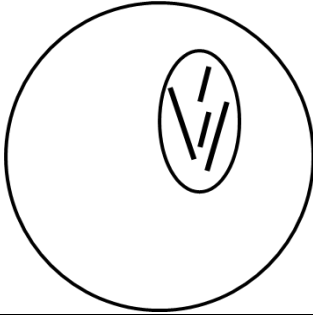
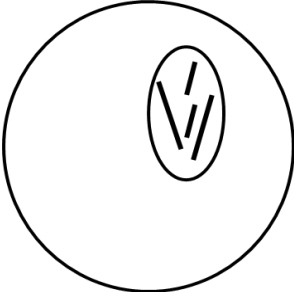
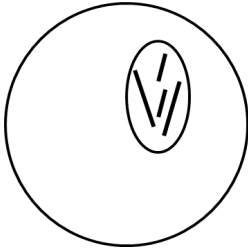
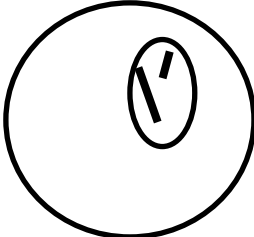


B6 Inheritance Fact Sheet

Reproduction	
1. Name 2 types of reproduction	<ul style="list-style-type: none"> • Sexual • Asexual
2. What are gametes?	Sex cells (egg, sperm, pollen)
3. How many parents are usually needed in sexual reproduction?	2
4. Describe what happens in sexual reproduction	Gametes fuse/ join
5. Name the cells that fuse in sexual reproduction in animals	Egg and sperm
6. Name the cells that fuse in sexual reproduction in flowering plants	Egg and pollen
7. Why does sexual reproduction lead to variation?	Genetic information from parents is mixed
8. How many parents are needed in asexual reproduction?	1
9. Define clone	Genetically identical cells/ organisms
10. Which type of reproduction makes clones?	Asexual
11. Why does asexual reproduction make clones?	There is no mixing of genetic information
Cell division	
1. Name 2 types of cell division	<ul style="list-style-type: none"> • Mitosis • Meiosis
2. List 3 reasons why cells divide by mitosis	<ul style="list-style-type: none"> • Growth • Replace dead cells • Asexual reproduction
3. Draw 1 cell made from this cell by mitosis 	It is a clone, so exactly the same 
4. Name the type of cell division used to make gametes	Meiosis
5. Name 2 organs in animals where meiosis happens	Testes and ovaries

B6 Inheritance Fact Sheet

<p>6. Draw 1 cell made from this cell by meiosis</p> 	<ul style="list-style-type: none"> • 1 mark for half the number of chromosomes (so 2) • 1 mark for 1 of each type (1 long and 1 short) 
<p>7. What happens to the DNA/ chromosomes/ genetic information before both mitosis and meiosis?</p>	<p>Replicated/ copied</p>
<p>8. How many times does a cell divide in meiosis?</p>	<p>2</p>
<p>9. How many cells are made in meiosis?</p>	<p>4</p>
<p>10. How many sets of chromosomes do the cells made in meiosis have?</p>	<p>1</p>
<p>11. Does meiosis make clones?</p>	<p>No – there is genetic variation</p>
<p>12. Define fertilisation</p>	<p>Fusing/ joining of gametes</p>
<p>13. Name the type of cell division done by a fertilised egg which increases the number of cells so it grows</p>	<p>Mitosis</p>
<p>14. Name the process by which cells become specialised</p>	<p>Differentiation</p>
<p>Chromosomes, genes, DNA</p>	
<p>1. Which part of a cell contains the genetic information?</p>	<p>Nucleus</p>
<p>2. Name the chemical which makes up chromosomes</p>	<p>DNA</p>
<p>3. Describe the structure of DNA</p>	<ul style="list-style-type: none"> • Polymer • 2 strands that twist to make a double helix
<p>4. What do we call 1 length of DNA?</p>	<p>Chromosome</p>
<p>5. What do we call a small section of a chromosome that codes for 1 feature?</p>	<p>Gene</p>
<p>6. Put in size order, starting with the smallest: nucleus, gene, cell, chromosome</p>	<p>Gene, chromosome, nucleus, cell</p>
<p>7. What does 1 gene code for?</p>	<p>1 protein/ 1 sequence of amino acids</p>
<p>8. What are proteins made of?</p>	<p>Amino acids</p>
<p>9. How many sets of chromosomes do body cells contain?</p>	<p>2</p>

B6 Inheritance Fact Sheet

10. How many sets of chromosomes do gametes contain?	1									
11. How many chromosomes in a human body cell?	46									
12. How many chromosomes in a human gamete (egg or sperm)?	23									
13. How many pairs of chromosomes are in a human body cell?	23									
14. Are most characteristics caused by multiple or single genes?	Multiple									
15. Give an example of a human characteristic controlled by multiple genes	Height, body mass, skin colour									
Genome										
1. What do we call the entire genetic material of an organism?	Genome									
2. List 3 reasons why understanding the genome is important	<ul style="list-style-type: none"> • search for genes linked to different types of disease • understanding and treatment of inherited disorders • use in tracing human migration patterns from the past. 									
Sex inheritance										
1. Is sex controlled by chromosomes or genes?	chromosomes									
2. State the sex chromosomes of a female mammal	XX									
3. State the sex chromosomes of a male mammal	XY									
4. Draw a diagram to show the probability of a child being a girl	<table style="margin-left: auto; margin-right: auto; border-collapse: collapse;"> <tr> <td></td> <td style="text-align: center;">X</td> <td style="text-align: center;">X</td> </tr> <tr> <td style="text-align: center;">X</td> <td style="background-color: #f8d7da; padding: 5px; text-align: center;">XX</td> <td style="background-color: #f8d7da; padding: 5px; text-align: center;">XX</td> </tr> <tr> <td style="text-align: center;">Y</td> <td style="background-color: #d1ecf1; padding: 5px; text-align: center;">XY</td> <td style="background-color: #d1ecf1; padding: 5px; text-align: center;">XY</td> </tr> </table> <p>XX = girl 2 out of 4 boxes have XX So probability is 50%</p>		X	X	X	XX	XX	Y	XY	XY
	X	X								
X	XX	XX								
Y	XY	XY								
Genetic crosses										
1. What do we call different forms of a gene?	Alleles									
2. The alleles an organism has is the organism's	Genotype									
3. The physical features an organism has is the organism's ...	Phenotype									
4. If we see the feature an allele codes for in the organism, we say the allele is....	Expressed									

B6 Inheritance Fact Sheet

5. What do we call an allele which is expressed, even if only one copy is present?	Dominant
6. What do we call an allele which is only expressed if 2 copies are present?	Recessive
7. How do we describe the genotype for a trait when the organism has 2 of the same allele?	Homozygous
8. How do we describe the genotype for a trait when the organism has 2 different alleles?	Heterozygous
<i>You need to be able to interpret genetic diagrams</i>	
Genetic conditions	
1. What is polydactyly?	Having extra fingers or toes
2. Is the gene for polydactyly dominant or recessive?	Dominant
3. How many parents need to have polydactyly for the child to have it?	1
4. How many alleles for polydactyly does a person need to have to have polydactyly	1
5. Which part of cell is affected in cystic fibrosis?	Cell membranes
6. Is the gene for cystic fibrosis dominant or recessive?	Recessive
7. How many alleles for cystic fibrosis does a person need to have to have cystic fibrosis?	2
8. What is the name for a person who has a copy of an allele but doesn't have condition?	A carrier
9. How could a person develop cystic fibrosis if neither of their parents have the disorder?	If both parents are carriers
10. What can we do to detect genetic disorders before a baby is born?	Embryo screening
11.2 arguments FOR embryo screening (2)	<ul style="list-style-type: none"> • Increase chances of having healthy child without disorder (abort embryos with disorder) • Prepare to provide better care after birth
12. Arguments AGAINST embryo screening (2)	<ul style="list-style-type: none"> • Damage/ kill embryo • Unethical as the embryo a right to life