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[Who I am](#)

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Les maths comme je les aime ... et comme je les raconte ! 😊

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Math as I like it /5b



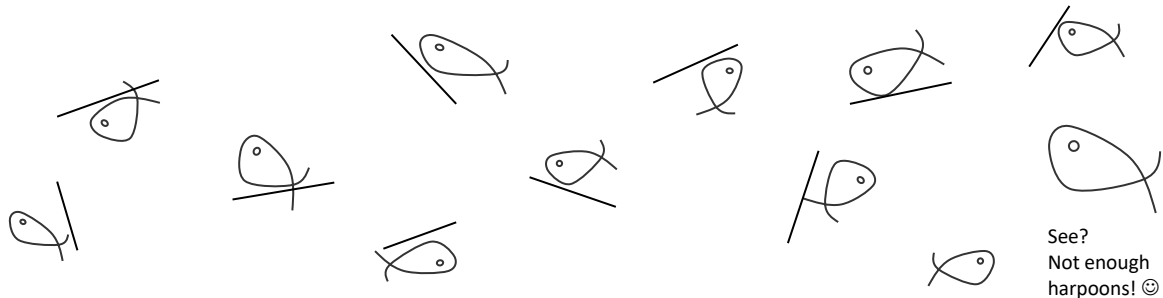
Hi-Ati and the creation of tens

No, of course, that's NOT how it happened! "Hi-Ati, or the creation of tens" is the second story I wrote based on Kipling's "Just So Stories"... though I still lack his talent (click at the top of this page to find the first one)!

These are just stories, but they have helped me introduce numbers for a very long time. Please be kind!

Now, listen carefully, one day Ji-Déhem, Hi-Ati's father, had a very successful fishing trip and caught a lot of fish. He had more fish than harpoons in his bag: if he took a harpoon from his bag and placed it next to a fish, he didn't have enough harpoons to put one next to each fish.

I'll draw what happened:



If you draw digits with the harpoons, you'll see that even 7 isn't enough. To represent all the harpoons taken out of the bag, you would have to draw a digit with one more line – but you remember that Hi-Ati was totally against that!

So Ji-Déhem had a great idea:

"Since all these harpoons fill up my bag when they're inside, I'll just draw a full bag to represent them. Wait, I know what you're going to say: it's too complicated.

Okay, then...

what if I just draw the top of the bag – but with lots of lines inside it?

So you know it's full? Like this:



and you'll know it's 7 harpoons and yet another harpoon.

Hi-Ati thought about it and said:

"Okay, but all those lines to draw inside are tiring. And then, I might not see them very well, and I might mistake the full bag for the empty one. Couldn't you draw a harpoon in front of the full bag, to show that there is "one" full bag? That way, I won't confuse it with the empty bag, which is on its own.

And then, if one day you have a lot more harpoons, you can put them in two full bags?

You could draw this:



(Wasn't Hi-Ati really a very wise little girl?)

She thought about it some more, making faces (it helped her think, and Ji-Déhem, who was a wise man, never stopped her), then she said:

"And if you have a lot of harpoons, you can even go on:



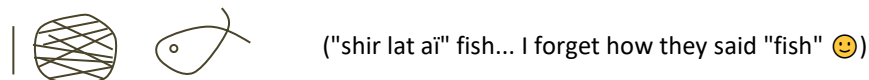
(No, of course, she didn't speak like you! She said "shir lat-ai" instead of "one full bag," because "full bag" was "lat-ai.")

Her dad laughed a lot at the idea of all the harpoons that this represented and warned Hi-Ati that he would never agree to carry all those harpoons on his back at once. But since he was a really good dad, he agreed to let Hi-Ati write the full bags with a number in front (yes, a "thra"... now you remember, right?).

So Hi-Ati, very happy, was finally able to draw how many fish her dad had caught.

She took all the harpoons from the bag and placed them next to the fish (except she didn't have enough harpoons for all of them... And that's the drawing I made for you at the top of the first page).

Then she put all the fish that had a harpoon next to them somewhere else (on the other side of the big rock where they had drawn the first numbers – remember?) and said, "There are already as many fish as there are harpoons in a full bag!" And she wrote:



Then she picked up the harpoons that were behind the big rock with the fish already drawn, put the harpoons back in the bag (do you remember that Tchor-Naïa – her mother – was very keen on everything being tidy?), and finally took out of the bag as many harpoons as she needed to place next to the remaining fish.

That made \angle harpoons.

So her dad had caught all of that – and she drew:



Ji-Déhem looked at the drawing and smiled, then he took a piece of chalk and crossed out the "and" saying: you don't need it!



And it was true. They could both see very well that



meant "as many fish as there are harpoons drawn in a full bag and the drawing \angle together"!

And they played at drawing full bags and digits. But in the end, Hi-Ati got tired of drawing all those lines in the full bag and asked Ji-Déhem to draw smaller full bags.

Like this:



(and it still meant "as many fish as there are harpoons in a full bag and two more")

And then later, as she was really very tired, Hi-Ati didn't even draw the full bag anymore, telling her dad that he should just imagine that she had drawn it between the two digits.

Like this:



Ji-Déhem saw that she was right (did I tell you he was a wise man? Yes, wasn't he?) And he was amazed to have such an intelligent little girl.

And there you have it. Now you know how Hi-Ati and Ji-Déhem created the tens:

- | ○ a bag full of harpoons and zero extra harpoons: now you say "a ten", or "ten"
- | | a bag full of harpoons and one extra harpoon: "a ten and one", or "eleven"
- | ∟ a bag full of harpoons and two extra harpoons: "a ten and two", or "twelve"
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- | ㄟ a bag full of harpoons and seven extra harpoons: "a ten and seven", or "seventeen"
- | ㄠ a bag full of harpoons and eight extra harpoons: "a ten and eight", or "eighteen"
- | ㄡ a bag full of harpoons and nine extra harpoons: "a ten and nine", or "nineteen"
- ∟ ○ two bags full of harpoons and zero extra harpoons: "two tens", or "twenty"
- ∟ | two bags full of harpoons and one extra harpoon: "two tens and one", or "twenty-one"
- ∟ ∟ two bags full of harpoons and two extra harpoons: "two tens and two", or "twenty-two"
-
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Much later, Ji-Déhem realized that there were as many harpoons in a bag as there were fingers on his two hands! When he told Hi-Ati, she burst out laughing and showed him the largest of his harpoons:

"Look, a thumb harpoon!"

She laughed so hard she fell on the floor!

Still, it was a really good point Ji-Déhem made, and I know people who still use it to calculate...

No, I won't name names. 😊

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