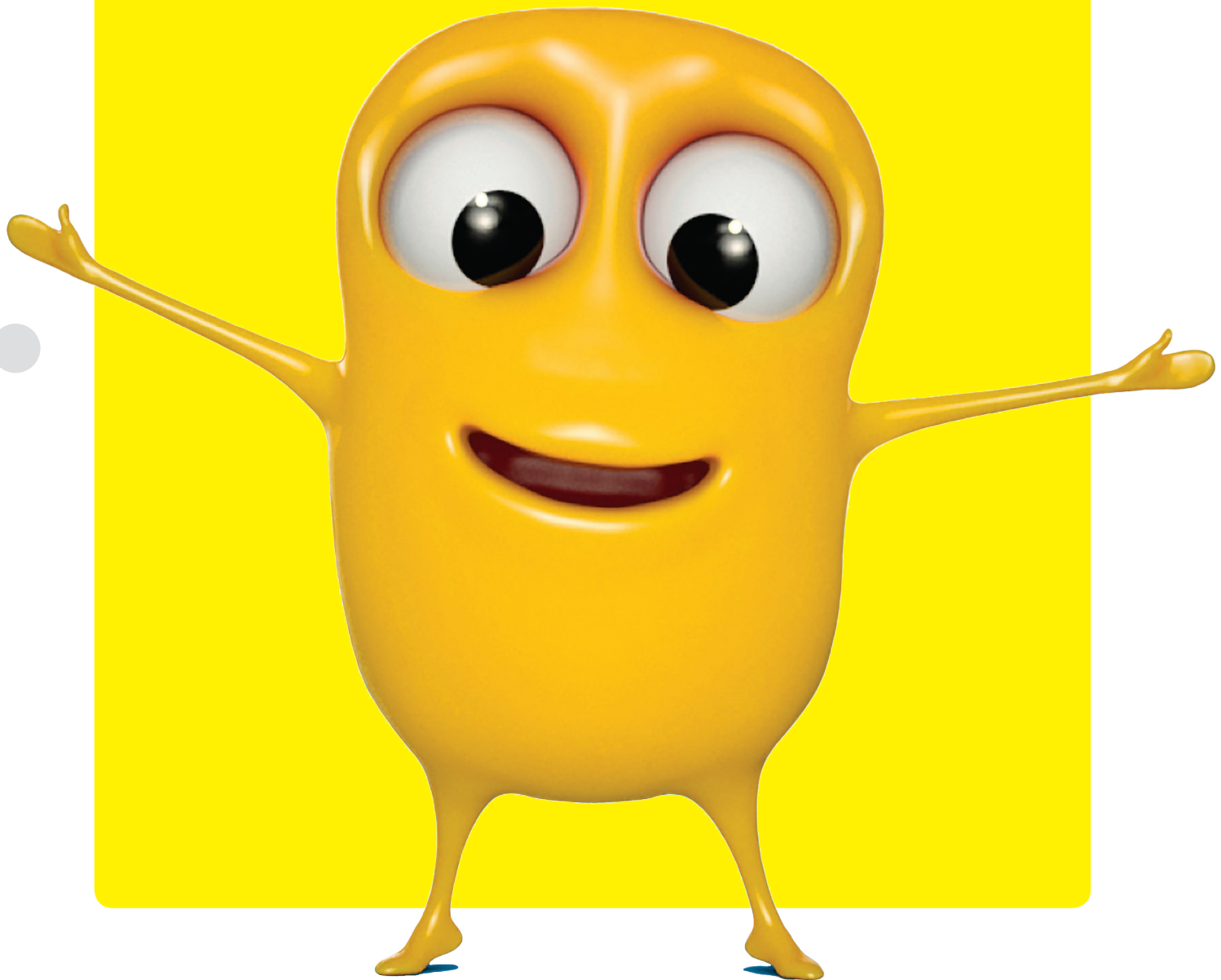


Tips for teaching mathematics to visually impaired students



Why adapt lessons for visually impaired (VI) students?

This 90-second video youtu.be/O7j4_aP8dWA demonstrates how much learning is visual and how much audio description is required to make content accessible. With a few adaptations, VI students can participate fully and learn independently.

General tips

- Always speak to students about what would best help them and how their needs might change over time. They are the experts of their own sight condition and can help you work out the best solution.
- Download **General tips for teaching visually impaired students** from www.macularsociety.org/teaching for introductory information including lighting; emotional support; formatting documents; assistive technology; techniques such as hand-over-hand guiding and further sources of information that have been used to create these resources.

Strategies for adapting maths lessons

Touch and feel

VI students rely on other means of communication such as sounds and touch.

Teachers and support staff should use mathematical apparatus to help convey concepts that are difficult for VI students. For example:

- Give practical apparatus to students to learn concepts of shape and number.
- Use hand-under-hand method when counting to direct students to the apparatus.
- Use raised location dots to tell students where a task begins and finishes.

Graphs and geometry

Consider the following adaptations.

- Where graphs are just for illustration, direct the VI student to text which can be more easily understood.
- Where a chart or graph is being used to represent an object, use the object itself if possible.
- Simplify graphs to focus on the core concept and delete unnecessary content.
- Eliminate glare, whether on screen or caused by direct sunlight.
- Use embossed graph paper or create 3D graphs to make them tactile.

Assistive technology

- Talking pens with programmable dots allow students to access worksheets.
- Interactive whiteboards have the compass, ruler and protractor tools.
- Audio devices (the student's own mobile phone or a desktop microphone attached to a laptop) can record parts of the lesson to revise or play back later.
- PowerPoints should be clear of clutter so that a screenreader can read it back.
- Talking calculators with big keys can help the VI pupil to perform calculations.

Useful apps

- MathsPaperLite (iOS) provides an aligned grid which is helpful to keep numbers in columns and not sliding away off the page
itunes.apple.com/gb/app/panther-math-paper-lite/id902059035?mt=8
- Splash City Maths (all platforms) enables working-out to be kept in the correct column
www.splash-city.com.
- GeoMaths (Windows 10) is an electronic means of doing geometry which may be more efficient than using traditional apparatus.

In this series:

- **General tips** for teaching visually impaired (VI) students
- Tips for teaching **art** to VI students
- Tips for teaching **design technology** to VI students
- Tips for teaching **geography** to VI students
- Tips for teaching **history** to VI students
- Tips for teaching **ICT** to VI students
- Tips for teaching **literacy** to VI students
- Tips for teaching **mathematics** to VI students
- Tips for teaching **music** to VI students
- Tips for teaching **science** to VI students
- Tips for teaching **sport** to VI students
- Tips for VI students on **school trips**

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