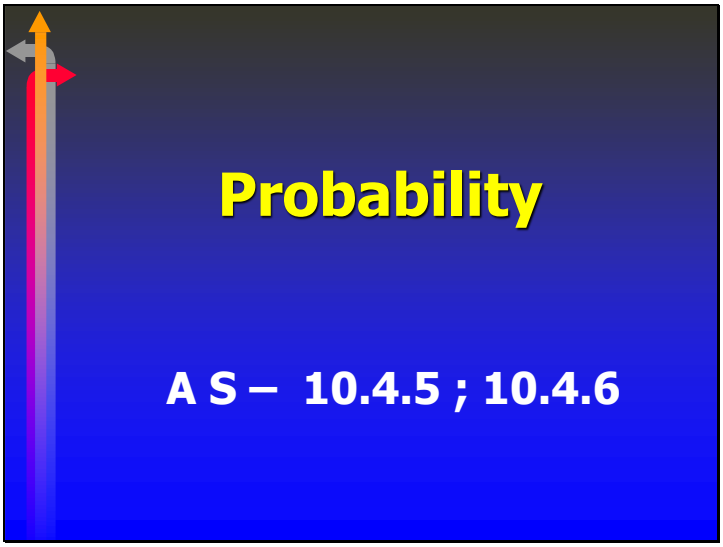
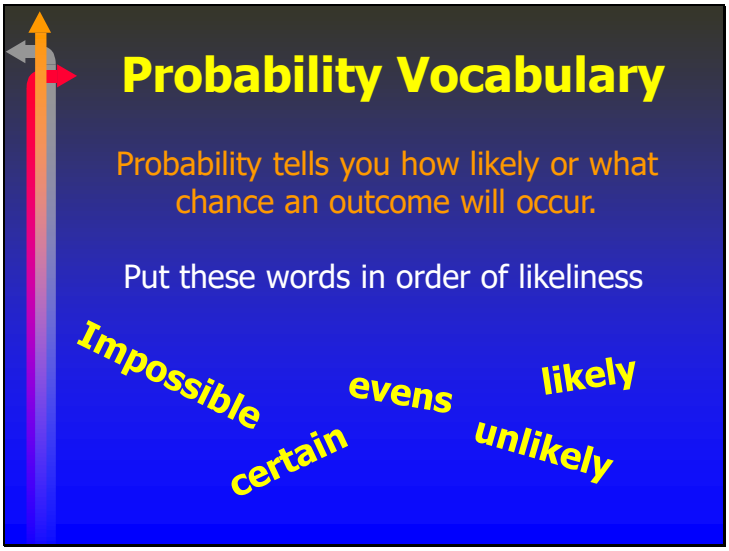
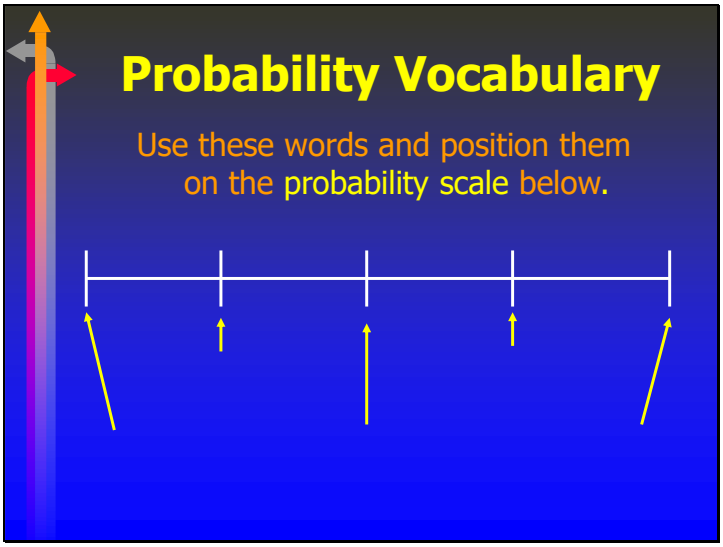
Slide 1



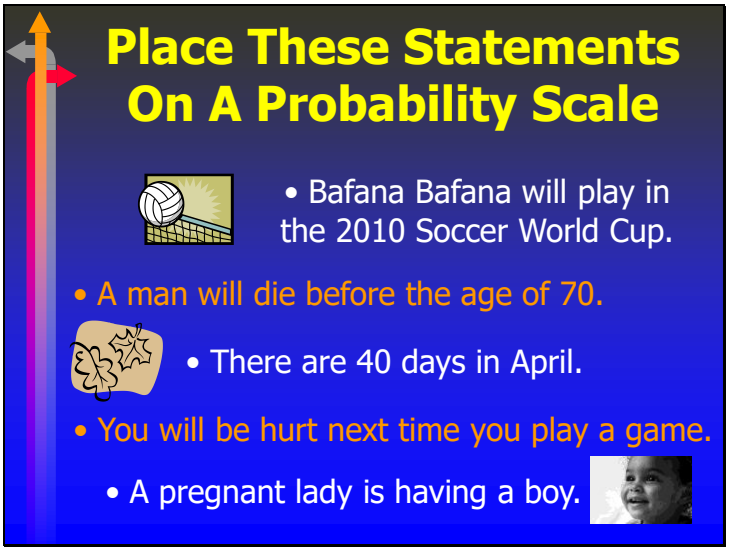
Slide 2


Probability Vocabulary
Probability tells you how likely or what chance an outcome will occur.
Put these words in order of likeliness
Impossible
evens
likely
certain
unlikely

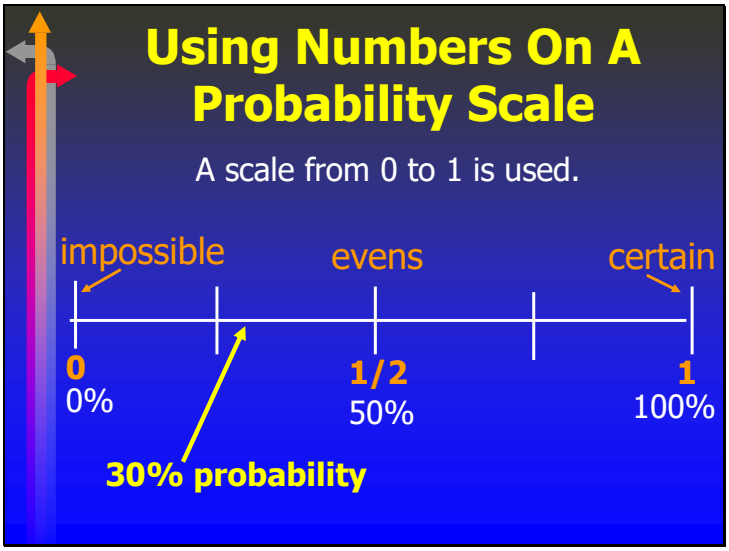
Slide 3


Probability Vocabulary
Use these words and position them
on the probability scale below.

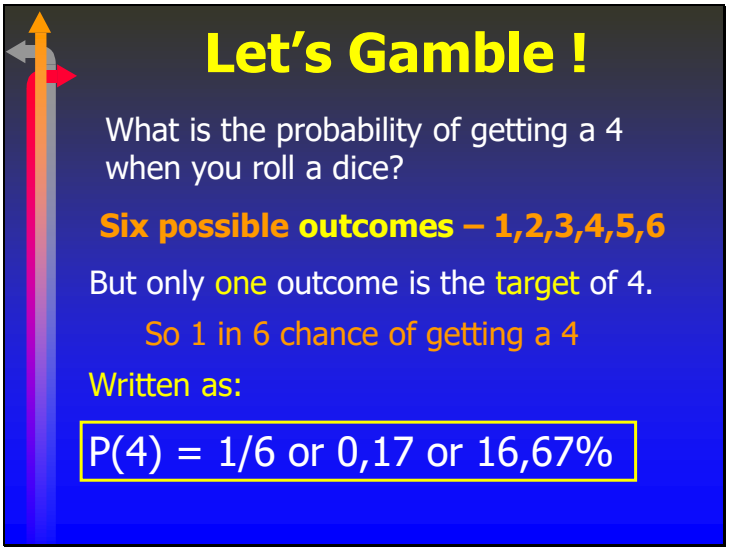
Slide 4


Place These Statements On A Probability Scale
• Bafana Bafana will play in the 2010 Soccer World Cup.
• A man will die before the age of 70.
• There are 40 days in April.
• You will be hurt next time you play a game.
• A pregnant lady is having a boy.

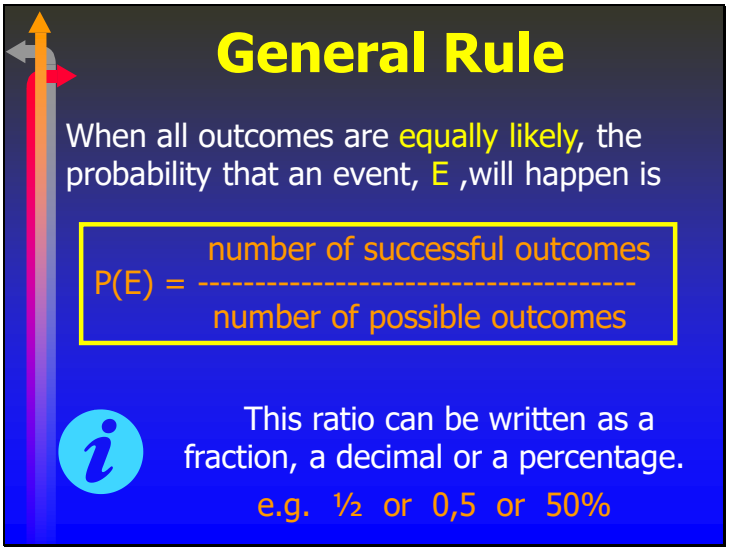
Slide 5


Using Numbers On A Probability Scale
A scale from 0 to 1 is used.
impossible
evens
certain
0
0%
1/2
50%
1
100%
30% probability

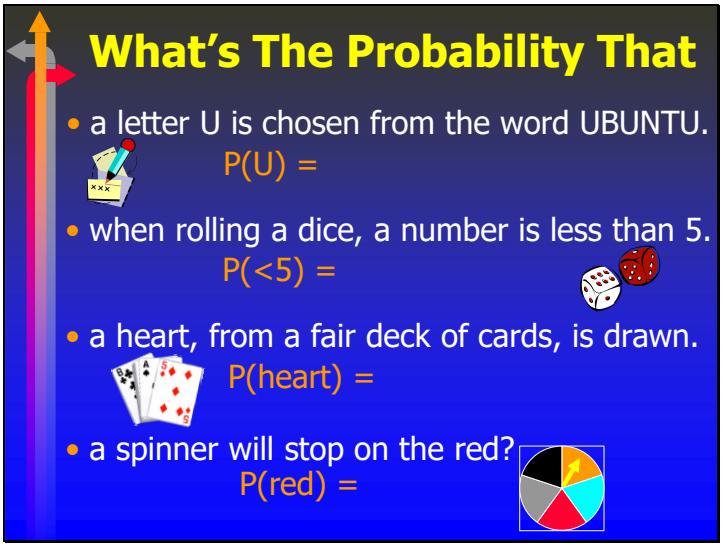
Slide 6


Let's Gamble !
What is the probability of getting a 4 when you roll a dice?
Six possible outcomes – 1,2,3,4,5,6
But only one outcome is the target of 4.
So 1 in 6 chance of getting a 4
Written as:
P(4) = 1/6 or 0,17 or 16,67%

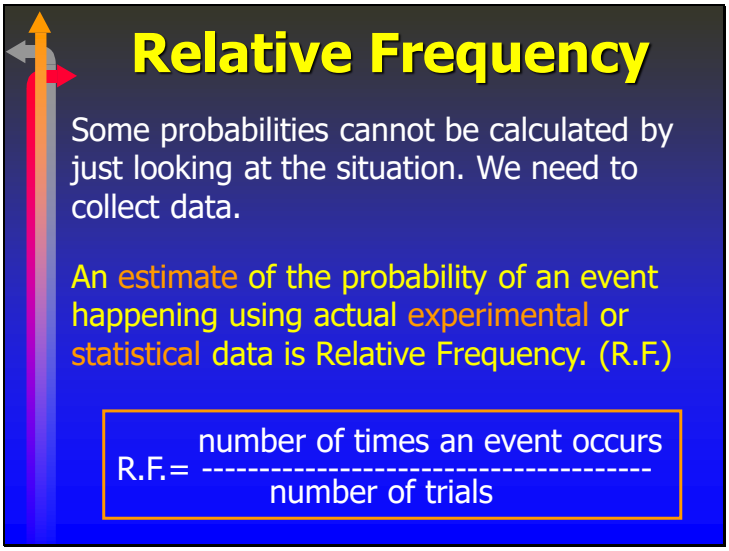
Slide 7


General Rule
When all outcomes are equally likely, the probability that an event, E ,will happen is
P(E) = number of successful outcomes / number of possible outcomes
This ratio can be written as a fraction, a decimal or a percentage.
e.g. ½ or 0,5 or 50%

Slide 8


What's The Probability That
• a letter U is chosen from the word UBUNTU.
P(U) =
• when rolling a dice, a number is less than 5.
P(<5) =
• a heart, from a fair deck of cards, is drawn.
P(heart) =
• a spinner will stop on the red?
P(red) =

Slide 9


Relative Frequency
Some probabilities cannot be calculated by just looking at the situation. We need to collect data.
An estimate of the probability of an event happening using actual experimental or statistical data is Relative Frequency. (R.F.)
R.F.= number of times an event occurs / number of trials

Slide 10

# Simulations

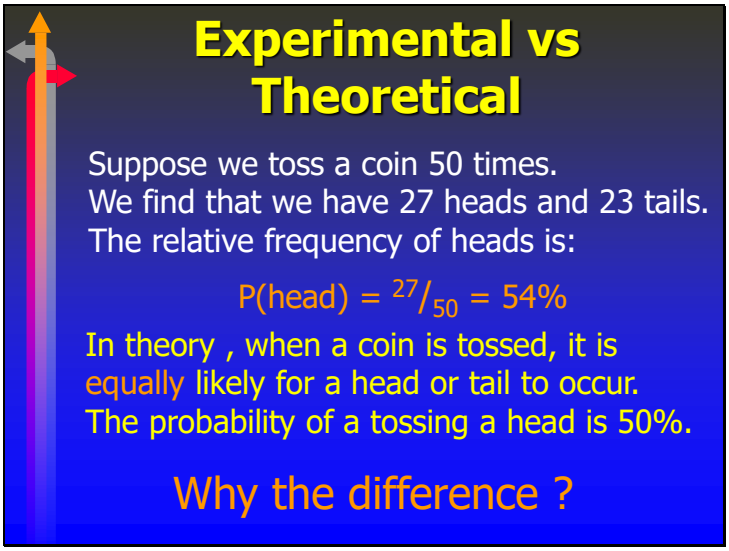
- At netball practice Unathi has 16 free throws. She misses the net 6 times. What is the probability (written as a %) that she will hit the basket?

$$P(\text{hit}) = {}^{10}/_{16} = {}^{5}/_{8} = 62{,}5\ \%$$

- In a random survey of 20 planes arriving at O.R.Tambo Airport, Tom found that 7 did not arrive on time. What is the probability of an aeroplane arriving late?

$$P(\text{late}) = {}^{7}/_{20} = 35\ \%$$

Slide 11


Experimental vs Theoretical
Suppose we toss a coin 50 times.
We find that we have 27 heads and 23 tails.
The relative frequency of heads is:
P(head) = 27/50 = 54%
In theory , when a coin is tossed, it is equally likely for a head or tail to occur.
The probability of a tossing a head is 50%.
Why the difference ?

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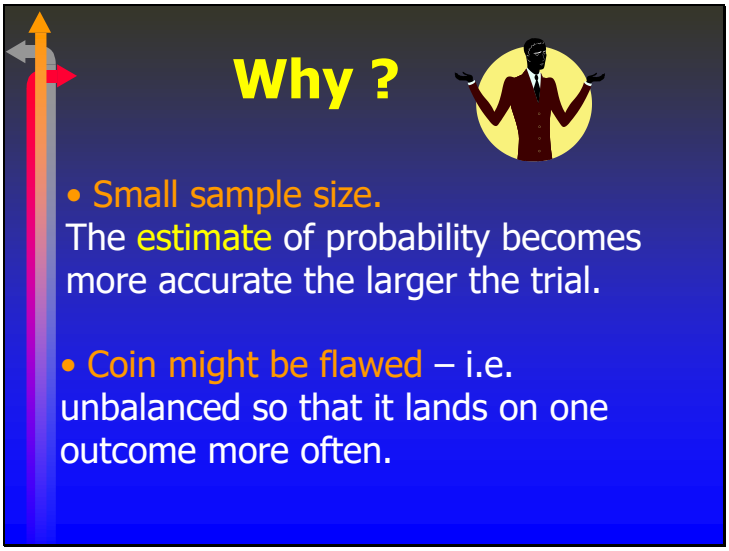

Why ?
• Small sample size.
The estimate of probability becomes more accurate the larger the trial.
• Coin might be flawed – i.e. unbalanced so that it lands on one outcome more often.

Slide 13

# Applications

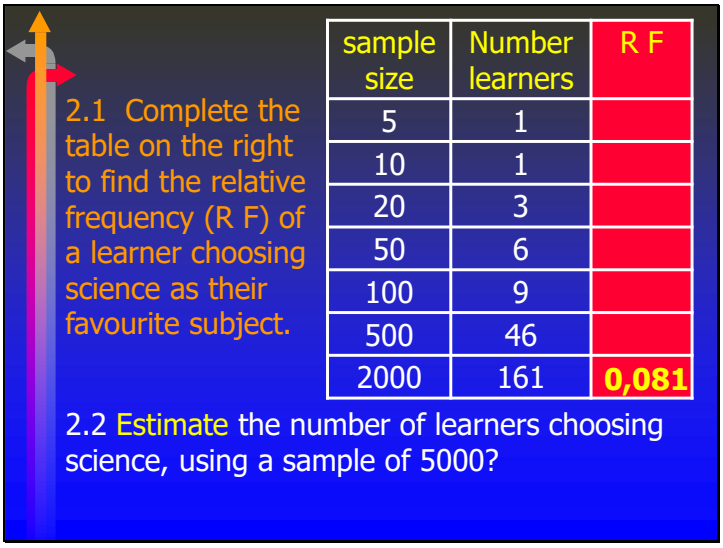
1. A newsagent delivers one magazine per house.

| Bona | Drum | You | Heat | Elle | Soul |
|---|---|---|---|---|---|
| 250 | 120 | 300 | 150 | 100 | 80 |

What is the probability (written as a decimal), that a house picked at random has:

- Bona?
- Drum or You?
- Neither Elle nor Heat?

Slide 14


2.1 Complete the table on the right to find the relative frequency (R F) of a learner choosing science as their favourite subject.
sample size
Number learners
R F
5
1
10
1
20
3
50
6
100
9
500
46
2000
161
0,081
2.2 Estimate the number of learners choosing science, using a sample of 5000?

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