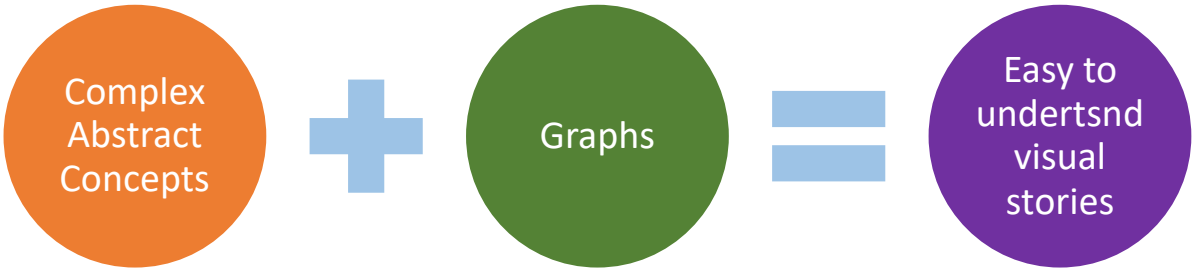
Chapter 1: Understanding the Basics of Graphs

1.1 Introduction to Graphs in Physics

- **The Role of Graphs in Physics:**

Imagine you're on a road trip with friends, driving down a long highway. As you move along, you notice the speedometer needle moving up and down, showing how fast you're going. You could write down the speed every minute and compare it to the time spent driving. But what if you wanted to see the whole picture at once? This is where a graph comes in handy—it's like taking a snapshot of your journey, capturing how your speed changes over time in one clear, visual format.

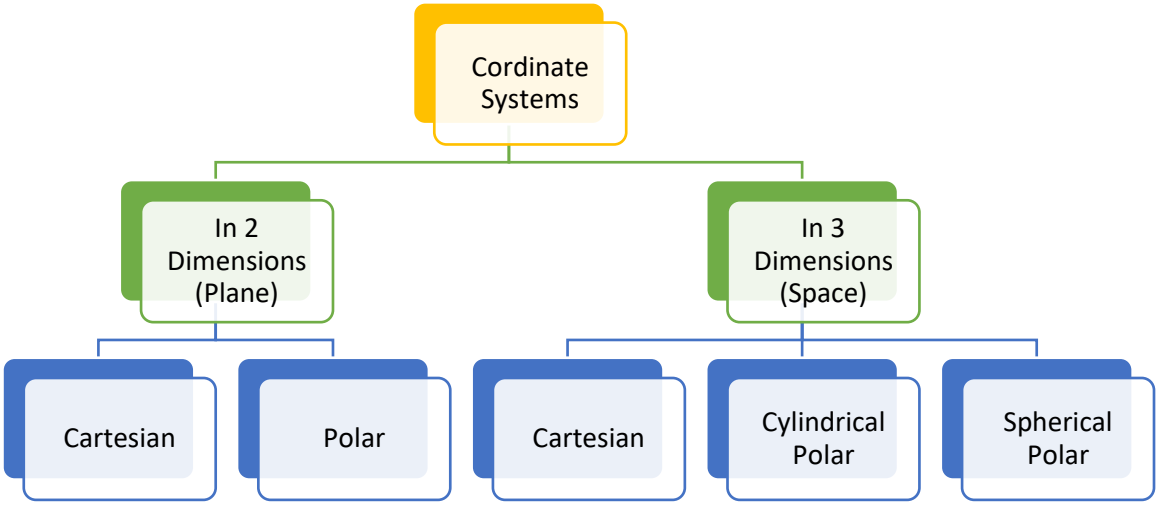
Instead of just dealing with numbers and equations, graphs allow us to see patterns, trends, and connections that might not be obvious at first glance.



What Graph helps us to do?

- Tell us whats happening (understand patterns)
- Predict what might happen next (predict trends)
- Understand relationship between physical quantities
- Compare data - similarities & differences
- Enhance Problem solving skills

1.3 Coordinate Systems



For details see the YouTube video – CLICK HERE

Or copy paste the link in your browser:
https://youtu.be/SUlUHTt-xqY?si=MQf9iIBINLLnGAhQ

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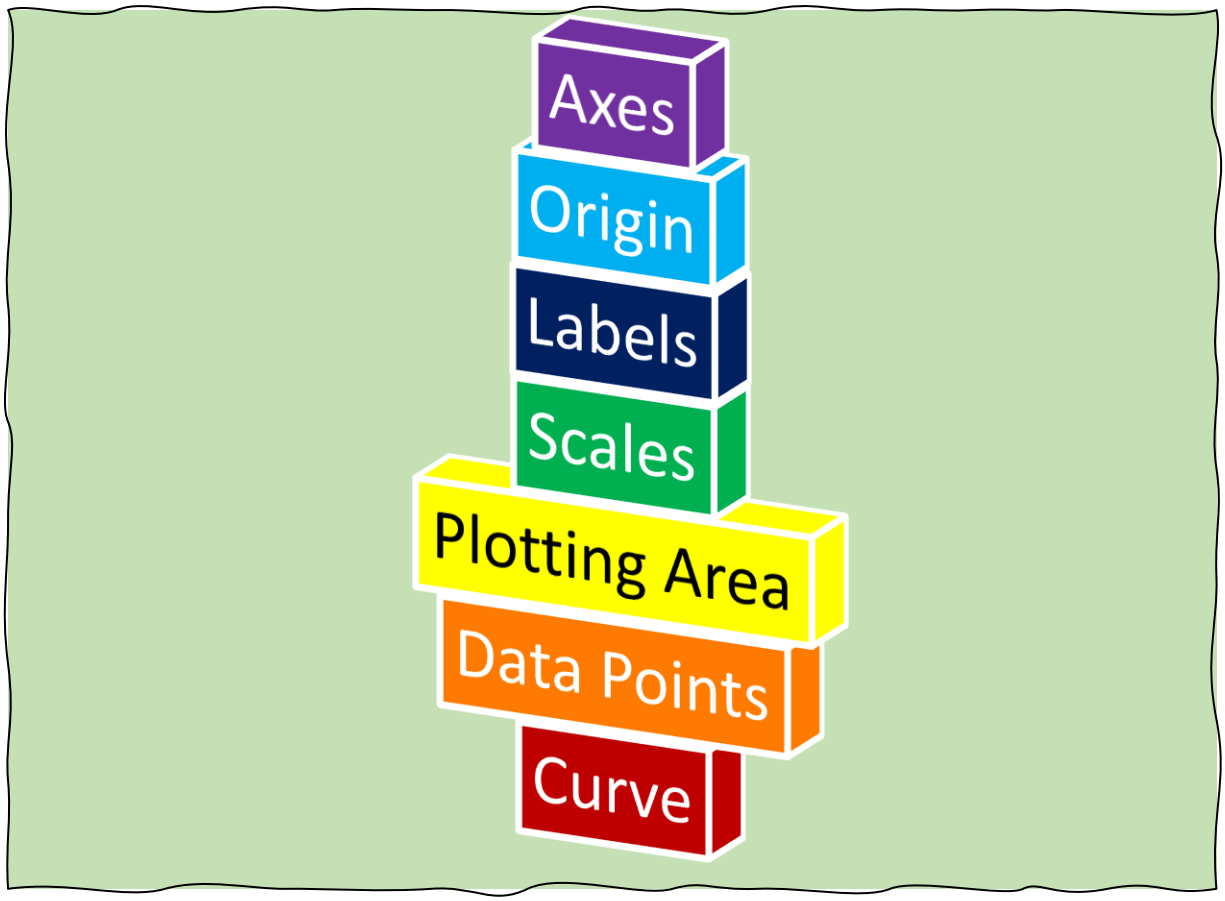
1.2 Building Blocks of a 2 Dimensional Graph



Axes:

In cartesian coordinate system, the X-axis and Y-axis are the backbone of any graph. The X-axis typically runs horizontally, and the Y-axis runs vertically. These axes represent different quantities that you're comparing or analyzing.