

1.3: Scope of Physics


 An antenna depends on the interaction of matter and energy to function, making it a perfect example of physics in action

Figure 1.3.1

Physics is more than calculating the momentum of billiard balls hitting each other or the friction acting on a speeding car's tires. Physics includes the study of practically every form of matter and how it interacts with other matter and with energy in various forms. The image shows one of several large parabolic antennas that NASA physicists used for years to communicate with ships and devices completing solar system exploration missions.

Definition of Physics

What is **physics**? Physics is the branch of science that studies the physical world, including objects as small as subatomic particles and as large as galaxies. It studies the nature of matter and energy and how they interact. Physicists are inquisitive people who want to know the causes of what they see. How does the moon move? Why does the moon move? Why do the stars shine? Why do your hands get warm when you rub them together? Physicists, like all scientists, hope to find explanations that describe more than one phenomenon and offer a better understanding of how the universe works.

Common Misconceptions

People commonly believe that physics is all about solving word problems and memorizing equations. While it is true that many physics classes focus on the equations, it is important to remember that the purpose of physics is less about the problems and more about using equations, laws, and theories to understand the world we live in.

Summary

- Physics is the branch of science that studies matter and energy and how they interact.

Review

1. Give your own definition of physics.
2. What do you already know about physics? What do you think you know?
3. Physics is all around us, all the time. Give a few examples of physics you have experienced.

Explore More

Use the resource below to answer the questions that follow.



1. Why can't Hadfield dip the washcloth in a bag full of water?
2. Pause the video at 1:55. What do you expect will happen as he wrings out the washcloth?
3. What does the water do? Why?

Additional Resources

Video:



Real World Application: Ollie Up

Real World Application: Teen Uses Science to Make Water Safe

Video:



Video:



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