Pipe Robot

Applicable Age Group 5-6 year-old toddlers

Activity Objectives
☑ Explore the movement of small balls and accurately judge their trajectories.
☑ Analyze the force on small balls and determine their direction of movement.

Activity Description A pipe robot can hide small balls or make small balls "appear". During the game, analyze the forces acting on the small balls—such as gravity and friction—to accurately determine their movement direction. Guide children to design a pipe robot by hand, adjust the direction of the pipes according to the trajectory of the small balls, so that the robot can hide or release the balls.

STEAM Literacy Development Indicators

Method / Indicator	Situation-based introduction: Analyze the movement of small balls	Design and build a pipeline robot	Test and record the force on the small balls	Strengthen key knowledge points
Curiosity and Imagination				
Flexibility and Adaptability		●		
Verbal and Written Communication Skills				
Cross-boundary Cooperation and Exemplary Leadership				
Critical Thinking and Problem-solving Skills			●	
Proactive and Pioneering Spirit				●
Ability to Evaluate and Analyze Information	●			

Interactive Tips

- Pay attention to the interface position when connecting pipes. When designing the shape, remind children to design according to the movement trajectory of the small balls.
- Determine the positions where the robot can hide or release balls—such as the "arms" or "legs" of the robot—and install pipes at these positions after confirmation.

Find These Blocks

Connect Pipes and Build the Pipe Robot