

16 Meiosis and variation – Part 1

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)
diploid	二倍体	_____
chromosomes	染色体	_____
Meiosis	减数分裂	_____
gametes	配子	_____
haploid	单倍体	_____
crossing over	交叉互换	_____
independent assortment	自由组合	_____

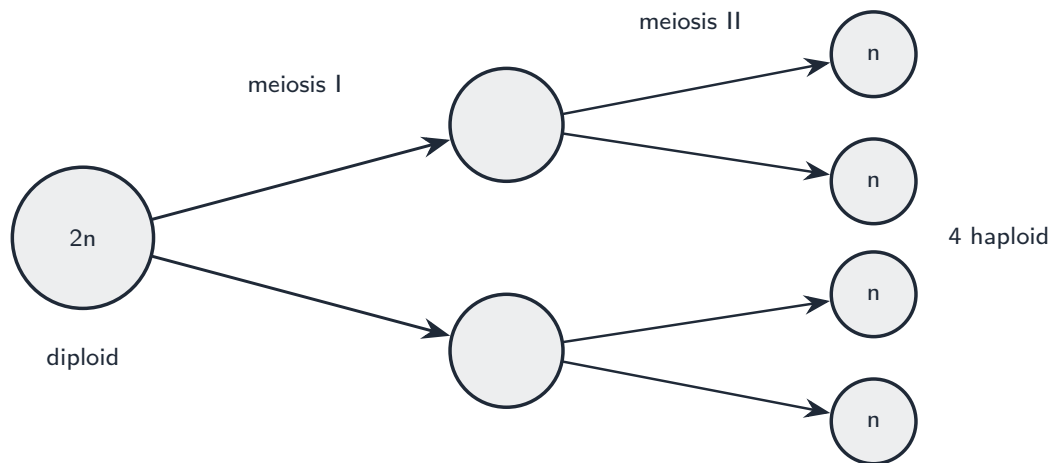
Recall

A **diploid** 二倍体 body cell has two sets of **chromosomes** 染色体 — one from each parent. Sex cells must have only one set, or the number would double each generation.

New ideas

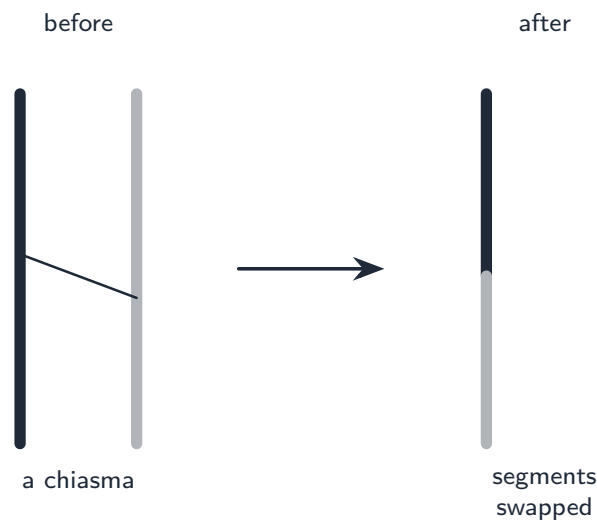
Read these first, then do the Practice.

- 1 Meiosis halves the number



Meiosis 减数分裂 is a special division that makes **gametes** 配子 (sex cells). It has two divisions, giving four **haploid** 单倍体 cells with half the chromosome number.

■ 2 Making variety



Meiosis mixes the alleles in two ways: **crossing over** 交叉互换 (paired chromosomes swap segments) and **independent assortment** 自由组合 (pairs line up in a random order).

Watch out: meiosis *halves* the chromosome number (diploid → four haploid gametes) and *mixes* the alleles — the opposite of mitosis, which keeps the number and makes identical cells.

Practice

Try these in order.

16.1 How many sets of chromosomes does a *diploid* cell have? [1]

16.2 What does *meiosis* make? [1]

16.3 How many cells does meiosis produce from one cell? [1]

16.4 Are gametes *haploid* or *diploid*? [1]

16.5 Name one way meiosis creates variety. [1]

16.6 Challenge. Two children of the same parents are not identical (unless they are identical twins). Explain how meiosis produces this variety. [2]
