



## **Elementary Mathematics Professional Learning**

## **Non-permanent Surfaces**



A non-permanent surface is a tool that allows a student or a small group of students to solve a question or share ideas while having the option of changing the response as often as is necessary. These can include mini whiteboards, page protectors, table tops, windows, and tile flooring.



As a teacher, there are 2 advantages. You can gather whole-class feedback and you can check individual work. Using mini whiteboards helps students develop confidence. They are more willing to make a start on a mini whiteboard because corrections are easy to make. If they make a mistake, nobody knows. Students can easily change their mind throughout the process. Research shows that using vertical non-permanent surfaces rather than horizontal non-permanent or vertical/horizontal permanent surfaces increases times to notation, discussion, and participation. Source



Provide individual or pairs of students with access to small whiteboards or page protectors. Provide groups of 3-4 students with larger whiteboards or even windows. Place whiteboards in upright positions as often as possible. Provide students with a problem-solving question to work on or ask them to brainstorm. Allow opportunities for students to visit other whiteboards and share their work.

From the Education World Webpage: Whiteboards Stimulate Student Learning



From the Education World Webpage:

Daily Numbers: A Daily Math Skill Reinforcement Activity

Articles Books Research Great Maths Teaching Ideas Webpage: <u>Are mini-whiteboards the ultimate teaching and learning resource?</u>

Teach Hub Webpage: Teaching with a Classroom Whiteboard:

Part 1, Part 2, Part 3

Stuff I'm learning at school Webpage:

<u>Using mini-whiteboards to transform classroom practice</u> (for secondary students / still some relevant info)