

Parent Guide to the Standards

# **Vector-Matrix Multiplication**

## Today's Standard

HSN.VM.C11 - (+) Multiply a vector (regarded as a matrix with one column) by a matrix of suitable dimensions to produce another vector. Work with matrices as transformations of vectors.

#### Real-World Applications for this Standard

Computer graphics transformations; Physics simulations; Engineering mechanics; Economics modeling; Robotics navigation

#### Today I Learned

Today, we learned about multiplying vectors by matrices. This helps us change vectors in different ways, which is useful in many real-world situations like making video game graphics look realistic.

## **Common Stumbling Blocks**

Sometimes, kids think that the order of multiplying matrices doesn't matter, but it does! Also, they might think that multiplying two vectors will always give another vector, but that's not always true when we use matrices.

## Quiz Me

- What is a vector?
- What is a matrix?
- Can you multiply any two matrices in any order?
- What happens when you multiply a vector by a matrix?
- Why is this important in real life?

## Help Me

Multiplying vectors by matrices helps us change vectors in useful ways. For example, in video games, this helps make characters move and look real. It's like using a special tool to change shapes and directions.