AUTHENTIC TASKS

TOP 5 TIPS FOR TEACHERS

An authentic mathematical task will support building and extending important knowledge, skills and understandings, and develop productive dispositions towards mathematics. Here are our top 5 tips for selecting these tasks.

1. PROMOTE FEEDBACK AND METACOGNITION

Tasks should promote self and peer reflection targeted at specific aspects of the work. This includes knowledge about how mathematical thinking has changed as a result of lesson as well as skills like problem-solving persistence, and collaboration.

2. CHALLENGE STUDENT THINKING

Authentic tasks can often be a well-constructed, unfamiliar problem that challenges student thinking. Students hypothesise, compare, justify, interpret and generalise to overcome obstacles and build understanding.

Many authentic tasks suggest enabling and extending prompts to help teachers adjust the task to appropriately challenge all students.

3. ENCOURAGE MULTIPLE STRATEGIES AND SOLUTIONS

Authentic tasks are generally open-ended. Look for a low floor (all can get started) and high ceiling (students go as far as capable). This pedagogical approach encourages students to attempt solutions based on known strategies and explore more ways to find a solution. Students develop more sophisticated strategies as they make connections.

Look for questions in a task like:

- What are some possible solutions?
- How are these strategies connected?
- Which method is most efficient?

4. STIMULATE INTEREST

Authentic tasks pique interest. When students are engaged and curious, they are more likely to persevere when challenged and respond positively to explicit teaching. Some different ways to stimulate interest include challenges, investigations, puzzles, games and stories. Tasks which stimulate curiosity may connect to an authentic context or student interests. They might utilise technology, offer student choice or provide an opportunity to engage in outdoor, kinaesthetic, multi-age, or transdisciplinary learning.

5. PROMOTE COLLABORATION

Authentic tasks make students challenge each other, the computer, the teacher and observe how they work mathematically.

They make decisions in groups, share reasoning, communicate findings, engage with different ideas, monitor and regulate each other's thinking.

MAV's website has quality examples of authentic tasks.

THE MATHEMATICAL ASSOCIATION OF VICTORIA

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