PROBABILITY
USES OF PROBABILITY IN REAL LIFE

MIND MAP

USES OF PROBABILITY IN REAL LIFE

Get Started

EXAMPLES

In a daily life come across the words like probably, likely, may be, chance and hope etc. All these are synonyms to probability.

Weather

▪ Meteorological department predicts the weather by observing trends from the data collected over many years in the past.
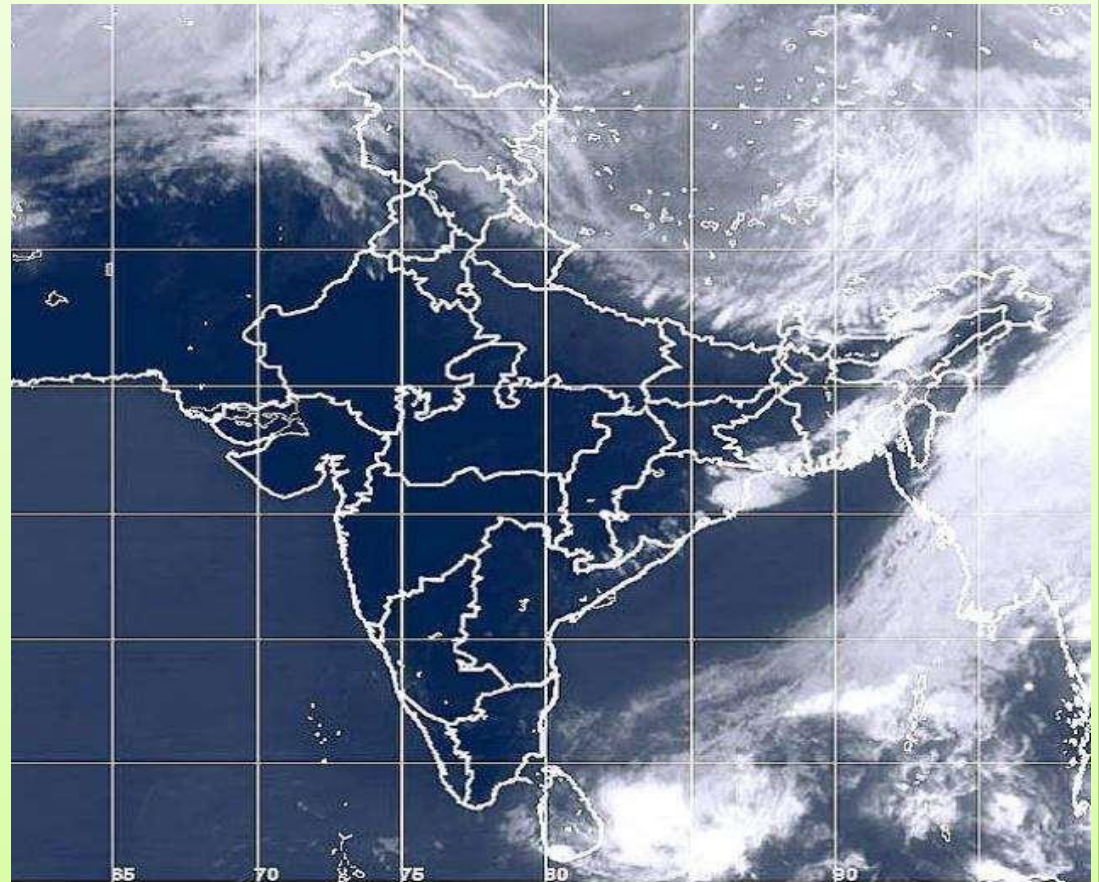

Will it Rain Woes This Year?

Category
● Rainfall Range (% of avg)
● Forecast Probability (%)

EXCESS
>110 1

ABOVE NORMAL
104-110 8

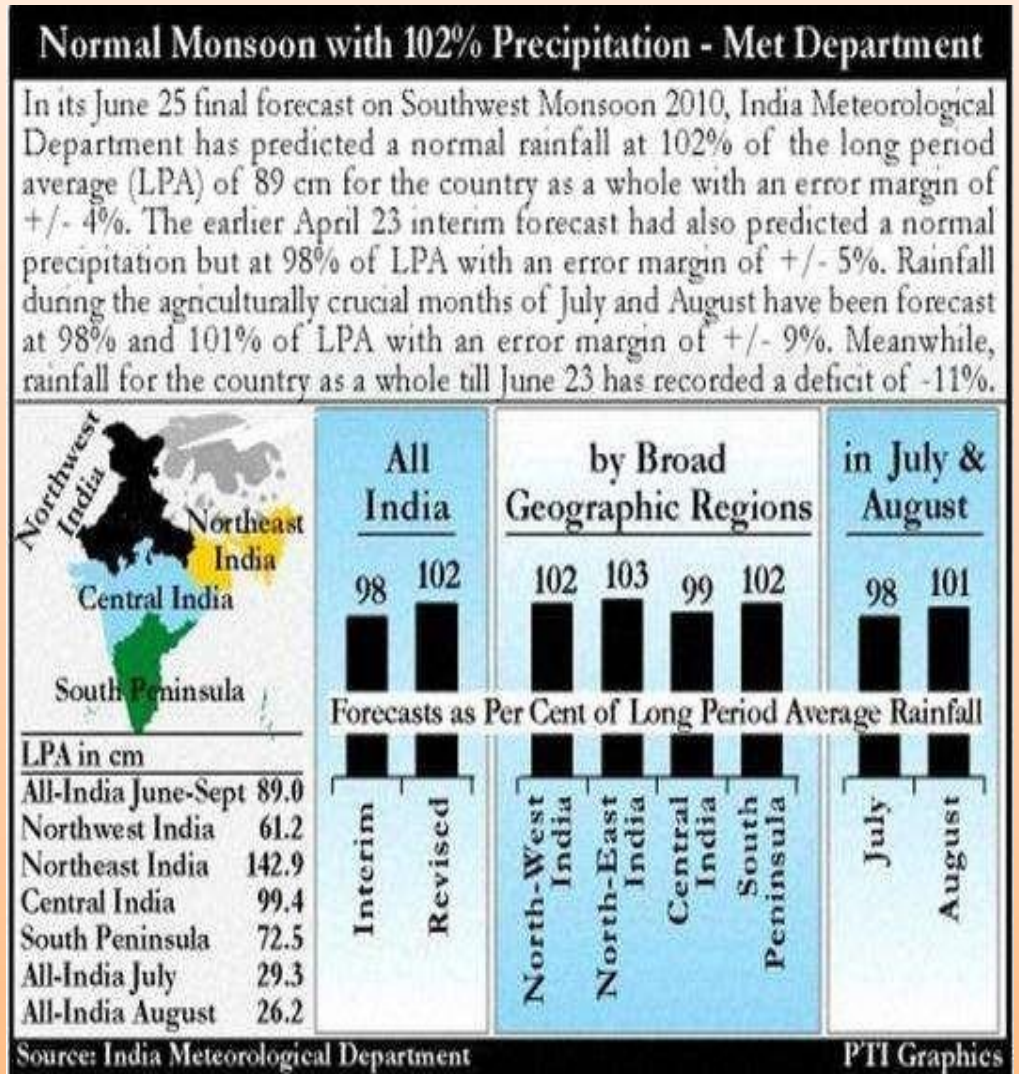NORMAL
96-104 35

BELOW NORMAL
90-96 33

DEFICIENT
<90 23

Global scientists have been issuing warnings of a likely El Nino effect this year

Met Dept says monsoon rain likely to be 95% of long period average, warns of El Nino

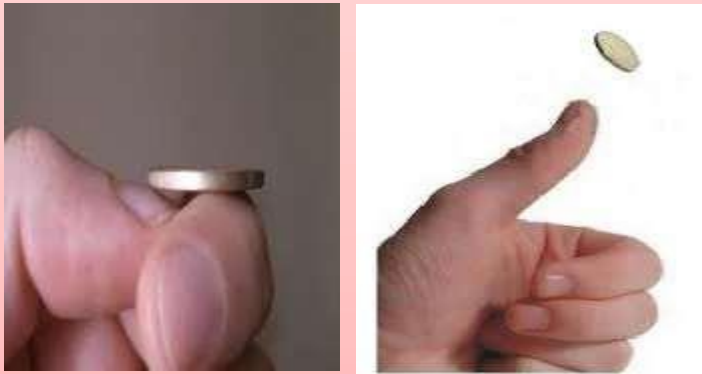

भारत मौसम विज्ञान विभाग
INDIA METEOROLOGICAL DEPARTMENT

EXAMPLE

Weather – when planning
An outdoor activity, people
Generally check the probability
of rain. Meteorologists also
predict The weather based on
the patterns of the previous
year, temperatures and natural
disasters are also predicted
on probability and nothing is
ever stated as a surety
but a possibility and
an approximation.

Normal Monsoon with 102% Precipitation - Met Department

In its June 25 final forecast on Southwest Monsoon 2010, India Meteorological Department has predicted a normal rainfall at 102% of the long period average (LPA) of 89 cm for the country as a whole with an error margin of +/- 4%. The earlier April 23 interim forecast had also predicted a normal precipitation but at 98% of LPA with an error margin of +/- 5%. Rainfall during the agriculturally crucial months of July and August have been forecast at 98% and 101% of LPA with an error margin of +/- 9%. Meanwhile, rainfall for the country as a whole till June 23 has recorded a deficit of -11%.

Northwest India
Northeast India
Central India
South Peninsula

All India
98   102

by Broad Geographic Regions
102   103   99   102

in July & August
98   101

Forecasts as Per Cent of Long Period Average Rainfall

Interim | Revised | North-West India | North-East India | Central India | South Peninsula | July | August

LPA in cm	
All-India June-Sept	89.0
Northwest India	61.2
Northeast India	142.9
Central India	99.4
South Peninsula	72.5
All-India July	29.3
All-India August	26.2

Source: India Meteorological Department   PTI Graphics

Sports – be it basketball or football and coin is tossed and both teams have 50/50 chances of winning it, a basketball player takes a free throw judging his past performance it can be determined if he will make it or not.
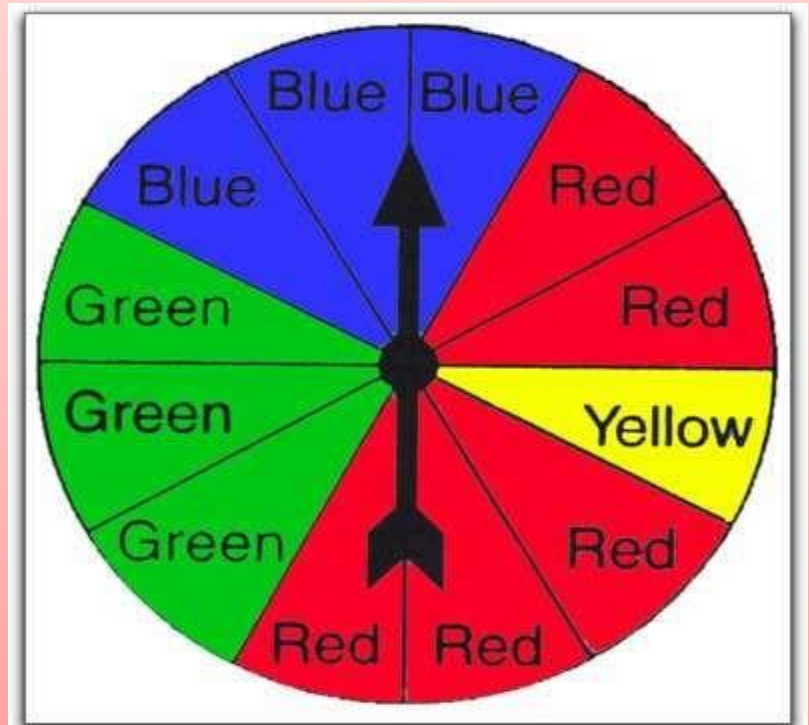
Board Games

Board Games – a game spinner with four sections, there is a 25% chance of it landing res, since one of the 4 sections is red. Similarly the odds of rolling one die and getting and even number there is a 50% chance since three of the six numbers on a die are even.
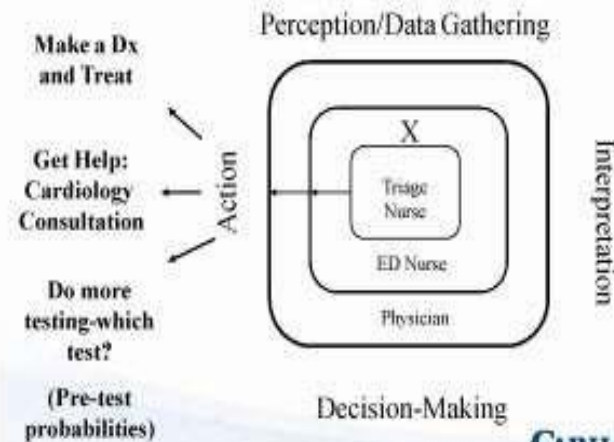
Medical Decisions – When a patient is advised to undergo surgery, they often want to know the success rate of the operation which is nothing but a probability rate. Based on the same the patient takes a decision whether or not to go ahead with the same.

Medical Decision-Making

Make a Dx and Treat

Get Help: Cardiology Consultation

Do more testing-which test?

(Pre-test probabilities)

Perception/Data Gathering

X

Triage Nurse

ED Nurse

Physician

Action

Interpretation

Decision-Making
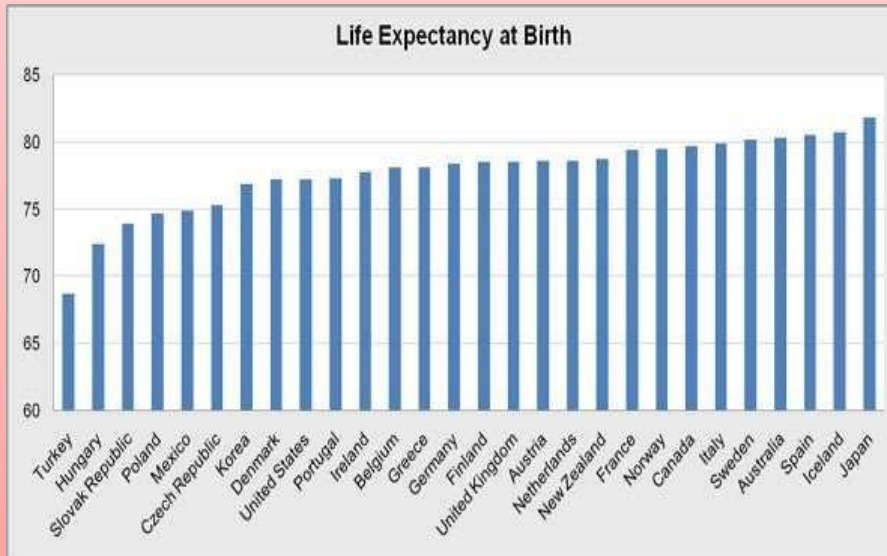
CARILIONCLINIC

An exit poll

Insurance companies calculate the probability of happening of an accident or causality to determine insurance premiums.

"**An exit poll**" is taken after the election
This involves asking voted people to which party they have voted. This gives an idea of winning chances of each candidate and predictions are made accordingly.

EXAMPLES

Life Expectancy – this is based on the number of years the same groups of people have lived in the past. "These ages are used as guidelines by entities such as financial advisers to help clients prepare for their retirement years."

Life Expectancy at Birth

Years in retirement
Life expectancy from actual retirement, men, years

| Official retirement age* | | 1965-70 | 2002-07 |

Sources: OECD; The Economist   *Latest

SUMMARY

Even though we do not realize the use of mathematical probabilities in everyday life, subconsciously we use it in every step that we take. The use of real life probability is a huge area of research and development since it is an ever evolving field.

"The probable is what usually happens." - Aristotle.
It is a simple fact that the future cannot be predicted however, mathematics can help determine its probability and how likely something might occur or not. In our daily lives we often use probability to make better decisions. But, since intuition plays a major role in human thinking, applying mathematical probability becomes a rare fact when thinking of its precise use. Thus, "The easiest definition is that probabilities are numbers between 0 and 1 which specify the chance that something happens."