

Learner workbook: Vectors and translations

Objective: Represent translations as column vectors and combine displacements.

Calculator condition: Non-calculator core; calculator optional only for checking where labelled.

L082 Vectors and translations

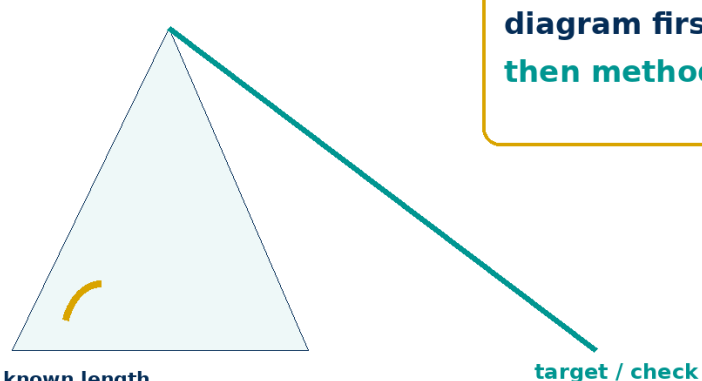


**diagram first
then method**

Objective: Represent translations as column vectors and combine displacements.

Connect & Check

- State the objective and timeline. Retrieve circle geometry pathway or a prerequisite. Diagnose a common error before modelling.
- Write one starting question you want answered today.

Choose your route

Route A: Visual Use a diagram, graph, table or annotation first.	Route B: Method Use a worked method, formula or calculation chain first.	Route C: Explain Start with words: what is known, what is changing, and why.
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Share

- Pairs compare methods or predict a result for vectors and translations. Ask for a reason, not only an answer.

Present

- Connect arrows and coordinates; distinguish a position from a displacement

Apply: supported to independent

Recall: Retrieve the key fact or method needed for vectors and translations.

Working: _____

Check/explanation: _____

Core practice: A triangle has vertices $(0,0)$, $(2,1)$, $(1,4)$. Translate by $(-3,2)$. State all new vertices.

Working: _____

Check/explanation: _____

Reasoning: A translation maps $A=(-2,5)$ to $A'=(4,-1)$. Show where $B=(3,3)$ maps.

Working: _____

Check/explanation: _____

Exam-style: Solve an exam-style problem involving vectors and translations. Show working, include a check and interpret your answer.

Working: _____

Check/explanation: _____

Recall & Review

- Revisit the objective. Learners solve a fresh item without prompts, explain a check, correct one error and record the next practice.

WWW: _____ EBI: _____

Recall & Review: feedback and extension integration

Lesson L082: Vectors and translations

Objective: Represent translations as column vectors and combine displacements.

Timing for a 60-minute lesson

0-7 Connect & Check; 7-14 Share; 14-25 Present/model; 25-44 Apply route choice/practice; 44-52 independent exam-style check; 52-60 Recall & Review, WWW/EBI and next step.

Recall & Review evidence

At the end of the lesson, solve a fresh question without prompts, explain one check, correct one error and record the next practice step.

What Went Well (WWW)

I selected the correct geometric fact, theorem, formula or transformation and used a clear diagram with appropriate labels and units.

Even Better If (EBI)

I will name the fact or theorem, show the substitution or construction step and check whether the size, direction and units of the result are reasonable.

Integrated stretch and deep challenge

Stretch: A triangle has vertices $(0,0)$, $(2,1)$, $(1,4)$. Translate by $(-3,2)$. State all new vertices.

Deep challenge: A translation maps $A=(-2,5)$ to $A'=(4,-1)$. Show where $B=(3,3)$ maps.

My next-step response
