

Basic Movements of a Robot

Institution	University of Leon
Disciplina STEAM	Technology
IDD Student Context	Primary students with ASD Level 1/2
Resource used	Cubetto

Description of the step-by-step activity before the project
1. Introducing Cubetto as a friendly robot that follows instructions given by the child and will only move according to the programmed commands. In a group setting, let students pass Cubetto around and interact with it before structured tasks. 2. Introducing the Control Board: Explain that the control board acts as a remote control, demonstrate how to place coding blocks on the board and press the action button to execute a sequence. 3. Introducing the Colour Coding Blocks and functions: Allow students to predict what will happen before running a sequence. 4. Allow Exploration Time and freely explore how Cubetto moves using different block combinations. Model to test and observe the movements. 5. Present the Activity: Use visual schedules and structured steps to introduce the learning objective and provide clear instructions and use story-based prompts to reinforce understanding. 6. Define the STEAM Learning Objective (such as: Basic programming concepts (sequencing, loops, debugging, Spatial reasoning and problem-solving, Storytelling through programmed movement, Art and design (creating paths, visual storytelling, integrating colours and symbols in coding sequences) 7. Set Up the Environment: Arrange a clear workspace with the control board, coding blocks, and play mat and use visual guides or boundary markers to define the movement space. 8. Conduct the Activity through a predefined challenge, such as moving Cubetto to a specific point on the play mat. Reinforce participation with visual cues, prompts, and structured sequences. 9. Encourage Social and Collaborative Learning: Have students work in pairs or small groups to design and test sequences together and use Cubetto to model teamwork and structured turn-taking. 10. Observe and Support Students During the Process: Provide verbal and visual prompts to support problem-solving and ensure instructions are clear and structured to reduce frustration. Offer reinforcement strategies, such as error-free learning, guided scripts, or additional cues if there is a misunderstanding. 11. Wrap Up and Reflect: Summarize key concepts learned and review how Cubetto responded to commands and encourage students to describe what worked and what they might change next time using their AACs. 12. Evaluate Learning Outcomes: Assess student engagement and progress using observation checklists, rubrics, or task completion logs and collect feedback from students to improve future Cubetto-based activities.

Description of the activity step by step (changes in blue)
1. Student Profile and RoboSTEAM Integration. Since the student profile is already established within the RoboSTEAM Project, the methodology directly aligns with their identified strengths, challenges, and educational plan the prior steps are tailored to support structured learning within a STEAM-focused environment. 2. Follow steps 1-12 ensure that future activities and learning experiences consider the student's profile, progress, and previously defined objectives, reinforcing their learning



journey through structured programming experiences. 3. Step 12. Evaluate Learning Outcomes Assess student engagement and progress using observation checklists, rubrics, or task completion logs and collect feedback from students to improve future Cubetto-based activities. Assess how well the activity aligned with the student's profile, strengths, challenges, and educational plan. Update results based on performance and engagement. 4. Step 13. Look for new resources and activities to refine learning outcomes. 5. Step 14. Reflect on how this applies to expanding and creating new challenges in future sessions 6. Step 15. Expand and Create New Challenges Introduce progressive learning activities that build on previous skills. Encourage students to create their own challenges, integrating storytelling or new movement patterns.	
Extra resources	Extra resources
Similar activities	Similar activities



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Basic Movements of a Robot, programming

Institution	University of Leon
Disciplina STEAM	Technology
IDD Student Context	Primary/secondary students with ASD Level 1/2/3
Resource used	Code & Go Robot Mouse
Description of the step-by-step activity before the project	
1. Present the activity: Use visual cards with the steps of the activity and the materials. 2. Let them “play” with it: Allow time to explore the robot's movements. 3. Build the maze: The first time, choose between following a simple model (using one of the challenge cards). Later, create your own maze with modular pieces, walls, and tunnels. 4. Place the cheese at the goal. 5. Plan the route with cards: Place the mouse at the starting point. The first time, do it without obstacles and think about the path the robot should take to reach the cheese. The adult can point with their finger or a token and use the sequence cards to visualize the movements before programming. 6. Let them take time to begin with the activity and to process the instructions. 7. Program the robot's movements: Program step by step while observing the result. As the child gains more practice, they can program all the instructions in sequence (forward, backward, turn right, and turn left). 8. Press the mouse and observe: Press the Go button and observe the route. The first few times, ensure there are no errors, so the robot reaches the goal correctly. 9. Support them during the process: offering prompts, modeling, or visual cues. 10. Return to step 4 or 5 if necessary: If mistakes occur or adjustments are needed, go back and refine the route or programming. 11. Finish the activity: conclude the session positively. 12. Evaluate the results: what worked well, what challenges arose, and how the child engaged in the activity. Adjustments can be made for future sessions. 13. Create new challenges: Structure progression levels, plan with a partner, have races between two players, use tunnels and place obstacles, or invent stories with the mouse as the main character.	

Description of the activity step by step (changes in blue)	
1. Classify the IDD into the taxonomy if previously it has been not done. 2. Create the profile for the students based on the student's strengths, challenges, and needs. 3. Look for activities with similar learning objectives focusing on programming, sequencing, and problem-solving. 4. Look for other existing resources. 5. Define the activity in the user model and associate it the IDD student plan: Customize the Code & Go activity to fit the student's needs, ensuring it aligns with their learning plan. 6. Plan new objectives and activities that follow the same programming objectives in other areas once I have a profile: Extend the learning experience by designing new activities that reinforce programming skills in different contexts, such as storytelling, problem-solving, or social interaction. 7. Follow steps 1-12 considering all previous steps: Ensure that future activities and learning experiences consider the student's profile, progress, and previously defined objectives, reinforcing their learning journey through structured programming experiences.	
Extra resources	Extra resources
Similar activities	Similar activities



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Programming with IDD students

Institution	University of Salamanca
Disciplina STEAM	Technology
IDD Student Context	Students ADHD
Resource used	Block based programming and robots
Description of the step-by-step activity before the project	
1. I study the IDD students report to understand their capacities. 2. I explain the students the objectives of the action. 3. I present the students the basics of block programming with scratch. 4. I show how to apply the programming into mBot robots. 5. Students look for resources about how to program mbots robots. 6. I do a sample of programming collaboratively with them. 7. I explain the students what they have to do in groups. 8. Let them time to begin with the activity (with IDD students this time is extended). 9. Support them during the process (with comments, additional contents, videos, etc.). 10. Return to 3 if necessary. 11. Finish the activity. 12. Evaluate the results. 13. Evaluate students' feedback.	

Description of the activity step by step (changes in blue)	
1. Classify the IDD into the taxonomy if previously it has been not done. 2. Create the profile for the students based on the student's strengths, challenges, and needs. 3. Look for activities with similar learning objectives focusing on programming, sequencing, and problem-solving. 4. Look for other existing resources. 5. Define the activity in the user model and associate it the IDD student plan: Customize the Code & Go activity to fit the student's needs, ensuring it aligns with their learning plan. 6. Plan new objectives and activities that follow the same programming objectives in other areas once I have a profile: Extend the learning experience by designing new activities that reinforce programming skills in different contexts, such as storytelling, problem-solving, or social interaction. 7. Follow steps 1-12 considering all previous steps: Ensure that future activities and learning experiences consider the student's profile, progress, and previously defined objectives, reinforcing their learning journey through structured programming experiences.	
Extra resources	Extra resources
Similar activities	Similar activities



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Teaching Agile Methodologies

Institution	University of Salamanca
Disciplina STEAM	Engineering
IDD Student Context	Students ADHD
Resource used	Kanban agile methodology
Description of the step-by-step activity before the project	
1. I study the IDD students report to understand their capacities. 2. I explain the students the objectives of the action. 3. I present the students the basics agile methodologies. 4. I present the basics of Kanban. 5. I show a sample of Kanban application. 6. Students look for resources about Kanban. 7. I show them videos of Kanban application and more samples and resources. 8. I ask them basic question to know if they really understand Kanban, if not I return to 3. 9. I give the students the requirements of a task. 10. Let them time to begin study the requirements and split them into tasks and prioritize them. 11. Let them time to produce the Kanban board with the tasks. 12. Support them during the process (with comments, additional contents, videos, etc.). 13. Finish the activity. 14. Evaluate the results. 15. Evaluate students' feedback.	

Description of the activity step by step (changes in red)	
1. I study the IDD students report to understand their capacities. 2. I classify the profile of my student into the taxonomy. 3. I create the student profile into the User Model. 4. I look in the User Model for this disability or resources available for it. 5. I explain the students the objectives of the action. 6. I create on the User Model the learning activity including the learning objectives 7. I present the students the basics agile methodologies. 8. I present the basics of Kanban. 9. I show a sample of Kanban application. 10. Students look for resources about Kanban. 11. I show them videos of Kanban application and more samples and resources. 12. I ask them basic question to know if they really understand Kanban, if not I return to 3. 13. I enrich my explanation with resources from the User Model specifically devoted for this IDD student profile. 14. I add into the User Model new resources if they find any not already included. 15. I give the students the requirements of a task. 16. Let them time to begin study the requirements and split them into tasks and prioritize them. 17. Let them time to produce the Kanban board with the tasks. 18. Support them during the process (with comments, additional contents, videos, etc.). 19. Finish the activity. 20. Evaluate the results. 1. Evaluate students' feedback.	
Extra resources	Extra resources
Similar activities	Similar activities





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Building a Tower

Institution	CEE SAGRADO CORAZÓN
Disciplina STEAM	Art
IDD Student Context	EBO students with ASD
Resource used	Luminous bricks
Description of the step-by-step activity before the project	
1. Presentation of the material. Lay out the colored bricks and let them explore freely. 2. Introduction of colors. Name the colors of the bricks while handling them, showing the pictogram corresponding to the color. 3. Basic stacking. Show how to stack two bricks to start a tower. 4. Imitation. Help the children build different towers. 5. Reinforcement of actions. Every time you place a brick in the tower, reinforce it. 6. Incorporation of light. Turn on the glow bricks and let them observe and explore you. 7. Disassemble the tower. Allow the children to tear down the tower and enjoy the process. This helps to understand cause and effect. 8. Free reconstruction. Let the children build the tower as they prefer, guiding them only if necessary. 9. Closing and congratulations. Congratulate the children for their participation and creativity. Reinforce basic concepts such as "up," "down," "high," and "low."	

Description of the step-by-step activity using the resources of WP2 (changes in red)	
1. Presentation of the material and let them explore freely. 2. I search for and choose the user's profile in the taxonomy: - Resources and tools. - User model. - User management. 3. The choice will be TEA EBO 2 Student (Grade 3 in the area of social communication. Grade 3 in the area of restricted and repetitive behaviors.) 4. Guided exploration. We hold a translucent brick in front of the light and let the children watch the light through it. Encourage them to touch and move them. 5. Introduction of colors. Name the colors of the bricks while manipulating them, showing the pictogram corresponding to the color in the AsTeRICS Grid communicator. 6. Basic stacking. Show how to stack two bricks to start a tower. 7. Imitation. Help the children build different towers. 8. Reinforcement of actions. Every time you place a brick in the tower, reinforce it. 9. Incorporation of light. Turn on the glow bricks and let them observe and explore them. 10. Disassemble the tower. Allow the children to tear down the tower and enjoy the process. This helps to understand cause and effect. 11. Free reconstruction. Let the children build the tower as they prefer, guiding them only if necessary. 1. Closing and congratulations. Congratulate the children for their participation and creativity. Reinforce basic concepts such as "up," "down," "high," and "low."	
Extra Resources	Translucent bricks. AsTeRICS Grid Communicator.
Similar activities	Play with light.



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We play with Emoji

Institution	CEE SAGRADO CORAZÓN
Disciplina STEAM	Technology
IDD Student Context	EBO students with ASD
Resource used	Robot Emoji de Goji
Description of the step-by-step activity before the project	
1. Presentation of the material. Lay out the colored bricks and let them explore freely. 2. Introduction of colors. Name the colors of the bricks while handling them, showing the pictogram corresponding to the color. 3. Basic stacking. Show how to stack two bricks to start a tower. 4. Imitation. Help the children build different towers. 5. Reinforcement of actions. Every time you place a brick in the tower, reinforce it. 6. Incorporation of light. Turn on the glow bricks and let them observe and explore you. 7. Disassemble the tower. Allow the children to tear down the tower and enjoy the process. This helps to understand cause and effect. 8. Free reconstruction. Let the children build the tower as they prefer, guiding them only if necessary. 9. Closing and congratulations. Congratulate the children for their participation and creativity. Reinforce basic concepts such as "up," "down," "high," and "low."	

Description of the step-by-step activity using the resources of WP2 (changes in red)	
1. Presentation of the robot. Show the children the robot. 2. Free exploration. Let the children touch and manipulate the robot for a few minutes to familiarize themselves with it. 3. I search for and choose the user's profile in the taxonomy: 4. Resources and tools. 5. User model. 6. User management. 7. The choice will be TEA EBO 1 Student (Grade 3 in the area of social communication. Grade 2 in the area of restricted and repetitive behaviors). 8. App demo. Use the app and show them how the robot responds to emoji commands and the motion circle. 9. Imitation game. Encourage children to imitate the robot's movements, When the robot advances, they can take a step forward, when it turns, they can turn... 10. Cause-effect game. Let kids see how the robot's screen changes based on the emoji they choose in the app. This way we will work on the main emotions (sadness, anger, joy). 11. Using the taxonomy, we will look for activities with the aim of working on emotions. 12. Resources and tools. 13. User model. 14. Education resources and activities search. 15. We will choose the activity Emotional paths (view details) and we will design a path with pictograms that represent emotions. 16. We will help the student so that the Goji Emoji Robot follows the pre-established path to recognize the pictogram of the emotion we want to work on. 17. Vocabulary reinforcement. Repeat key words accompanied by pictograms such as "advance", "turn", "happy face", "sad face"... 18. Free play. Let the children experiment freely with the robot guiding them if necessary.	
Extra Resources	Colored adhesive tape.



	Robot luminous turtle glow & go
Similar activities	Follow the path.



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