



Mathoo!

Game overview

This game is based around the rules for the game Taboo ® just with a mathematical flavour! The game Taboo ® is where you pick a card from the pack, there is a word you need to describe to your team or partner without using the ‘taboo’ words listed below on the card. For example, the word may be ‘baseball’ and you need to avoid using words such as, ball, home-run, bat, Dodgers and American in describing the word. There is a 3-minute timer set and your goal is to get as many word cards correct as possible.

I have adapted these rules to create a mathematical version of the game that helps students develop mathematical language around specific concepts while building their communicating skills (linked to the Working Mathematically outcome -1WM in the NSW syllabus).

Creating the cards

Provide students with a yellow palm card (like the ones they often use for speeches) or you could use small-sized pieces of paper (eighth of an A4) that you could later laminate, so you can reuse them for future games.

Provide students with a concept as the category, for example, *words to do with geometry*. Students think of a word, write the main word at the top of their card, then list three words the describer is NOT allowed to use to describe the word. Here is a sample of what a card may look like.





How to play

Collect all the cards then hand them out to students. Students play in pairs or threes, choosing a card from their stack and trying to describe the word on the card without using the 'taboo' words. Groups can use egg timers or stop watches to keep track of the time and stop the person once 1 minute is up. It is ideal if students create more than one card prior to playing, then pairs of students can play more rounds and the time limit can be increased to 3 minutes to solve and many cards as possible. Groups can then swap their cards with other groups to play again.

After the game, lead a discussion with students about the words they described and what were some effective ways to describe the words. The teacher could also make a word map or list for the chosen concept category.

Benefits

During this game students are learning how to describe mathematical concepts to other students, this addresses the communicating outcomes on our NSW mathematics K-6 syllabus.

EARLY STAGE 1	STAGE 1	STAGE 2	STAGE 3
<i>Communicating</i> MAe-1WM describes mathematical situations using everyday language, actions, materials and informal recordings.	<i>Communicating</i> MA1-1WM describes mathematical situations and methods using everyday and some mathematical language, actions, materials, diagrams and symbols.	<i>Communicating</i> MA2-1WM uses appropriate terminology to describe, and symbols to represent, mathematical ideas.	<i>Communicating</i> MA3-1WM describes and represents mathematical situations in a variety of ways using mathematical terminology and some conventions.

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When developing conceptual understanding, the ability to communicate and explain your thinking to others, to 'teach' the concept to others, helps in solidifying your own knowledge. Using talk during mathematics lessons supports learning as students are able to hear other students verbalise what they know and understand when describe concepts, providing all students with a variety of representations of a particular concept.



As students play the game, they also use a range of strategies and representations of the concept in their explanations. Strategies such as using; synonyms, antonyms, similes, missing word sentences, real-world examples, gestures, features and properties or stories.

For example, for the word 'cube' students may say things like:

- It's like a box
- It's another word for box
- Not a sphere
- It's an object with 6 faces
- It's a type of prism
- At home I have a Rubix's ® _____
- In the freezer at home there are ice _____
- When you say $3 \times 3 \times 3$ what are you doing to the number 3
- Students may make a box shapes using their hands

Using these types of literary techniques builds students' conceptual understanding as they start to connect language, image, symbolic and verbal representations of a concept together. Haylock and Cockburn (2008) provide a visual model of these connections in a diagrammatic representation of understanding, where understanding is the connection between two parts of information. This is also supported by Chapin, O'Connor and Anderson (2009) who state that:

"Representations are tools that help us record and work with our mathematical ideas, communicate our thoughts, and clarify our own understanding." (p. 90)

This game can also be used as a formative assessment tool either at the start or end of a sequence of learning on the selected concept. The teacher can move around the room while students are playing, listening and recording the types of descriptions students are giving to identify any misconceptions or notice students' use of metalanguage for the concept being explored.

References

Chapin, S. H., O'Connor, C., O'Connor, M. C., & Anderson, N. C. (2009). *Classroom discussions: Using math talk to help students learn, Grades K-6*. Math Solutions.

Haylock, D., & Cockburn, A. (2008). *Understanding mathematics for young children: A guide for foundation stage and lower primary teachers*. London: SAGE.