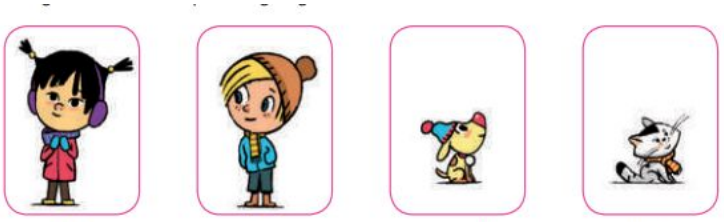
Mathematics at School: From 3 to 6

Main Used Resources:
CAPMATHS GS Professor Manual, Éditions Hatier, 2015
https://drive.google.com/open?id=0B25KMMoDYXdLTC1ubkJJWGtPYjQ
CAPMATHS ATSEM Activities, Éditions Hatier, 2015 (An ATSEM is a private helper for child in scholar difficulties)
https://drive.google.com/open?id=0B25KMMoDYXdLQW9jblJGZUV5UTA
FICHE CHRONO-MATOU, Éditions Hatier, 2015
https://drive.google.com/open?id=0B25KMMoDYXdLbnprRUJvN0Eyck0

The notion which is recurrent in this book written by education professionals is the **ritual**. Mathematics had to be a game, and the child had to be able to identify a character or a specific list of action or activities to mathematics, to make it really a game, to want him see that character/actions/activities again. Hatier is providing 2 examples:

- Mathé-Mathoux, a family of cat that will help the child to learn mathematics, with its more friendly member, **Chrono-Mathou:**

- 4 friendly characters Mo, Zac, Gribouille and Kikou



The pattern is the same for the 2 examples:
- Introduce the character
- Explain a little history about the character, and how it's linked to mathematics (for example, Chrono-Matou likes to count and to calculate really really quickly, that's why he's always bringing a chronometer with him)
- Explain what the character want the child to do (Chrono-Matou want child to complete the exercises as fast as he can, but beware, no mistakes!)
- Exercises can begin
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-> The whole presentation of the character can be an introduction, the first time application is launched. Then, small interactions with the character can happen at some levels, or even each level. Character must have its own voice, which has to be the only voice of the application

Way of learning must be firstly articulated around 3 main ways of learning:

- Memory: Especially important in counting. Child has to be used with what are the number (Examples: show 2 cat, then hide them, and then Chrono-Matou asks: “How many members of my family did you see??” Harder example, show 2 oranges and 3 strawberries, hide them, then Chrono-Matou asks: “I need to give food to my 3 childs! do you think I must use the strawberries or the oranges ??”
- Verbalization: This will be harder part to realize in our application, but a child has to be able to verbalize what he just read. (Example: How many ears does the elephant has?).
  -> To implement this, a way would be a question from the character, then a time for replying. the game then activate the oral recognition from Android, and tries to see if given answer is correct one. We must be aware of 2 things. First, without internet access this is impossible, also, this is not 100% accurate, and it would be dramatic to refuse a correct answer. If answer is recognized as correct, character could say “Yes you were right!! Elephants have 2 ears”, if it’s not “Elephant have 2 ears! I hope that’s what you say!”
- Gesture: A child has to be able to know which gestures are linked to which numbers, and to identify the form of the numbers and how to reproduce them. (Examples: “show me with your fingers the number of bananas, like I’m doing” *with image of character raising 2 fingers* or “here’s the number of bananas, can you draw it yourself?”
  -> We can use the multi-touch and ask the child to touch character’s fingers with its own fingers to verify answer. We can present a figure and ask the child to write on it with his finger, then presenting what his just drew. Computing similarity to verify answer.

Following same pattern, basic operations can be completed by selecting now known numbers.

Scholar programs (French) available in ped_resources