



Les manipulatives numériques / Digital Manipulatives

[pdf](#) [video](#)

I'd like you to:

leave with skills, not just awareness,

feel as if you learned something,

have some fun,

have something to think about and play with on the way home.

The Languages of the Math Classroom © '98, '08, '09 Agnes Azzolino

MOTHER TONGUE & OTHER TONGUE(S)

← Most Sophisticated and also the Most Basic →

MOSTLY MATH TONGUES

← Most Sophisticated, Most Basic →

VERBAL / Auditory

formal spoken
mathematics
informal spoken
math
spoken symbol
symbol speak
calculator/reze/
computer/reze
web speak

WRITTEN / Symbolic

written word
written symbol
semisymbolic
calculator symbol

PICTORIAL / Visual

DIGITAL
MANIPULATIVE
moving picture
static picture
numeral
graph
nonverbal
body language

CONCRETE / Kinesthetic

object
model
manipulative/token

French English Find an Inverse in 4 Language Families

Math Class Language Stages of Acquisition

REPRESSION

REPRÉSENTATION

OPERATION

CREATION

INTERPRETATION

It is most useful to:

- **Provide some free time before work begins.**
- **Introduce in the concrete.**
- **Debrief and summarize in the more abstract languages.**
- **Visualize. It's an abstraction activity that produces a concrete result.**

- **Create.**
- **Use as many language families as possible.
Use "differentiated instruction."**
- **Not force someone to speak a less sophisticated language.
You speak it. Don't force them to speak it.**

Game for Two Players

Web page and Masters Digital Manipulative

First person to land on 60 wins the game.

DON'T go to a square that is already occupied.

DON'T go off the board once you get on it.

In division, throw away the remainder.



www.mathnstuff.com/papers/metz1.htm

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