

Class – X
Lesson Plan

TOPIC- PROBABILITY

Brief description: - This lesson will introduce students to the concept of theoretical probability. They will also learn about various terms, such as equally likely outcomes, elementary event, complement of an event, sure event and impossible event. They will be able to solve questions based on theoretical probability.

UN Sustainable Goals to be achieved (if any): Quality Education

Objectives: (According to Bloom's level)

I - Specific Objectives

Students will be able to:

- 1) Calculate the probability of an event (K, U, A, An)
- 2) Describe the terms equally likely outcomes, elementary event, complement of an event, sure event and impossible event (U)

II - Behavioral objective:-

After completion of the topic students will be able to use and apply concept in day to day life situations like:

- 1) Probability is used in various occupations such as healthcare insurance, Insurance companies uses this to decide on financial policies
- 2) It is widely used in the study of Mathematics, Statistics, Gambling, Physical sciences, Biological sciences, advertising, farming and weather forecasting.
- 3) Role of probability in cricket match .For example, the toss of a coin between the captains to decide which team would bat/ball first.

Skills:

Reasoning
Analytical

Process / Activities:

After showing videos teacher will begin the session by recalling the concepts learnt by students in the previous class. Teacher may ask questions regarding terms, such as experiment, trial, event and outcome. Teacher may also give some questions where the students have to calculate the probability of an event. Thereafter, explain the concept of theoretical probability. Simply put, it is the ratio between the number of ways in which an event can occur and the total number of possible outcomes in the sample space.

• **Activity:**

In this activity, students will perform an experiment to understand the difference between experimental probability and theoretical probability.

Divide the class into a few groups and ask them to perform an experiment as follows.

Give three coins to each group and ask them to find the experimental probability of getting at least two heads. The students should record the outcomes of their experiment in a sheet. Then, ask the students to check the outcome of the experiment using theoretical probability. Teacher will guide the students in the right direction by asking them about the possible outcomes. Once the activity is done, teacher will discuss the difference between the experimental and theoretical probability.

Expected learning outcome:

Students would be able to:

- 1) Calculate the probability of an event.
- 2) Describe the terms equally likely outcomes, elementary event, complement of an event, sure event and impossible event.

After completion of the topic students will be able to use and apply concept in day to day life situations like:

- 3) Probability is used in various occupations such as healthcare insurance, Insurance companies uses this to decide on financial policies
- 4) It is widely used in the study of Mathematics, Statistics, Gambling, Physical sciences, Biological sciences, advertising, farming and weather forecasting.
- 5) Role of probability in cricket match .For example, the toss of a coin between the captains to decide which team would bat/ball first.

Assessment: (Based on Solo Taxonomy)

1. Find the probability of getting a head when a coin is tossed once. Also find the probability of getting a tail.(**Prestructural**)
2. Two players, Sangeeta and Reshma, play a tennis match. It is known that the probability of Sangeeta winning the match is 0.62. What is the probability of Reshma winning the match? (**Unistructural**)
3. A bag contains a red ball, a blue ball and two yellow balls, all the balls being of the same size. Kritika takes out a ball from the bag without looking into it. What is the probability that she takes out the (i) Yellow ball? (ii) not Red ball? (iii) Black ball (**Multistructural**)
4. (i) A lot of 20 bulbs contain 4 defective ones. One bulb is drawn at random from the lot. What is the probability that this bulb is defective?
(ii) Suppose the bulb drawn in (i) is not defective and is not replaced. Now one bulb is drawn at random from the rest. What is the probability that this bulb is not defective? (**Relational**)
5. Two dice, one blue and one grey, are thrown at the same time. Write down all the possible outcomes. What is the probability that the sum of the two numbers appearing on the top of the dice is (i) 8? (ii) 13? (iii) Less than or equal to 12?

(**Extended Abstract**).