

# STEM in IELTS Academic Writing Task 1

Most candidates find Writing Task 1 challenging, mainly because

- they often misinterpret the visual data and
- they have acquired these academic skills (i.e. analysing and expressing such data) in their mother tongue. For example, in many East Asian languages, fractions are read in reverse; the denominator comes first, and this L1 interference affect their accuracy in Task 1.

A practical solution to these challenges is to integrate a STEM lesson, fostering cross-curricular connections and enhancing intrinsic motivation. This activity targets Bands 5-6.5 and can be conducted within a single 40-minute session or extended over multiple lessons.

## Problem-based learning in IELTS Academic

Stage	Procedure
Understand the problem	<u>Pre-Teaching and Background Information</u> Introduce learners to nutrition facts labels and relevant vocabulary.
Prepare and define	<u>Groupwork and Resources</u> In groups, learners analyse healthy food options using provided resources, including authentic materials akin to IELTS Reading texts. They then create graphical representations of the nutrition data of their own choice.
Develop possible solutions	<u>Observe and Support</u> Learners use spreadsheet software or paper to create and write an overview for their charts. Encourage the use of pie charts for comparisons but allow freedom to choose any chart type. Monitor their progress, noting errors and providing language feedback.
Choose the viable solutions	<u>Follow-Up</u> Collect overviews and have learners share and discuss their charts. They should match overviews with charts and present supporting data. Conduct follow-up activities and use CCQs to assess understanding: <ul style="list-style-type: none"><li>- What is the most common nutrient in the pie chart?</li><li>- What fraction of the nutrients are sugars?</li></ul> Provide feedback on language use and expand their vocabulary as needed.

In this problem-based learning, learners first identify the problem and explore their prior knowledge. They then design and select potential solutions. For example, the teacher gives learners nutrition facts labels and instructs them to create graphical representations of the information, aiding in healthier food choices. The lesson stages and procedures<sup>1</sup>, typical in STEM education, are outlined in the table.

Teachers can use realia (packaged food) or use online label makers. This method also applies to other STEM subjects; for example, shopping receipts can help construct line graphs. Furthermore, numerous K12 educational resources (e.g. [this test from BBC Bitesize](#)<sup>2</sup>) can support this activity. It also aligns with curriculum standards, including KS3, and therefore, can be easily adapted.

## Materials

- Teacher's material ([Google Slides](#), [Google Sheets](#))

## References to the images and authentic materials

- Devlin, H. (2023, December 21). *Overfed and undernourished: what is malnutrition and nutrient deficiency?* The Guardian. Retrieved from <https://theguardian.com/uk-news/2023/dec/21/malnutrition-england-wales-hospital-diet>
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- Walmart. (2024). *Nongshim Neoguri Spicy Seafood Ramyun Ramen Noodle Soup Cup, 2.64oz X 6 Count* [Image]. Retrieved June 1, 2024, from <https://walmart.com/ip/Nongshim-Neoguri-Spicy-Seafood-Ramyun-Ramen-Noodle-Soup-Cup-2-64oz-X-6-Count/243725779>

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<sup>1</sup> Mathews-Aydinli, J. (2007). *Problem-Based Learning and Adult English Language Learners*. Center for Adult English Language Acquisition, Center for Applied Linguistics. Available at: ResearchGate [Accessed date: 2 Jun 2024].

<sup>2</sup> BBC Bitesize. (n.d.). Statistical diagrams Test questions - National 4 Application of Maths. Retrieved from <https://www.bbc.co.uk/bitesize/guides/z7xcwmn/test>