

Diversity in STEM Teaching

SCIENCE ON STAGE
TURKU 2024



Katarína Revická & Jakub Žoldák | Pavol Jozef Šafárik University | Košice | Slovakia



Non-traditional problems in physics teaching

International Young Physicists' Tournament Problems

Why IYPT Problems?



Want to teach basic physics concepts using unusual, yet interesting problems? Try IYPT! 17 open problems are presented each year with basic to advanced physics, but new context.

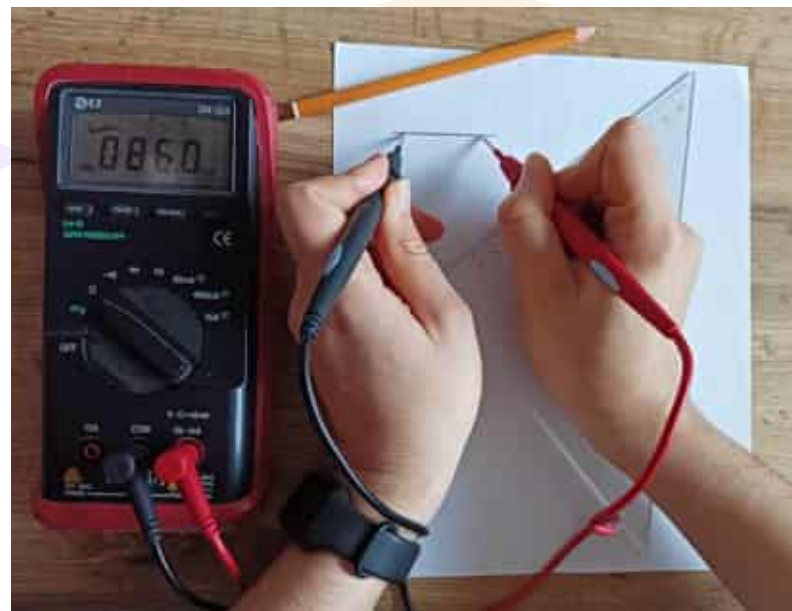
Access Everything. Anywhere. Anytime



Visit our page with all the information and prepared materials.

Get inspired 🤖

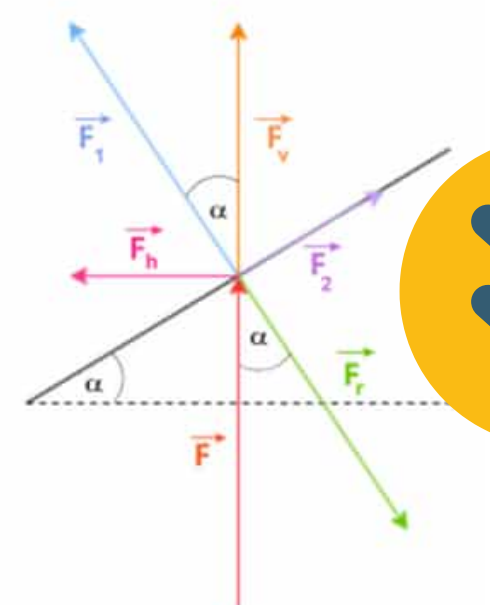
Conductive lines



Draw lines with graphite pencil, connect multimeter and measure! Does Resistance depends on length, pencil type or thickness?

Candle turbine

Rising warm air can power turbine. Conversion of thermal energy into mechanical energy. Support active research in class, experiments, conclusion building, theory explanation.



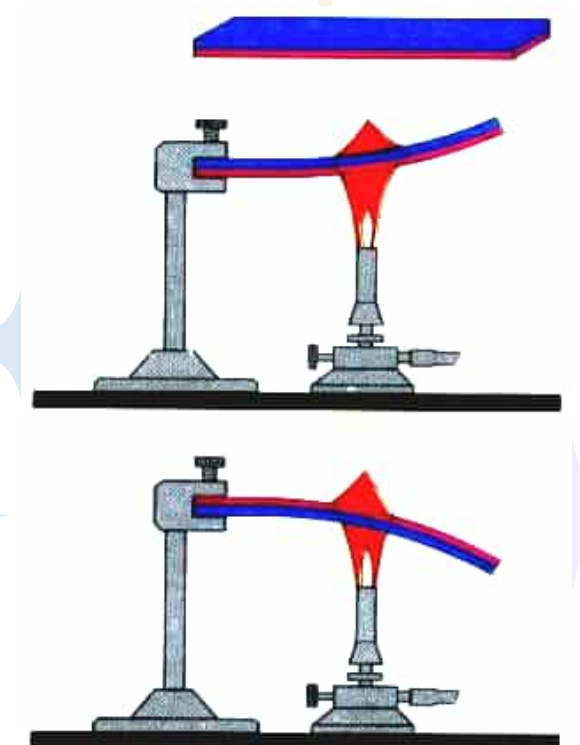
Ruler trick



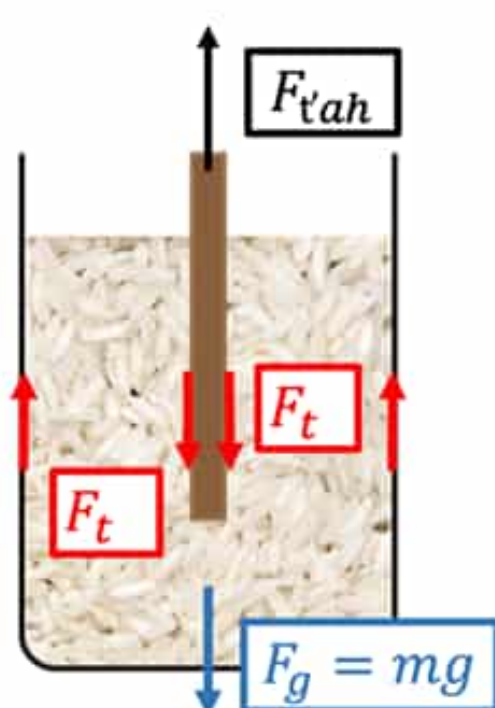
Why does ruler not fall? Cover the end with newspaper, throw the ball on the edge. It is NOT airpressure! It is paper Inertia!

Bimetallic strip

How does kettle know when to stop? Create bimetallic strip in class, show how it works in class. Material: paper, aluminium foil, candle - SO EASY



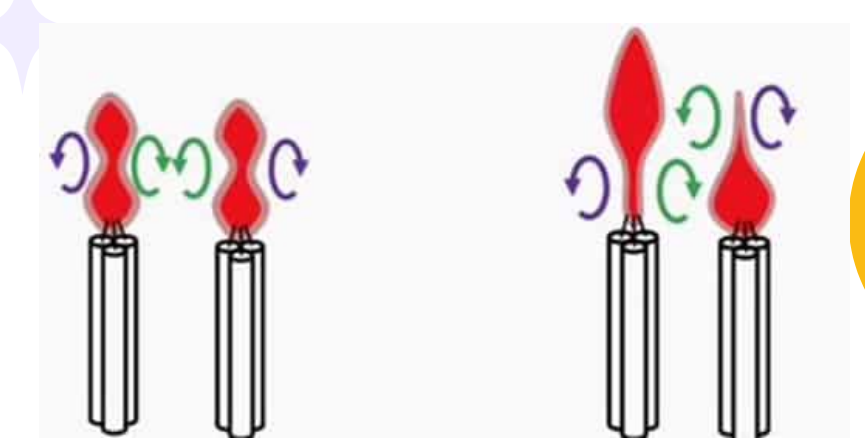
Gripping rice



Demonstrate friction with a well shaken rice. Lift glass full of rice by holding a stick inside it. Theachrs secret: friction.

Synchronized candles

Candles burning close to each other, creates oscillations of their flames which can be observed. Type of synchronization depends on the distance between candles.



Include IYPT problems into your physics classes.
Create experiments, demonstrations from IYPT problems.
Involve students into physics with hands-on problems.