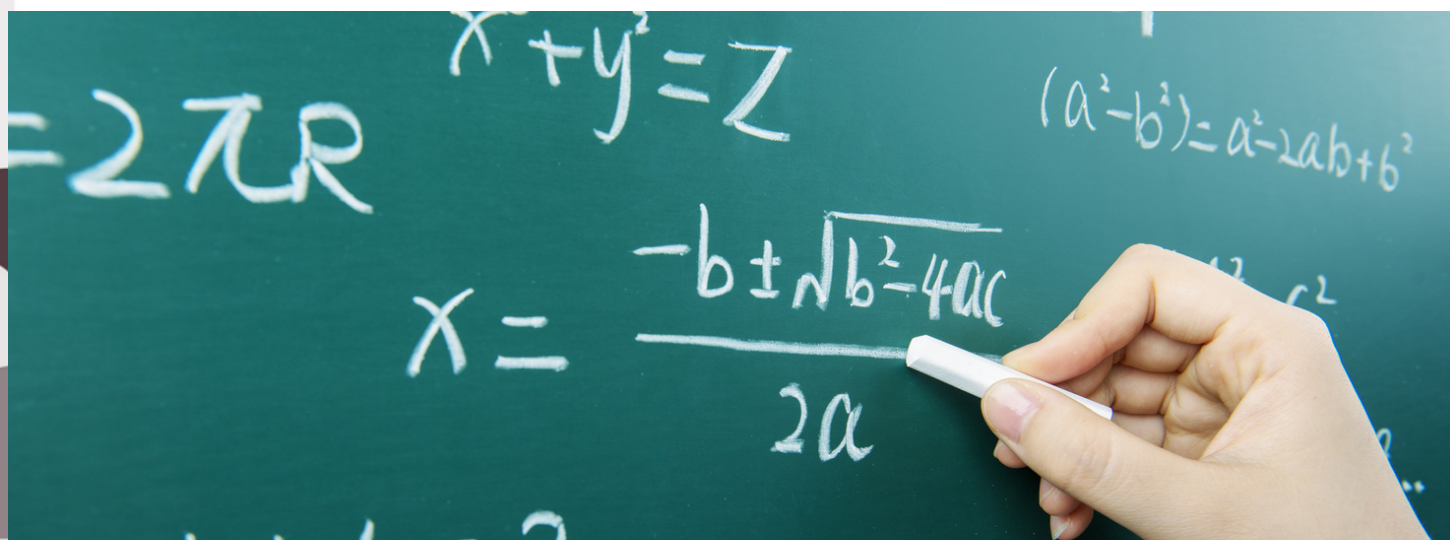
- By exploring economic concepts with the help of mathematics, students can discover an interest in subjects such as: savings, finance and business.
- This early interest can lead to a deeper understanding of these fields and influence their future educational and career options.

4. Development of planning and resource management skills

- Students learn the concepts of resource, money, goods, the value of goods and the notion of exchange
- Contributes to the development of resource evaluation, organization and management skills,

5. Practical applicability and connections to everyday life:

- Students learn how to apply mathematical concepts to real situations: using mathematical operations as a basis for setting a budget, saving money, understanding the prices of discounts and the ratio of money on hand (income) / expenses
- These practical skills help students become more aware and responsible about financial decisions, both now and in the future.



7. Training skills for active and responsible citizenship

- Knowledge of economic and financial concepts contributes to the growth of informed and responsible citizens, capable of making informed decisions regarding economic resources.
- Students thus become aware that they also have a role, impact and contribution in economic decisions but also on the community and the environment.

8. Stimulating creativity and innovation

- Lesson projects will include mathematical activities that stimulate creativity and innovation: creating fictitious income-producing activities, creating fictitious business plans or simulating markets and shops.



SPECIFIC LEARNING OBJECTIVES:

1. Introducing the concept of money and counting symbols

Objective: Students will be able to identify and name different coins and banknotes used in everyday life.

Objective: Students will be able to perform simple addition and subtraction using coins and bills to simulate shopping.

2. The concept of saving and spending

Objective: Students will be able to understand and explain the difference between saving and spending, giving examples from their everyday lives

Objective: Students will be able to create a simple savings plan to achieve a specific financial goal, such as buying a toy.

3. The notions of: order and comparison

Objective: Students will be able to compare the prices of two or more products, determining which is cheaper or more expensive.

Objective: Students will be able to order products or amounts of money from smallest to largest.

4. Introduction of the notions of: market and trade

Objective: Students will be able to explain the concept of a market as a place where people buy and sell goods and services.

Objective: Students will be able to participate in a market simulation, playing the role of buyers and sellers to understand the exchange of goods and money. This is how I understand the concept of trade

5. Calculation of the total amount and the remainder

Objective: Students will be able to calculate the total amount of selected products and determine the balance they should receive after making a payment.

6. Simple drawings and graphics

Objective: Students will be able to create simple graphs such as the amount of fruit their classmates like to represent data.

Objective: Students will be able to interpret simple graphs to answer questions such as "which is the most/most...?"



7. Basics of planning and decision making

Objective: Students will be able to understand the importance of planning purchases according to the available budget.

Objective: Students will be able to make simple purchasing decisions, taking into account needs and wants.

8. Mathematics in everyday life

Objective: Students will be able to recognize situations where mathematics is used in everyday life, such as calculating time or distance.

Objective: Students will be able to use numbers to solve simple problems in everyday life, such as dividing a pizza between friends.

9. Simulation of economic roles and responsibilities

Objective: Students will be able to understand the economic roles with the help of role-playing games: the seller, what attributes does he have, what does his activity entail, the buyer what does he do, what must he have to be able to shop, the distributor what are his roles, what does he do, the producer how does he get the relationship with the distributor and sells the goods, the situations in which the producer is also the seller how they differ from those when their relationship is mediated by a distributor, etc.

Objectives: After understanding the various economic roles, the concept of transaction, operations, intermediation, sale etc. is explained to the children.

10. Introducing the notion of exchange (barter)

Objective: Students will be able to understand the concept of exchange (barter) and explain why the need for money arose.

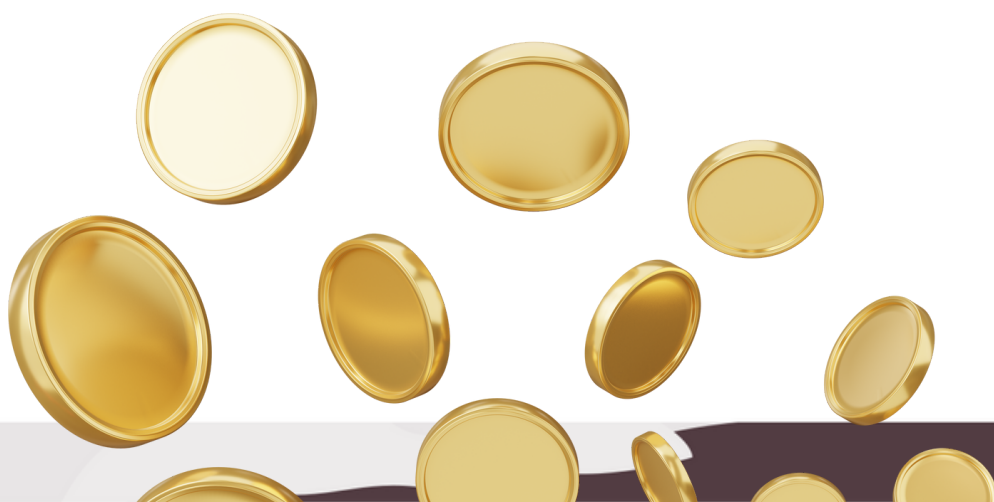
A "Mathematics through Economics" course for elementary and middle school students can include a variety of themes and core topics that combine mathematical concepts with economic applications. These topics should be accessible, practical and relevant to the students' level of understanding. Here are some main themes and topics that could be included in this course:



CONTENTS:

The course content consists of a variety of themes and topics that combine mathematical concepts with economic applications. The main themes and topics that will be included in this course are:

1. Basics of money and economics : the role of money, types of money (coins and banknotes), the concepts of price, good, resource, expenditure, saving, expenditure, and the functions of money
2. Addition and subtraction in the economic context : adding the price of products to get the total price, subtracting them from the original amount of money, total, difference, cost, leftovers.
3. Introduction of the concepts of demand and supply : what is demand (people's need for products), what is supply (products put up for sale by the manufacturer), what are the factors that influence demand and supply (production, sale, product quality)
4. Basic financial mathematics : the process of saving, what it means to "put money aside" and how we manage to save, an example of a simple investment model, interest calculation models, profit and also the value of time in money.
5. Budget planning and resource management: what a budget looks like, what are the mathematical calculations that underlie a budget, what are the resources we take into account when making a budget
6. Introduction to graphs and charts : presenting graphs and scales understanding the connections between orders, scales and graphs, teaching how to interpret and analyze graphs
7. Introduction of the notion of price and cost: understanding the cost of production as a mathematical amount and setting the price as a result of adding the cost of production plus an amount that is meant to be financial gain and understanding profit in this mathematical context
8. Introducing the concept of exchange: the exchange of goods without money by understanding the fact that each object can be assigned a numerical value (figure or number) and by assigning this figure the good can be compared with another and if they are equal they can be exchanged between them.
9. Introducing the concept of discount: the discount presented as the price resulting from a subtraction operation if they are small children will do simple subtractions if they are older they will learn the discount through percentage calculations and subtraction from the original amount.



DIDACTIC METHODOLOGY (SPECIFICALLY CES)

In order to be able to teach these subjects to children with special educational needs (SEN), an adapted methodological approach will be needed, taking into account the individual needs and learning styles of each student. The teaching methodology will have to be flexible, inclusive and oriented towards creating an accessible and supportive learning environment. The following methods could be considered:

1. Initial assessment and personalization of learning:

- Carrying out an initial assessment of the skills, interests and needs of each student to understand the starting level but also the specific learning needs.
- Adaptation of materials and methodology to meet the needs of each student, using individualized educational plans

2. Multisensory use of didactic resources

- The use of visual (images, graphics, diagrams), auditory (audio stories, music), tactile (palpable objects, manipulative center or work table) and kinesthetic (physical activities of finger, hand movements) materials.
- Multisensory involvement in teaching helps to understand the exercises and increases the ability to retain and fix information.

3. Sequential, gradual teaching

- Breaking down complex tasks into small and accessible steps, teaching concepts sequentially and using clear and concrete examples.
- By breaking down tasks, students understand the process but at the same time understand routine and order, thus building confidence and developing skills at a pace adapted to personal requirements.

4. Repetition and systematic practice

- Systematic repetition of economic concepts and processes with various examples and practical applications.
- Through systematic repetition familiarity with the material, concepts and economic processes increases and through familiarization the consolidation of information becomes much easier.

5. Visual and organizational support

- Using visual supports to structure information and facilitate understanding of the transition from mathematics to economics
- Using visual support helps the child understand the relationships between concepts and helps organize information

6. Use of assistive technology and digital teaching programs

- Use of phone accessibility software to make learning materials accessible
- Use of STEAM math learning programs and customized educational software
- The use of interactive applications of calculations and mathematical exercises that can facilitate learning
- These programs ensure the accessibility of the material for those with special educational requirements adapted to their needs

7. Learning through games and practical activities

- Using educational games to practice or facilitate the understanding of certain concepts such as expenses, income
- Carrying out role-playing games to understand economic concepts in relation to arithmetic exercises
- Carrying out budget, inventory or savings simulations to understand the concepts
- Using this type of activity increases children's involvement and facilitates fixing some mathematical terms that in other contexts would create anxiety states for them.
- Exercising some practical activities actually means some hands-on learning experiences that help a better acquisition of the proposed concepts therefore contribute to increasing the child's self-esteem, encouraging participation and expression



DIDACTIC METHODOLOGY (NON-SEN)

Teaching mathematics through economics can benefit from a variety of teaching methods that integrate mathematical and economic concepts, making them relevant and accessible to students. Here are some effective teaching methods for this type of course:

1. Project-based learning – students work in teams to solve problems or projects such as simulating a market, creating a buy-sell situation, setting a budget for a toy or trip, setting a savings plan
2. Experiential learning – students actively participate in experiments or simulations that involve the interaction between buyer and seller, that talk about the resource-needs relationship, simulations of savings plans.
3. Discovery learning – students are engaged in inquiry and discovery activities through which they understand the relationships between goods-value-price
4. Interdisciplinary learning – Integrating mathematics with other disciplines, such as history or geography, to examine economic development or geographic impact on local economies.
5. Problem-based learning – the students are presented with some real economic situations of various difficulties (I have x lei and I have to buy abc products, how do I get my money) that can be
6. Using digital math games – Prodigy Math Game which is a math-based role-playing game that engages students in a world of math while adapting the difficulty of the math problems to the individual's skill level or PhET Interactive Simulations which are simulations free math and science interactives that enable hands-on and interdisciplinary learning through visual and interactive content that facilitates understanding of abstract concepts.
7. Teaching through explanations and examples – direct teaching of concepts through explanatory lessons that ensure a clear understanding of the basic concepts, followed by the presentation of concrete examples from economics and practical exercises that ensure their understanding and application in practical reality.
8. Story-based learning – presenting age-appropriate hypothetical or real-life situations or stories to understand the application of mathematics and economics to real-life situations such as shopping, markets, personal savings or personal budgeting.



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RESOURCES REQUIRED FOR THE COURSE:

1. Traditional teaching materials : specialized textbooks, exercise books and worksheets containing practical problems and applications, blackboard and markers/chalks, simple calculators for math exercises, activity reports and learning logs, graph paper for charts and graphs , pencils, pens, rulers and square.
2. Digital resources and technology : computers and tablets (for access to online resources, educational software and interactive applications), access to the Internet and online educational platforms, e-learning platforms and online educational resources, projector and screen (for presentations video, economic simulations and viewing multimedia content), economic simulation software, graphics and calculation programs, and project management applications
3. Interactive and manipulative resources: interactive table games that simulate economic markets, trading games or budget simulators, fake money, cubes, tokens and other physical objects that help understand economic and mathematical concepts, posters, graphs and charts for visualization of economic and mathematical concepts.
4. Support materials and study resources: economics and mathematics popularization books, articles and magazines, educational videos, documentaries and animations explaining economics and mathematics concepts, study guides, question and answer sets, video tutorials.
5. Materials for practical activities/projects/role games : business scenarios, economic problems and case studies for the practical application of learned concepts, cards, markers, and other materials needed to make posters and presentations, – files or folders for collecting and organizing student projects and activities

BIBLIOGRAPHY:

- Garner, R. L. Exploring Digital Technologies for Art-Based Special Education. Models and Methods for the Inclusive K-12 Classroom (1st ed., p. 198). Routledge.
- Tejo Sampurno, Muchammad Bayu & Camelia, Ika. (2019). Art and Fun Digital Learning for Children with Special Needs: A Case Study on Applying Art as a Learning Technology. 10.2991/soshec-19.2019.38., https://www.researchgate.net/publication/338439268_Art_and_Fun_Digital_Learning_for_Children_with_Special_Needs_A_Case_Study_on_Applying_Art_as_a_Learning_Technology.
- Bernaschina D. Art gamification (and digital/media arts) for special school: New thinking shifts for inclusive metaverse's engineering. Metaverse. 2024; 5(1): 2274. <https://doi.org/10.54517/m.v5i1.227>
- Lowe, E. (2016). Engaging Exceptional Students Through Art Activities. BU Journal of Graduate Studies in Education, Volume 8,(Issue 1), 18. <https://doi.org/https://files.eric.ed.gov/fulltext/EJ1230491.pdf>
- Sharma, B.P. (2022) Digital Tools in Art Education: From Expanding Creative Horizons and Facilitating Collaboration to Increasing Access and Resources for a Diverse Student Population, Applied Research in Artificial Intelligence and Cloud Computing, 5(1), pp. 55-65.
- <https://researchberg.com/index.php/araic/article/view/94>
- Yoder, Genevieve, "Adapted Art Curriculum: A Guide for Teachers of Students With Disabilities" (2018). Graduate Education Student Scholarship. 1. https://mosaic.messiah.edu/gredu_st/1
- Eisner, E. (2004). The arts and creation of mind. New Haven, CT: Yale University Press.
- Evans, R. (n.d.). Art therapy for high functioning autism how to get started. Rachel Evans' Autism Newsletter. Retrieved November 16, 2015, from http://www.bahaistudies.net/neutelitism/library/art_therapy.pdf.
- McCarthy, M. (n.d.). Harnessing the power of art for children with special needs. Retrieved October 4, 2015, from www.maclester.edu/educationreform/reformcomposition/maureenSR.pdf
- E. Elstad, Ed., Digital expectations and experiences in education, 1st ed. Brill, 2019.
- M. Thomas, Digital Education. Basingstoke, England: Palgrave Macmillan, 2011.
- European Conference on Technology Enhanced Learning (12th : 2017 : Tallinn, Estonia), Data driven approaches in digital education, 1st ed. Cham,Switzerland: Springer International Publishing, 2017.
- M. T. Kolesinski, E. Nelson-Weaver, and D. Diamond, Digital solidarity in education. London, England: Routledge, 2014.
- Carroll, M. Anderson, and D. Cameron, Drama education with digital technology. Continuum, 2009.
- M. Anderson, D. Cameron, and J. Carroll, Eds., Drama education with digital technology. Continuum, 2011.
- M. Cannon, Digital media in education, 1st ed. Cham, Switzerland: Springer International Publishing, 2018.
- G. Jamissen, P. Hardy, Y. Nordkvelle, and H. Pleasants, Eds., Digital storytelling in higher education. Cham, Switzerland: Springer International Publishing, 2018.
- Coleman, M. B., Cramer, E. S., Park, Y., & Bell, S. M. (2015). Art educators' use of adaptations, assistive technology, and special education supports for students with physical, visual, severe and multiple disabilities. Journal of Developmental and Physical Disabilities, 27, 637-660. doi:10.1007/s10882-015-9440-6
- Cramer, E. S., Coleman, M. B., Park, Y., Bell, S. M., & Coles, J. T. (2015). Art educators' knowledge and preparedness for teaching students with physical, visual, severe, and multiple disabilities. Studies in Art Education, 57(1), 6-20. doi:10.1080/00393541.2015.11666279
- Darewych, O. H., Carlton, N. R., & Farrugie, K. W. (2015). Digital technology use in art therapy with adults with developmental disabilities. Journal on Developmental Disabilities, 1(2), 95-102.
- Derby, J. (2016). Confronting ableism: Disability studies pedagogy in pre-service art education. Studies in Art Education, 57, 102-119. doi:10.1080/00393541.2016.1133191
- Eisenhauer, J. (2007). Just looking and staring back: Challenging ableism through disability performance art. Studies in Art Education, 49(1), 7-22. doi:10.1080/00393541.2016.1133191
- McLaughlin, M. J. (2012, September/October). Access for all: Six principles for principals to consider in implementing CCSS for students with disabilities. Principal. Retrieved from <http://www.naesp.org/principal-septemberoctober-2012-common-core/access-commoncore-all-0>
- Parker, S. (2012, November 22). Visual Arts for Special Needs: Issues, Planning and Strategies [Lecture]. Professional and Vocational Education | ABIPP.
- Boyland, J. (2021, February 21). Digital Art Education Tools Encourage Students' Creativity and Curiosity. EdTechMagazine. <https://edtechmagazine.com/k12/article/2021/02/digital-art-education-tools-encourage-students-creativity-and-curiosity>
- S., C. (2022, February 23). Digital Art Curriculum for High School and Middle School. Artful Ideas. Retrieved September 20, 2024, from <https://www.artfulideasclassroom.com/blog/digital-art-curriculum-for-high-school-and-middle-school>
- Inspired Classroom. The Inspired Classroom. Retrieved September 3, 2024, from <https://theinspiredclassroom.com/2023/05/the-benefits-of-introducing-digital-art-in-the-classroom/>



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Co-funded by
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Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

