



## **Mental Arithmetic By Image of Abacus is The Best Mental Arithmetic in the World**

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Mental arithmetic by image of abacus originated from China is the best object of mental arithmetic in the world. Its theory and its operational techniques are given highly appraisal by experts and learners in home and abroad. Various teaching unit and children acquirement classroom strives for adopting abacus/mental arithmetic. Other kinds of mental arithmetic without much practicability have been eliminated. The reason is that mental arithmetic by image of abacus is easy to be taught and to be (earned). The most important is that a complete set of zhusuan arithmetic method has been formed in early ages of the history, thus enable zhusuan, a calculation tool to surpass greatly other calculation tools in history.

With the educational reformation and technical innovation in this century, "abacus/mental arithmetic" emerged in China and was disseminated quickly. As a result, it attracted the of various learning circles. In abroad, zhusuan is also prevailing range from Japan claiming that it leads the new trend of world electronic technology to the occident countries that are the hometowns of computer.

Any future arithmetic technology should aim at improving speed consistently. Zhusuan has always been not sparing efforts to improve its calculation method since its emergence and has made some achievements. Therefore, recently people in home and abroad all advocate the mental arithmetic by image of abacus which has become a general trend.

Mental arithmetic teaching requires firstly knowing about the characteristics of various mental arithmetic. It requires solid basic practice, especially the determination, confidence and perseverance. To master fluently the basic practice of mental arithmetic lays the foundation for learning mental arithmetic well.

Mental arithmetic is sort of mental thinking through listening or observing digits and to obtain the result without pens or calculation tools. At present, there remain four categories that use mental arithmetic:

1. Written/Mental arithmetic: to operate with the rules and modes of written arithmetic during calculation
2. Quick mental arithmetic: to take advantage of the special relation between digits to operate with the operational rules of the digits during calculation
3. Finger/mental arithmetic: to operate with the calculation rules and modes of finger arithmetic during calculation

4. Mental arithmetic by image of abacus to rely on the image of Zhusuan to operate through the science of thinking and the operational rules and modes of zhusuan during calculation.

Mental arithmetic with Arabic numerals as its information carrier obtains the result by mechanical memorization and is generally the addition and subtraction with one-digit number. Therefore, this kind of mental arithmetic only adapts to the simple, small or special numbers and as for the complicated calculation, only those with extremely high IQ can operate.

The third category is finger/mental arithmetic. The fingers can express at most five -digit number so they are limited in the quantities of calculation.

The fourth category is mental arithmetic by image of abacus, which is operated in brains according to the zhusuan modes, i.e., the arithmetic rules and the vary indications of zhusuan. To complete the arithmetic by imagination the process of driving beads during calculation. So mental arithmetic by image of abacus can do the addition with multi-digit number instead of with one-digit number and is also really quick in operation. This method can obtain the result of addition and subtraction of two – digit, three-digit, four-digit, four-digit and five-digit number and the multiplication of three-digit numbers or four-digit numbers once the person ends the numbers announcement. The answer can be quickly written when the person finish observing the whole numbers. And the result can be calculated within three or four seconds as for the division of eight-digit or nine-digit number by four-digit or five-digit number. (to write the answer continually).

Children period is a transitional period for them to develop their object thinking to concrete thinking in image and then to abstract thinking in logic, which is promoted favorably by mental arithmetic by image of abacus. Mental arithmetic by image of abacus not only has the scientific theoretical foundation but also “it is necessary to practice and to be taught in general, that is, the best anticipated results can be obtained”.

**Courtesy:**

*(The author is the president of mental arithmetic by image of abacus association of Taiwan, China)*