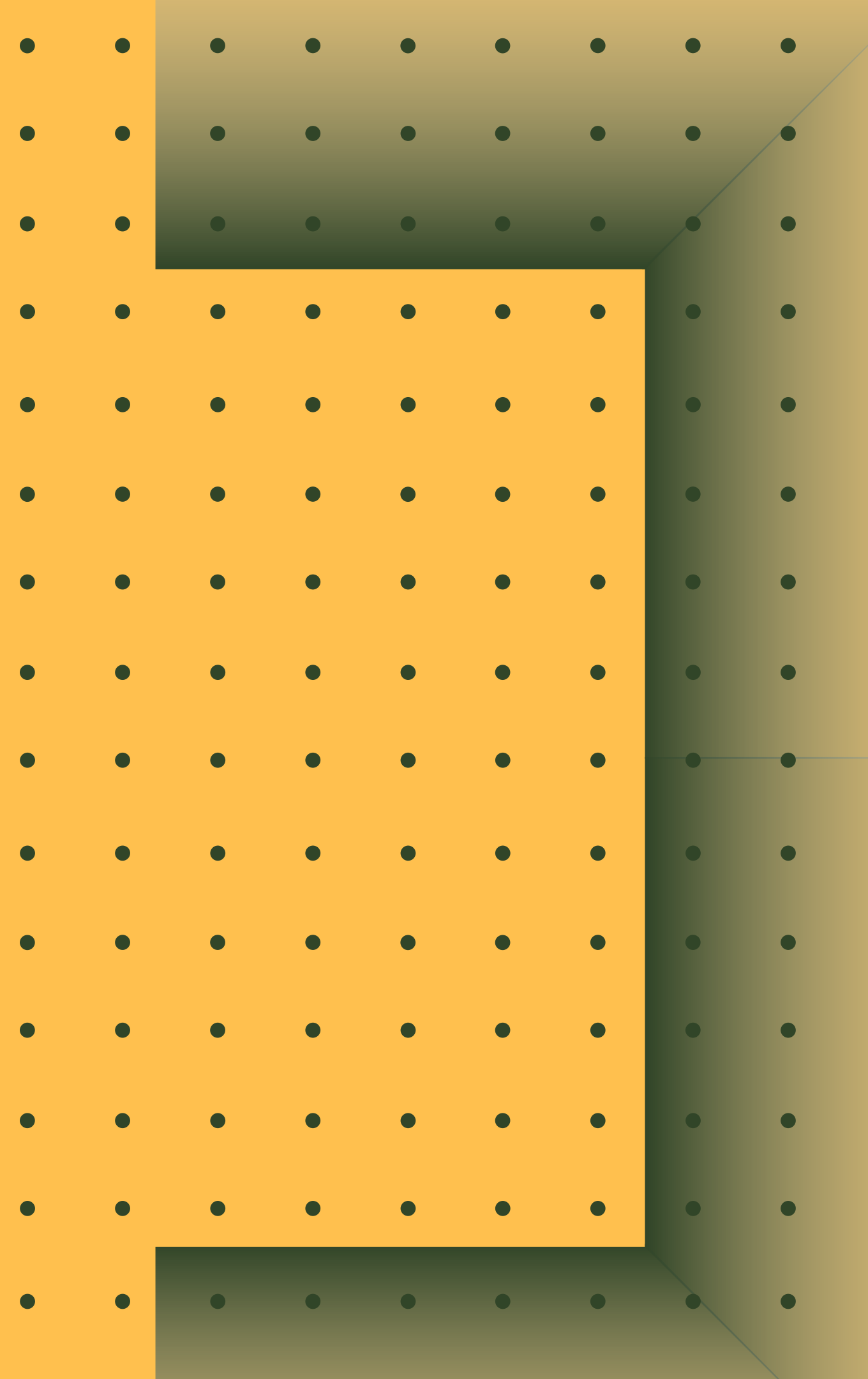


# Dot Product & Angle

Understanding the **relationship between vectors** through dot product and angle calculations.





# Dot Product

Understanding the definition and formula of dot product

1

The dot product provides a measure of **vector similarity**.

2

It allows calculation of the **angle between vectors** effectively.

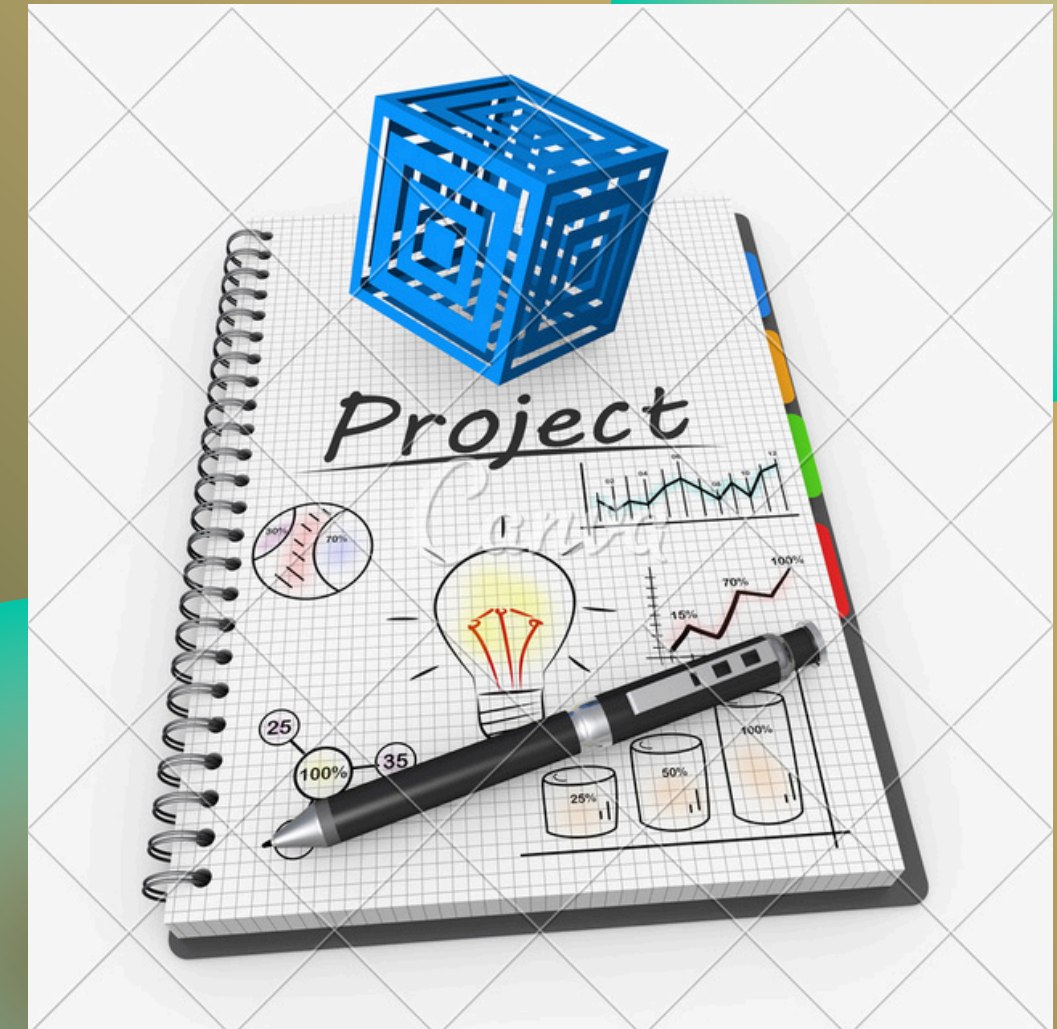
3

Essential for applications in physics and **graphics programming**.

# Dot Product Visualization

Understanding the relationship between vectors and their projections

This diagram illustrates the **dot product** between vectors, showing how projection helps in calculating the angle between them.





# Angle & Orthogonality

Understanding the relationship between vectors and angles

1

The dot product determines the **angle between** two vectors.

2

Cosine of the angle relates directly to the **dot product**.

3

Orthogonality occurs when the **dot product equals zero**.

# Understanding Orthogonality

Exploring the relationship between vectors and their dot product

When  $\mathbf{a} \cdot \mathbf{b} = 0$ , vectors are orthogonal, indicating they are at right angles to each other, which has important implications in geometry and physics.

