# M1.4 – Understand simple probability

### Quiz

1. What is the probability of rolling a 5 on a six-sided die?
2. What is the probability of rolling a 3 or a 5 on a six-sided die?
3. What is the probability of rolling at least one 3 when rolling two dice?
4. What is the probability of rolling two 3s one after the other when rolling a single die?
5. We have two cats where one is homozygous for alleles that produce a short tail which is a recessive trait, while the other is homozygous for alleles that produce a long tail which is dominant. With this knowledge we can make predictions about the characteristics of any offspring produced when these two cats are bred together.
6. What is the probability that offspring would inherit one copy of the short tail allele?
7. What is the probability that offspring would have short tails?
8. I have two flowers, both heterozygous at two loci. One locus is the petal colour gene where the yellow allele is recessive and the red allele is dominant. The other locus is the petal shape gene where a smooth petal allele is dominant and a wrinkly petal allele is recessive.

A. What is the probability of an individual inheriting just one copy of the wrinkly allele and just one copy of the red allele? (i.e. being doubly heterozygous just like the parents)

B. What is the probability of seeing an individual from this cross which has wrinkly red petals?

### Produced in collaboration with the University of East Anglia