# Project Title: Invention of Zero and Decimal System

## Introduction

Zero and the decimal system are two of the greatest contributions of ancient Indian mathematics. They laid the foundation for modern mathematics, science, and technology.

## Origin of Zero (■■nya)

The concept of zero originated in ancient India. Early philosophical texts described zero as ■■nya, meaning emptiness or void. Brahmagupta, a 7th-century Indian mathematician, formally defined zero as a number and explained its mathematical operations.

## Zero as a Number

1   A number added to zero remains unchanged.

2   A number multiplied by zero becomes zero.

3   Zero was treated as an independent number, not just a placeholder.

## Importance of Zero

1   Helps represent large numbers.

2   Essential for algebra and calculus.

3   Forms the base of computing and engineering.

## Decimal Place Value System

Ancient Indians developed the base-10 decimal system where the value of a digit depends on its position. The digits 0–9 are used to represent all numbers efficiently.

## Global Impact

The decimal system spread from India to the Arab world and later to Europe. Today, it is used worldwide and forms the foundation of modern mathematics and science.

## Conclusion

The invention of zero and the decimal system revolutionized mathematics. These contributions continue to influence modern education, science, and technology.