

# Low-Cost Experiments in STEM Education



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## Demonstration devices that facilitate understanding of Bernoulli's law.

### Installation from available materials

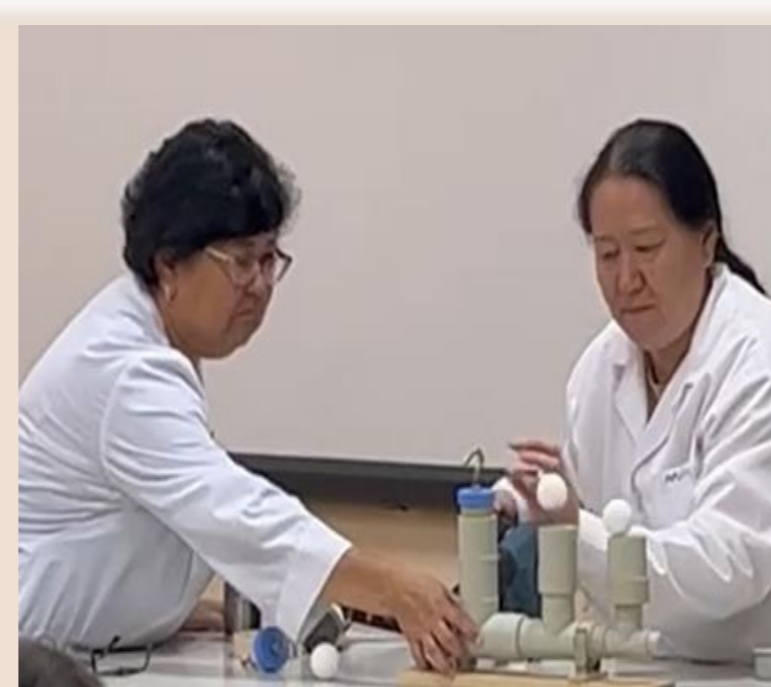
Bernoulli's law is like a secret code for how air moves around. It's a bit like a magic trick of nature, describing for us how the airplane can fly, how the tennis ball could levitate or how fluid behaves in pipe system.

- The demonstration device was built from a fine mesh and threads attached to it to visualize air stream lines of air flow. The pattern of stream lines flowing around an object helps students find the correct answer to the questions about pressure in the air flow and atmospheric pressure and why the ball does not fly out of the air flow.
- In addition, another demonstration device was constructed from water pipes. This device clearly shows the behavior of fluid flow in pipe, how the fluid flow and pressure depends on the change in pipe cross-section.



Water pipes; seal; salt shaker from the kitchen; blower; tennis balls; total cost approximately in a range of 2-6 dollar

The objective: Understanding the physical phenomena, supporting the knowledge with experimental work, engaging the students to find new application of this phenomena.



Conclusion: At the end of the lecture students tried to developed new approach for application of Bernoulli law in ball launching apparatus, the pulverization of liquid system by using any available materials in short time period.