Hand-Cranked Fan

Applicable Age Group 5-6 year-old toddlers

Activity Objectives

☑ Further explore gear transmission and gear acceleration.

☑ Analyze the impact of fan blade size on wind intensity through observation.

Activity Description

Make a hand-cranked fan with children, further applying gear transmission and gear acceleration. For gear acceleration, select a gear with more teeth to drive a gear with fewer teeth—this will achieve an acceleration effect. When installing fan blades, try replacing them with blades of different sizes and observe how blade size affects wind speed.

STEAM Literacy Development Indicators

Indicator \ Method	Situation-based introduction: Understand the function of a fan	Build a fan using gear transmission	Test rotation speed and smooth operation	Knowledge expansion: Explore the influence of fan blade size on wind
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

- Gears must mesh first to achieve transmission. You can choose gears freely; the first step is to make the fan blades rotate, and then consider the acceleration issue. When acceleration is needed, simply replace the gears with ones of different sizes.
- If making a handheld fan, you don’ t need to design a base. If making a desktop or floor-standing fan, a base is required—ensure the base and support column are stable and sturdy.

Find These Blocks

Build a Hand-Cranked Fan Using Gear Acceleration