




 Cambridge IGCSE 0580


# Vectors & Transformations Vocabulary

## 向量与变换 (Vectors) 词汇卡

Topic 7 | Core & Extended

**FREE** | **Cambridge 0580** | **Bilingual 双语**

 Bilingual Vocabulary Cards 双语词汇卡




 For Chinese-English Math Education  
适用于中英双语数学教学

 Vocab Tables    Printable Flashcards    Core & Extended

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## How to Use This Resource / 使用说明 **What's inside / 内容概览**

-  **Vocabulary Tables** (p. 3–5) — 30 bilingual terms with pinyin & definitions
-  **Flashcards** (p. 6–11) — 3 sets of printable cards, print front/back pages back-to-back
-  **Extended labels** — Look for (*Ext.*) to spot Extended-only content



## **Differentiation Tips / 分层教学建议**

- ★ **Core students** — Focus on terms without the (*Ext.*) marker
-  **Extended students** — Learn all terms including (*Ext.*) items
-  **Bilingual learners** — Use the Chinese and Pinyin columns for support
-  **Printing tip** — Print flashcard pages double-sided for front/back cards

### ♥ **Enjoying this resource?**

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Also available: Number, Algebra, Coordinate Geometry, Geometry, Mensuration, Trigonometry & Statistics Vocabulary Cards

## C7.1 / E7.1 Transformations

C7.1/E7.1 变换

### Transformation Basics | 变换基础

English 英文	Chinese 中文	Pinyin 拼音	Definition 定义
<b>Transformation</b>	变换	biàn huàn	A change in position, size, or orientation of a shape
<b>Image</b>	像	xiàng	The shape after a transformation has been applied
<b>Object</b>	原像	yuán xiàng	The original shape before transformation
<b>Reflection</b>	反射	fǎn shè	A transformation that flips a shape over a mirror line
<b>Mirror line</b>	对称轴	duì chēn zhóu	The line of reflection

### Rotation & Enlargement | 旋转与放大

English 英文	Chinese 中文	Pinyin 拼音	Definition 定义
<b>Rotation</b>	旋转	xuán zhuǎn	A transformation that turns a shape around a fixed point
<b>Centre of rotation</b>	旋转中心	xuán zhuǎn zhōng xīn	The fixed point around which rotation occurs
<b>Angle of rotation</b>	旋转角	xuán zhuǎn jiǎo	The angle through which a shape is rotated
<b>Enlargement</b>	放大	fàng dà	A transformation that changes the size of a shape
<b>Centre of enlargement</b>	放大中心	fàng dà zhōng xīn	The fixed point from which enlargement occurs
<b>Scale factor</b>	比例因子	bǐ lì yīn zǐ	The ratio of image size to object size; can be positive, fractional, or negative ( <i>Ext.</i> )

## C7.1 / E7.1–E7.2 Translation & Vectors

C7.1/E7.1–E7.2 平移与向量

### Translation & Combined Transformations | 平移与复合变换

English 英文	Chinese 中文	Pinyin 拼音	Definition 定义
<b>Translation</b>	平移	píng yí	A transformation that slides a shape without rotation or reflection
<b>Invariant</b>	不变量	bù biàn liàng	A property that remains unchanged after transformation ( <i>Ext.</i> )
<b>Combined transformation</b>	复合变换	fù hé biàn huàn	Two or more transformations applied in sequence ( <i>Ext.</i> )

### Vector Basics | 向量基础

English 英文	Chinese 中文	Pinyin 拼音	Definition 定义
<b>Vector</b>	向量	xiàng liàng	A quantity with both magnitude and direction ( <i>Ext.</i> )
<b>Column vector</b>	列向量	liè xiàng liàng	A vector written as $\begin{pmatrix} x \\ y \end{pmatrix}$ ( <i>Ext.</i> )
<b>Displacement</b>	位移	wèi yí	A vector representing change in position ( <i>Ext.</i> )
<b>Scalar</b>	标量	biāo liàng	A quantity with magnitude only, no direction ( <i>Ext.</i> )
<b>Scalar multiplication</b>	标量乘法	biāo liàng chéng fǎ	Multiplying a vector by a scalar ( <i>Ext.</i> )
<b>Vector addition</b>	向量加法	xiàng liàng jiā fǎ	Adding two vectors by adding corresponding components ( <i>Ext.</i> )
<b>Vector subtraction</b>	向量减法	xiàng liàng jiǎn fǎ	Subtracting one vector from another ( <i>Ext.</i> )

## E7.3–E7.4 Magnitude & Vector Geometry

E7.3–E7.4 模与向量几何

### ≡ Magnitude & Special Vectors | 模与特殊向量

English 英文	Chinese 中文	Pinyin 拼音	Definition 定义
<b>Magnitude</b>	模	mó	The length of a vector, calculated as $\sqrt{x^2 + y^2}$ (Ext.)
<b>Unit vector</b>	单位向量	dān wèi xiàng liàng	A vector with magnitude 1 (Ext.)
<b>Position vector</b>	位置向量	wèi zhì xiàng liàng	A vector from the origin to a point (Ext.)
<b>Directed line segment</b>	有向线段	yǒu xiàng xiàn duàn	A line segment with a specified direction (Ext.)
<b>Zero vector</b>	零向量	líng xiàng liàng	A vector with magnitude 0, written as $\begin{pmatrix} 0 \\ 0 \end{pmatrix}$ (Ext.)

### ≡ Vector Relationships | 向量关系

English 英文	Chinese 中文	Pinyin 拼音	Definition 定义
<b>Parallel vectors</b>	平行向量	píng xíng xiàng liàng	Vectors with the same or opposite direction (Ext.)
<b>Collinear</b>	共线	gòng xiàn	Points lying on the same straight line (Ext.)
<b>Coplanar</b>	共面	gòng miàn	Vectors lying in the same plane (Ext.)
<b>Resultant vector</b>	合向量	hé xiàng liàng	The vector sum of two or more vectors (Ext.)

## Flashcards — Front (Terms)

闪卡正面 — 术语

**Transformation**

变换

**Reflection**

反射

**Rotation**

旋转

**Enlargement**

放大

**Translation**

平移

**Scale Factor**

比例因子

Cut along dashed lines. Print this and next back-to-back. 沿虚线剪开。本页与下一页双面打印。

## Flashcards — Back (Definitions)

闪卡背面一定义

### Reflection

反射

A transformation that flips  
a shape over a mirror line  
在镜面线上翻转图形的变换

### Transformation

变换

A change in position, size,  
or orientation of a shape  
改变图形位置、大小或方向

### Enlargement

放大

A transformation that  
changes the size of a shape  
改变图形大小的变换

### Rotation

旋转

A transformation that turns a  
shape around a fixed point  
绕固定点旋转图形的变换

### Scale Factor

比例因子

The ratio of image size  
to object size (Ext.)  
像与原像的大小比率 (Ext.)

### Translation

平移

A transformation that slides a  
shape without rotation or reflection  
不旋转不反射地平移图形的变换

🖨️ Print pages 6–7 back-to-back, then cut along dashed lines. 第 6–7 页双面打印，沿虚线剪裁。

## Flashcards — Front (More Terms)

闪卡正面—更多术语

**Vector**  
向量

**Column Vector**  
列向量

**Scalar**  
标量

**Magnitude**  
模

**Position Vector**  
位置向量

**Displacement**  
位移

Cut along dashed lines. Print this and next back-to-back. 沿虚线剪开。本页与下一页双面打印。



## Flashcards — Back (Definitions)

闪卡背面一定义

### Column Vector

列向量

A vector written as  $\begin{pmatrix} x \\ y \end{pmatrix}$  (Ext.)  
写成列形式的向量 (Ext.)

### Vector

向量

A quantity with both magnitude and direction (Ext.)  
既有大小又有方向的量 (Ext.)

### Magnitude

模

The length of a vector,  $\sqrt{x^2 + y^2}$  (Ext.)  
向量的长度  $\sqrt{x^2 + y^2}$  (Ext.)

### Scalar

标量

A quantity with magnitude only, no direction (Ext.)  
只有大小没有方向的量 (Ext.)

### Displacement

位移

A vector representing change in position (Ext.)  
表示位置变化的向量 (Ext.)

### Position Vector

位置向量

A vector from the origin to a point (Ext.)  
从原点到某点的向量 (Ext.)

🖨️ Print pages 8–9 back-to-back, then cut along dashed lines. 第 8–9 页双面打印，沿虚线剪裁。

## Flashcards — Front (Even More Terms)

闪卡正面 — 更多术语

**Mirror Line**

对称轴

**Centre of Rotation**

旋转中心

**Vector Addition**

向量加法

**Parallel Vectors**

平行向量

**Collinear**

共线

**Resultant Vector**

合向量

Cut along dashed lines. Print this and next back-to-back. 沿虚线剪开。本页与下一页双面打印。

## Flashcards — Back (Definitions)

闪卡背面一定义

### Centre of Rotation

旋转中心

The fixed point around  
which rotation occurs  
旋转所围绕的固定点

### Mirror Line

对称轴

The line of reflection  
反射的对称线

### Parallel Vectors

平行向量

Vectors with the same or  
opposite direction (Ext.)  
方向相同或相反的向量 (Ext.)

### Vector Addition

向量加法

Adding two vectors by adding cor-  
responding components (Ext.)  
通过对应分量相加来相加向量 (Ext.)

### Resultant Vector

合向量

The vector sum of two  
or more vectors (Ext.)  
两个或多个向量的和 (Ext.)

### Collinear

共线

Points lying on the  
same straight line (Ext.)  
在同一直线上的点 (Ext.)

🖨️ Print pages 10–11 back-to-back, then cut along dashed lines. 第 10–11 页双面打印, 沿虚线剪裁。