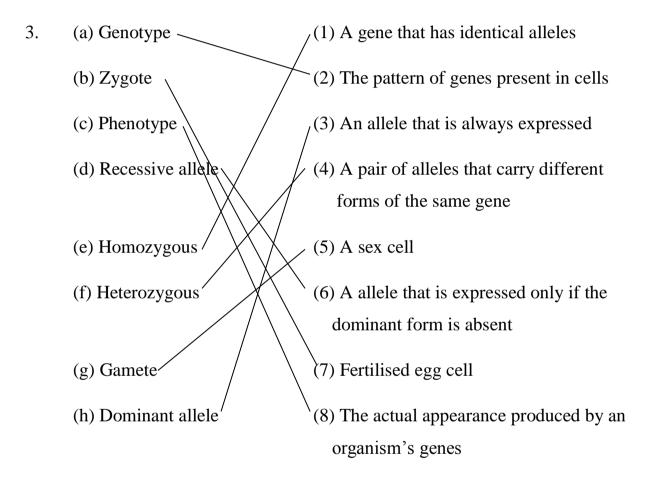
## SCIENCE 1.9 WORKSHEET THREE

ANSWERS DNA, alleles, genes, chromosomes

- 1. DNA, genes, chromosomes, cell nucleus, cell
- 2. An organism inherits one allele from each parent, so together these make two.



- 4. A homozygous dominant cat would be RR, homozygous recessive rr and a heterozygous cat would be Rr.
- 5. To see if a cat is RR or Rr a test cross would have to be carried out. This is a mating with a homozygous recessive cat rr.

		R	R
w the	r	Rr	Rr
	r	Rr	Rr

R

Rr

Rr rr

rr

If the cat was RR all the kittens would show the dominant characteristic for fur colour.

If the cat was Rr approximately half of the	
kittens would show the dominant characteristic	r
and half the recessive characteristic for fur	
colour.	r

1	A	•		. 1	•			.1
6.	A mutation	18 2 1	random	change	in a	gene	or a	chromosome.
0.	I I IIIGUUUUU	10 4	andom	en ange		80110	01 6	em onnobonne.

7. Mutations can form as a result of radiation from UV rays from the sun or from X-rays or from nuclear contamination. It can also be caused by exposure to dangerous chemicals. The sequence of genes on a chromosome can be disturbed which gives rise to new alleles.