



Bee-Bot – Early Coding and Communication

Institution	UEF
Intervention Name	Understanding directions and commands
STEAM Discipline	Technology
IDD Students Context	Preschool-aged children with cognitive IDD
Resource used	Bee-Bot
Description of the activity step by step before the project	
Intervention Planing: draft the intervention plan and mobilize resources Target students: identify the target students to be engaged Know the students group: study the target students' profiles and tune the plan accordingly Classify Students: Preschool-aged children with speech-language delays or cognitive IDD. Create Student Profiles: Visual strength, AAC use, needs for routine and concrete tasks. Find Resources: Picture-based Bee-Bot mats (e.g., animals, alphabet, food). Define Activity: Goal is expressive language, turn-taking, and directional vocabulary. Learning Objectives: Understand directions (left, right, forward), match word to object.	

Description of the activity step by step using the resource
- Introduce Bee-Bot: Show how it listens and moves based on buttons. - Use a Themed Mat: E.g., farm animals or letters of the alphabet. - Teacher Models the Task: "Let's go to the cow!" and programs it. - Guided Practice: Each student gets to give one instruction. - Use Visual Cues: Pair images and symbols for target location. - Story-Based Scenarios: "Bee-Bot goes shopping" or "visits a zoo." - Pair Practice: Work in dyads for shared decision-making. - Use AAC/gestures: Let non-verbal students indicate directions. - Reflect: "What did Bee-Bot do? Where did it go?" - Evaluate: Document communication, response accuracy, and participation.





Code & Go Robot Mouse – Programming Through Mazes

Institution	UEF
Intervention Name	Stimulate reasoning and persistence
STEAM Discipline	Technology
IDD Students Context	ADHD & ASD Level-1
Resource used	Code & Go Robot Mouse
Description of the activity step by step before the project	
1. Intervention Planing: draft the intervention plan and mobilize resources 2. Target students: identify the target students to be engaged 3. Know the students group: study the target students' profiles and tune the plan accordingly 4. Classify the IDD: Identify ADHD and ASD Level 1 characteristics (e.g., impulsivity, distractibility). 5. Create Student Profiles: Note attention span, sensory needs, and motivation factors. 6. Find Similar Resources: Search maze navigation activities with robot mice. 7. Define the Activity in the User Model: Link it to goals in logic, planning, and inhibitory control. 8. Set Learning Objectives: Improve sequential reasoning, task planning, and persistence.	

Description of the activity step by step using the resource
1. Introduce the Robot Mouse: Show how it moves with commands (forward, left, right). 2. Present Materials: Maze tiles, walls, cheese goal, programming cards. 3. Let Students "Play" Freely: Short unstructured session to reduce anxiety. 4. Demonstration: Program a short sequence to the cheese; show trial/error. 5. Guided Practice: In small groups, plan a short sequence with help. 6. Independent Practice: Design their own maze and write a sequence. 7. Add Complexity: Introduce tunnels or barriers as they progress. 8. Support: Use modeling, visual prompts, and time-based breaks. 9. Reflect and Discuss: What strategy worked? Where did the robot get stuck? 10. Evaluate: Assess ability to plan steps, fix errors, and persist through challenges.



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Cubetto – Programming Basics and Spatial Reasoning

Institution	UEF
Intervention Name	Spacial Reasoning
STEAM Discipline	Technology
IDD Students Context	ASD Level 1 & 2
Resource used	Cubetto
Description of the activity step by step before the project	
1. Intervention Planing: draft the intervention plan and mobilize resources 2. Target students: identify the target students to be engaged 3. Know the students group: study the target students' profiles and tune the plan accordingly 4. Classify the IDD: Identify students with ASD Level 1–2 using a cognitive and behavioral taxonomy. 5. Create the Student Profiles: Define each student's strengths (e.g., visual learning, structure), challenges (e.g., difficulty with abstract reasoning), and educational goals. 6. Search for Similar Activities: Review Cubetto-based logic and path-planning activities that match the student's cognitive level. 7. Define the Activity in the User Model: Associate the Cubetto session with STEAM goals: sequencing, spatial thinking, collaboration. 8. Set Learning Objectives: Basic programming (sequencing), error correction, understanding cause-effect through tangible coding.	

Description of the activity step by step using the resource
1. Introduce Cubetto: Present it as a friendly robot that follows code blocks. 2. Introduce the Control Board and Coding Blocks: Demonstrate how to place directional commands. 3. Free Exploration Time: Let students test how Cubetto reacts to block combinations. 4. Present the Activity: Show a map (e.g., garden theme); ask Cubetto to find the flower. 5. Define the Learning Objective: "Help Cubetto go from home to the flower using 6 or fewer steps." 6. Arrange the Environment: Use boundary mats and visual guides. 7. Conduct the Task: Students build the code and observe the result. Offer prompts as needed. 8. Encourage Pair Work: Students discuss and adjust sequences collaboratively. 9. Support the Process: Use story-based cues, gestures, and error-free learning strategies. 10. Reflect: Ask students to describe what worked and what they changed. 11. Evaluate: Use a checklist to assess task completion, collaboration, and engagement.



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mBot – Intermediate Robotics with Scratch

Institution	UEF
Intervention Name	Stimulating teamwork and design thinking
STEAM Discipline	Technology
IDD Students Context	moderate cognitive delays and fine motor challenges
Resource used	mBot
Description of the activity step by step before the project	
1. Intervention Planing: draft the intervention plan and mobilize resources 2. Target students: identify the target students to be engaged 3. Know the students group: study the target students' profiles and tune the plan accordingly 4. Study the IDD Profiles: Especially for moderate cognitive delays and fine motor challenges. 5. Create Profiles: Highlight strengths like visual learning, weaknesses in abstract logic. 6. Search for Resources: Gather Scratch block-based tutorials for mBot. 7. Define in User Model: Link programming activities with objectives in logic, autonomy, and motor planning. 8. Set Objectives: Learning loops, commands, teamwork, and design.	

Description of the activity step by step using the resource
1. Introduction: Explain Scratch and how it controls mBot. 2. Watch & Imitate: Show a sample program (e.g., drive 10 steps, turn). 3. Basic Practice: Students drag and drop code to make mBot move. 4. Group Challenge: "Get mBot through a city route with turns." 5. Add Lights and Sounds: Integrate multiple output blocks. 6. Add Conditions: Introduce simple "if-then" logic with guidance. 7. Support as Needed: Provide Scratch templates and one-on-one coaching. 8. Reflect: "What did you tell mBot to do? What worked?" 9. Evaluate: Use rubric for code logic, creativity, and engagement.



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