

# BITWISER

bitWise Academy Newsletter

**SAT Prep**  
**May 7 and Jun 4**

**Experienced Tutors**  
**Group & 1:1 Sessions**  
**Practice Test League**  
**Simulated SAT**

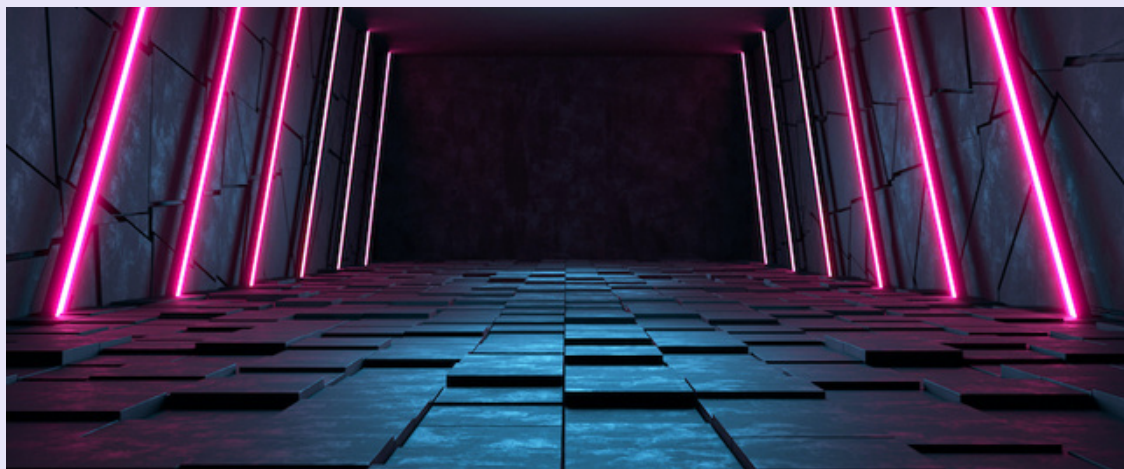
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**The bitWise**  
**community is**  
**now on**  
**Discord, the**  
**popular**  
**platform for**  
**student**  
**communities**



## GAMES, ANIMATIONS, AND PHYSICS

Have we ever paused to think about the practicality of physics in our every day lives - a bouncing basket ball, spinning bicycle wheels, driving a car to work, heating food in a microwave? These are everyday life moments that students can learn from. Physics is a vast subject that spans many fields, and academic physics is no exception. Whether it is Sun's rays and visible light or the nuclear explosions inside a star, each describes a different part of the physical world. Physics in games make the scenes, characters, and interactions realistic. When we talk about incorporating physics in games, we're talking about classical mechanics: the laws that control how objects move when they're influenced by gravity and other forces. The inclusion of physics laws into a simulation or game engine, particularly in 3D computer graphics, to make the effects appear more realistic to the observer, is known as computer animation physics or game physics.

Simulation physics is usually a close approximation of fundamental physics, and calculations are simplified according to the complexity required. Objects in games can be given properties such as mass, inertia, bounce, and buoyancy. Physics simulations have a wide range of applications. Military predicts the ballistic velocity of projectiles, and civil and automotive engineering show how certain structures would react in the event of an earthquake or a vehicle accident. Game design and physics make an incredible contribution to understanding many fields.



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## COURSE SPOTLIGHT

### GAME PROGRAMMING WITH SCRATCH

The massive success of the AR-based game, Pokeman Go, has paved the way for other games to incorporate AR and provide an enhanced experience to the users. Gaming continues to attract a lot of teenagers.

This course from bitWise is designed for those students who love playing games. Here, you'll learn concepts beyond just the basics of programming and apply the concepts to plan, design, and develop games that people can play. To learn game design, you will use Scratch, the block-based programming language from MIT that you might be familiar with already. Scratch will allow you to create games easily and rapidly by dragging and dropping blocks to code the logic for your games.

[Link to the course](#)

### LIVE - Online Tutoring

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Experienced Tutors  
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<https://live.bitwise.academy/live-courses>

### DID YOU KNOW?

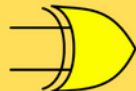
RAGDOLL PHYSICS IS A TYPE OF PROCEDURAL ANIMATION USED BY PHYSICS ENGINES, WHICH IS OFTEN USED AS A REPLACEMENT FOR TRADITIONAL STATIC ANIMATIONS IN VIDEO GAMES AND ANIMATED FILMS.

THE JURASSIC PARK LICENSED GAME JURASSIC PARK: TRESPASSER EXHIBITED RAGDOLL PHYSICS IN 1998

GAME PHYSICS IS AN ESSENTIAL TOOL IN AUTOMOTIVE, CIVIL, AND OTHER ENGINEERING DISCIPLINES, USED TO SIMULATE HOW CERTAIN STRUCTURES WOULD BEHAVE IN EVENTS LIKE AN EARTHQUAKE OR A CAR CRASH

## GAME PHYSICS

Most modern games depend on a physics engine to provide the laws of physics to the game. The purpose of this engine is to make the effects appear realistic to an observer or player. One of the key focus areas of the game engine is to simulate Newtonian physics within the game environment. Our exciting course, specifically designed to teach physics in the context of games, covers Newton's laws, equations of motion, basic concepts of acceleration, forces, gravity-free body diagrams, momentum, collisions, impact, and spring. Basic Math concepts are also covered in geometry and trigonometry. Students will learn physics in simple terms and apply concepts to various algorithms applicable to games that leverage physics. This is an advanced course that goes beyond just simple animations and basic Scratch programs.



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#1 eLearning Platform for  
STEM and Coding

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[Link to the course](#)

## FEATURE HIGHLIGHTS



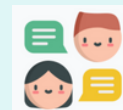
### Gamification & Achievements



Gamification is incorporated into the platform at all levels, right from within the interactive content to the assessments, awarding badges and certificates for milestones and achievements. We have leaderboards to showcase and promote student achievements across bitWise.



### Friends Circle



Friends Circle is a student favorite. Students can create their own social fabric, keep their friends informed of their achievements, and share what they have been learning on bitWise. The platform provides a safe and monitored environment for students to message their friends and collaborate. Parents are aware of the activities and messages within the Friends Circle.

## STUDENT CORNER

I am a number that is the sum of two different pairs of cubes. My first two digits and last two digits are both prime numbers. What am I?

*Answer: 1729; the sum of the cubes of 10 and 9 - a cube of 10 is 1000 and a cube of 9 is 729. Also, do you know that 1729, the Hardy-Ramanujan Number, is the smallest number that can be expressed as the sum of two different cubes in two different ways.*

## STUDENT SPEAKS

"The AP Computer Science classes were very helpful to prepare for my AP Exam. The concepts and topics were taught to me clearly. This class gave me a lot of confidence to go take the AP Computer Science A exam"



**Shruthi**  
JUNIOR  
HIGH SCHOOL



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