

17 Inheritance and crosses – Part 2

Name: _____ Class: _____ Date: _____

Vocabulary 词汇

Write each word three times. 把每个单词抄写三遍。

English	中文	Write it 3 times (English)
genotype	基因型	_____
phenotype	表现型	_____
dominant	显性	_____
recessive	隐性	_____
homozygous	纯合	_____
heterozygous	杂合	_____
Punnett square	庞纳特方格	_____

Recall

We use special words to describe what alleles an organism has, and what it looks like.

New ideas

Read these first, then do the Practice.

■ 1 Key words

Word	Meaning
genotype 基因型	the alleles an organism has
phenotype 表现型	the features you can see
dominant 显性	shown even with one copy (capital letter)
recessive 隐性	shown only with two copies (small letter)
homozygous 纯合	two same alleles (BB or bb)
heterozygous 杂合	two different alleles (Bb)

BB	→	brown eyes	B (brown) is dominant b (blue) is recessive
Bb	→	brown eyes	
bb	→	blue eyes	

■ 2 A monohybrid cross

A **Punnett square** 庞纳特方格 predicts the offspring. Two heterozygous parents (Bb × Bb) give a **3:1** ratio:

	B	b	
B	BB	Bb	3 dominant (B_) 1 recessive (bb) ratio 3 : 1
b	Bb	bb	

Watch out: **genotype** = the alleles you have; **phenotype** = the features you can see. A **recessive** allele only shows when there is *no* dominant allele (two recessive copies, e.g. bb). A Bb × Bb cross gives a **3:1** phenotype ratio.

Practice

Try these in order.

17.6 What is the difference between *genotype* and *phenotype*? [2]

17.7 What does *homozygous* mean? [1]

17.8 A recessive allele shows in the phenotype only when...? [1]

17.9 Two heterozygous parents ($Bb \times Bb$) are crossed. What ratio of phenotypes do you expect? [1]

17.10 Write the four offspring genotypes from a $Bb \times Bb$ cross. [2]

17.11 **Challenge.** Two brown-eyed parents, both **Bb**, have a child. State the chance the child has blue eyes (**bb**), and show the cross that gives your answer. [3]