Year 10 Foundation
PROBABILITY TREE DIAGRAMS

Key Concepts

Independent events are events which do not affect one another.

Dependent events affect one another's probabilities. This is also known as **conditional probability**.

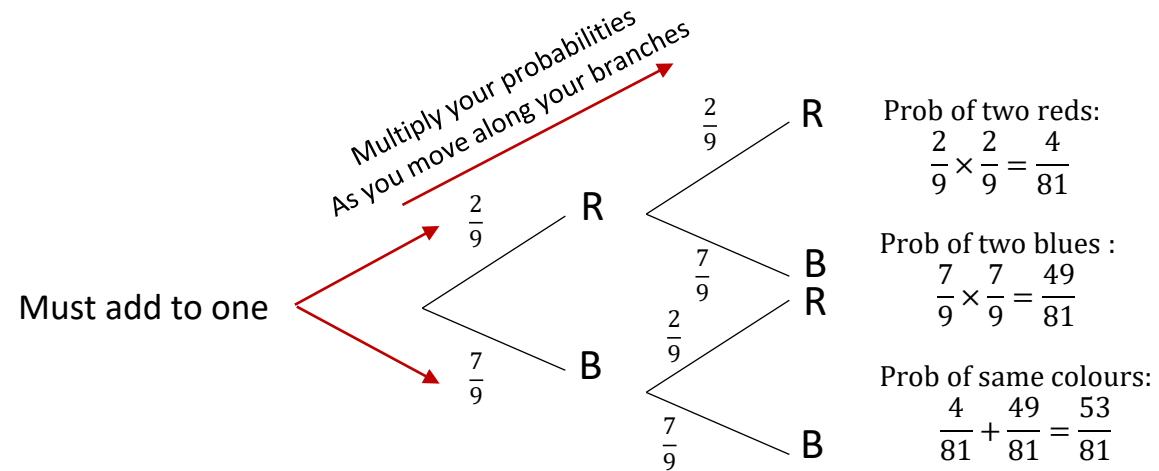We **multiply** two probabilities when one event follows another.

Examples

There are red and blue counters in a bag.

The probability that a red counter is chosen is $\frac{2}{9}$.

A counter is chosen and **replaced**, then a second counter is chosen.

Draw a tree diagram and calculate the probability that two counters of the same colour are chosen.

Multiply your probabilities As you move along your branches

Must add to one

Prob of two reds:
$$\frac{2}{9} \times \frac{2}{9} = \frac{4}{81}$$

Prob of two blues :
$$\frac{7}{9} \times \frac{7}{9} = \frac{49}{81}$$

Prob of same colours:
$$\frac{4}{81} + \frac{49}{81} = \frac{53}{81}$$

361-362, 364, 368-369

Key Words
Independent
Dependant
Conditional
Probability
Fraction
Multiply

There are blue and green pens in a drawer.
There are 4 blues and 7 greens.
A pen is chosen and then **replaced**, then a second pen is chosen.
Draw a tree diagram to show this information and calculate the probability that pens of different colours are chosen.