



# Mathematics and Young Children

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### ***What is mathematics?***

Mathematics is not arithmetic. Arithmetic is one part of mathematics. Arithmetic is about numbers; adding, subtracting, multiplying, and dividing whole numbers, fractions, decimals, and percentages. Mathematics is much more! Mathematics is about patterns and relationships. It is a way of thinking. Mathematics has order and internal consistency. It has unique terms and symbols. Mathematics is a kind of intelligence that all children have and need to develop to its fullest potential.

### ***Why the 3-to 6- year- olds in your care need mathematics***

#### **Mathematics is everywhere.**

Everyone needs to be able to interpret and use mathematics to make sense of our world today. Computers and other types of technology have made this a necessity! We all need to be comfortable with numbers, mathematical concepts, process, and information. We read and need to be able to understand and use tables, lists of numbers, graphs and statistics summarizing information everyday. Because of advances in technology we also need to be able to collect, organize, represent and analyze the mathematical information we come into contact with. In order to be up for the task, we need to be literate and fluent in mathematics.

#### **There is a regulatory basis for including mathematics in your program.**

Mathematics is part of a child's educational development and intellectual well-being. Mathematics is a pillar of formal schooling and it is a recognized part of a child's intellectual development and well being. This is supported in the work in multiple intelligences done by Howard Gardner. The self-esteem of children suffers when their logical mathematical intelligence isn't developed to its fullest potential and they become fluent in mathematics. Time and attention must be spent on appropriately including mathematics in licensed and registered child care programs.

There are two places where the New York State Office of Children and Family Services Child Day Care Regulations for Family and Group Family Day Care indicate that mathematics be included in your program. In Section 417\_.7 Program Requirements:

Each family day care home must provide a sufficient quantity and variety of materials and play equipment appropriate to the ages of the children and their developmental levels and interests, including children with developmental delays or disabilities that promote the children's cognitive, ***educational***, social, cultural, physical, emotional, language and recreational development. (*emphasis added*)

and in Section 41\_.13 Staff Qualifications:

The provider, assistant and alternate assistant must each meet the following qualifications, (d) be capable of providing, and agree to provide, safe and suitable care to children which is supportive of their



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physical, *intellectual*, emotional and social well-being. (*emphasis added*)

## **A child in your care may have a disability or an exceptional gift in mathematics.**

One of the responsibilities you have as a provider is to get to know each child so that you will be able to recognize when they are too ill to be in care, need immediate medical attention, or when you have reasonable cause to suspect child abuse or maltreatment. You also have the responsibility to know when he or she needs something more or something different than what you are all ready providing. Just as you could have a child in your care who has a developmental delay, ADHD, a physical disability or a learning disability such as dyslexia, there could be a child in your care who has dyscalculia, a learning disability related to numbers. Conversely you could also have a child with an exceptional gift in mathematics. You'll want to be able to recognize both conditions so that the child in either situation will get the appropriate intervention and support.

## ***The goal of mathematics education; supporting logical mathematical intelligence and developing a deep understanding.***

To be well informed as adults and to have access to desirable jobs, children in your care need to develop and sharpen their mathematical skills and learn and understand mathematical concepts and processes. The children in your care also need to be able to use their problem-solving, reasoning and communication abilities and their growing knowledge of mathematics to make sense of and solve real problems. Each child needs to develop a deep understanding of mathematics.

Mathematics education for the 3-to 6-year-olds in your care can't be left to chance! Math can't be an activity here or an experience there. It's not about counting, adding or subtracting, either. A child's logical mathematical intelligence needs to be stimulated and developed so that he or she will be fluent, proficient and comfortable in mathematics. To make sure that children get the mathematics they will need, you have to know what you are doing, why you are doing it, how you're going to do it and when you are going to do it. You will need to approach math more systematically

In order to be successful, it's essential that you become confident and comfortable in your knowledge and use of. How do you develop mathematical fluency? Where do you start?- by becoming familiar and comfortable with the principles and standards of mathematics education appropriate for 3-to 6- year-olds in group settings.



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## References

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