

Physics in Everyday Life and in Technology

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ABSTRACT

In this article we have a tendency to giving some concepts some samples of however Physics extends well into our standard of living, describing the motion, forces and energy of standard expertise. Besides giving some samples of physics in our standard of living we have a tendency to additionally make a case for that however physics and engineering are connected and also shed lightweight on a number of the technical applications of physics.

KEYWORDS: Physics, Basic Science,

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I. INTRODUCTION

In actions like walking, driving a automotive or employing a phone, physics is at work.[1] For everyday living, all the technologies you would possibly see granted exploit the foundations of physics. A number of the examples that are provided below give the thought of physics in our way of life.

A. Simple Mechanical Devices

An easy place to check physics in action is with a straightforward lever shown in figure 1 – most simply ascertained at a park. Levers are available in 3 flavors, every with variable pin locations. They serve to enlarge force, drop-off the trouble required to maneuver an object on the opposing finish. A straightforward "see-saw" at a park consists of a lever (the locations for sitting) and therefore the pin(placed within the middle). The 2 opposing forces counter balance one another, making a swish ride through the air. At identical park you will see a slide, a

tool that mixes the steps increasing with the slide taking place, each samples of inclined planes. The machine eases the trouble of ascent by spreading it over a extended distance. the sleek slide returns you gently to earth, deceleration the influence of gravity simply enough to create it fun.[2]



FIG 1: See saw playground equipment

B. Transportation and Newton's Laws

The transportation company is not any unknown to the manipulation of everyday physics. Cars and trains utilize the wheel that

provides a swish, steady motion as shown in figure 2. Newton's laws of motion are at work as mechanical force and acceleration, action, reaction and inertia. Airplanes take it one step additional, permitting raise in addition as forward momentum. They manipulate physics – very like birds – by making raise through wing form in addition because the wing's angle – each of that serve to change flowing.

-Inertia explains many common events, such as why you move forward in your seat when a car stops suddenly.

-When the car stops, inertia keeps you moving forward.

-A force, such as the pull of a seat belt, is required to change your motion.

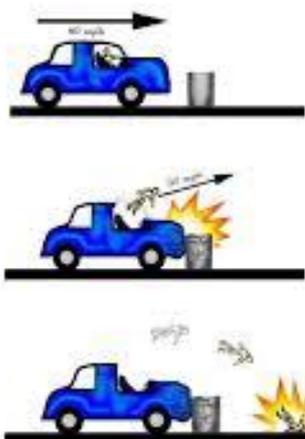


FIG 2: Newton's Laws of motion

C. Relativity and Modern Communications

Physics is all relative. This theme resonates through Einstein's special and general theories of scientific theory. Einstein's work is crucially vital to GPS in your phone, for instance. It takes radio signals from many satellites orbiting the planet and calculates your location correct to many centimeters as shown in figure 3. As a result of the speed and height of the satellites alters the signal terribly slightly, the smartphone adjusts the results mistreatment Einstein's theories. while not a hand from scientific theory, GPS would be so muchless correct or helpful.[3]

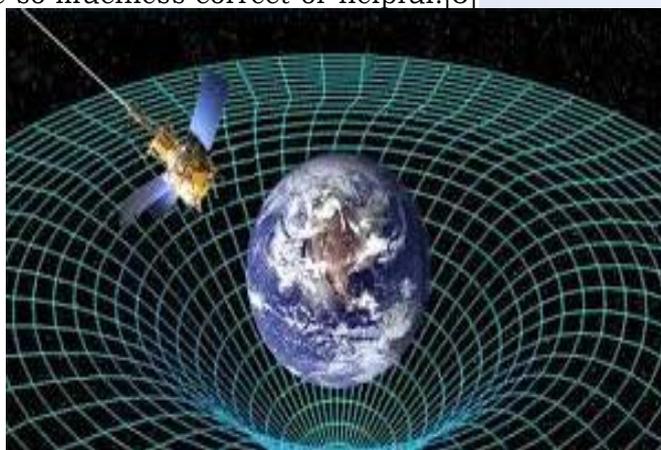


FIG 3: Implications beyond science

D. Physics and Biology

Even as you browse this sentence, physics is at work. The eyes evolved

in several species – through many samples of confluent evolution – harnessing the spectrum. The ears hear sounds that occur through the movement of air molecules. And also the chemistry that drives all of biology rely upon the physics of energy and molecules. Every day, for instance, plants absorb daylight, water and CO₂, making aldohexose and emotional O as a byproduct as shown in figure 4.

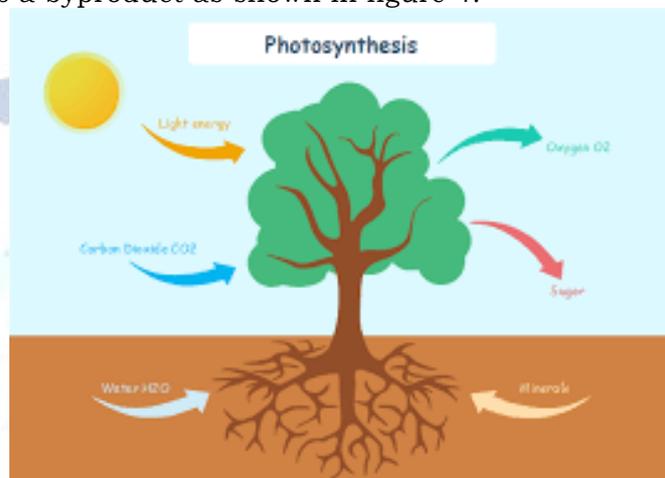


FIG 4: Photosynthesis process

II. BESIDES THIS HOW PHYSICS AND ENGINEERING ARE RELATED

Do you wish to build things? Does one wish to take things apart to visualize however they work? You'll be a good engineer. If you study at university, you will find a great deal of the courses overlap with physics. However why is that? Physics could be a science that tries to work out the elemental laws of the universe in a very manner that may enable you to form predictions. It tries to boil the universe down into some basic, mathematical laws. Engineering, on the opposite hand, cares with determining a way to style, build, and use structures and machines. Thus however are those 2 things related?

Let's say you are building a posh span. You wish to make the bridge sturdy enough that it will take the load of dozens of cars as shown in figure 5, however it conjointly has got to be able to handle wind, ice, rain, and no matter else nature would possibly throw at it. However does one realize it can do that? If you savvy wrong, one outstandingly sturdy facet draft and therefore the unit might collapse. The thanks to make certain the issue you are building can work properly is to investigate it victimisation the laws of physics. The laws of physics will tell you regarding forces, tension, harmonic vibrations and oscillations, lastingness, elasticity, and every one types of different ideas that you simply will use to form calculations regarding your bridge. Put

simply, if you perceive the laws of nature, then you'll use that information to predict what is going to happen to the items you build. Engineering involves applying physics in technical ways that -- applying it to technology.

[3] Ohio State University: Real-World Relativity: The GPS Navigation System

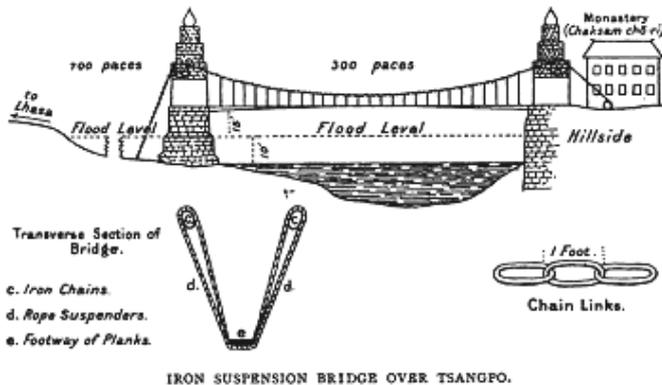


FIG 5: Built in 1430, one of the earliest known suspension bridges had physics to thank for its success

III. SOME TECHNICAL APPLICATIONS OF PHYSICS

There are varied applications of physics to engineering and different technical fields: to call however a few:

- Electrical engineering involves planning electrical circuits together with motors, electronic appliances, fiber networks, computers, and communication links. Circuits use physics principles like voltage, current and resistance.
- Chemical engineering involves planning systems for oil purification, the creation of commercial chemicals and unreal fibers and merchandise, which needs Associate in understanding of molecular forces.
- Mechanical engineering deals with craft, engines, weapons, cars, pneumatics, and fluid mechanics. For these we've to grasp forces, and sophisticated fluid motions like air flow across Associate in craft, or water flow through tubes.
- Civil engineering involves planning and building bridges, dams, sky-scrappers, roads, and railways, victimisation our physics information of forces, fluid pressure, and gravity.

IV. CONCLUSION

In short, physics define how everything works around us. When cannot separate anything from science and, our world cannot disconnect itself from the wonders of Physics.

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- [2] Georgia State University: Simple Machines