

## MATHEMATICS ACTIVITIES DIPLOMA ECDE SHORT NOTES

Preschool math concepts overlap and are interrelated with **preschool science concepts**. In the field of Mathematics, the skills of classifying, comparing and measuring are referred to as Math Concepts. In the field of science, these skills are referred to as Process Skills.

Let's look more closely at the 16 preschool math concepts your preschoolers learn throughout their preschool years. Note how each skill prepares the way for the next.

### **1. Observation: Using the senses**

Observing is the first step in gathering and organizing information. Children use their senses to observe. When given a collection of items (for example apples) children use their senses to observe attributes such as color, size, sweet/sour, texture, and soft/crunchy.

### **2. Problem Solving:**

Convergent problem solving is the ability to gather individual pieces of information together in one's mind and come to a single solution to a problem.

Divergent problem solving is the ability to gather many pieces of information and consider a variety of possible solutions to a problem.

### **3. Language:**

Use math language throughout the day as well as during activities. Introduce new words with activities such as "This is a pattern! Red, white, red, white."

Other examples of math language we use in preschool are heavy, light, tall, short, round, rectangular, add to, take away, etc.

### **4. One-To-One Correspondence**

This is the understanding that one group of items has the same number of items as another. It is any activity where the children match one thing to another thing.

For example: 1 button for each bear (see picture below) or 1 paper cup for 1 child, each hand has a mitten.

## 5. Number Sense

Number Sense is the concept of understanding number.

It helps children to understand the connections between quantities, counting, more, less, etc.

## 6. Shapes

Shapes are also known as early geometry! That's right...what is geometry but the study of shapes?

At this age, children will not work with formulas for diameters and circumferences, but rather with identifying basic shape names and comparing, sorting, classifying and drawing them.

## 7. Spatial Sense

Spatial sense is the ability to place items in the correct spaces or places using a logical design or a pattern. As an example, we see this when children are working on puzzles.

## 8. Sets and Classifying

Creating sets is the ability to make groups of items in a logical way. It requires the skill of classifying.

Classifying is a higher level skill than comparing. After observing and comparing, the children can take the information learned and begin sorting, classifying and grouping in logical ways.

They begin to separate items based on observations. They may separate apples by those with and without stems, by size, by color, etc.

### Help a Child Develop Early Math Skills

Before they start school, most children develop an understanding of addition and subtraction through everyday interactions. Learn what informal activities give children a head start when they start learning math in school.

Children are using early math skills throughout their daily routines and activities. This is good news as these skills are important for being ready for school.

But early math doesn't mean taking out the calculator during playtime. Even before they start school, most children develop an understanding of addition and subtraction through everyday interactions. For example, Thomas has two cars; Joseph wants one. After Thomas shares one, he sees that he has one car left (Bowman, Donovan, & Burns, 2001, p. 201). Other math skills are introduced through daily routines you share with your child—counting steps as you go up or down, for example. Informal activities like this one give children a jumpstart on the formal math instruction that starts in school.

What math knowledge will your child need later on in elementary school? Early mathematical concepts and skills that first-grade mathematics curriculum builds on include: (Bowman et al., 2001, p. 76).

- Understanding size, shape, and patterns
- Ability to count verbally (first forward, then backward)
- Recognizing numerals
- Identifying more and less of a quantity
- Understanding one-to-one correspondence (i.e., matching sets, or knowing which group has four and which has five)

### WAYS OF USED FOR TEACHING MATHEMATICS

Teaching math to your children is as easy as  $1+1=2$ . Go beyond pencil and paper to make math a learning experience that's fun for you and your kids. These quick and easy strategies help you teach your kids math and will turn them into mini mathematicians.

#### **Start With Counting**

Teaching math begins with your child knowing numbers. You can help them learn to count with the same strategies you'll be using to teach them math.

Children may respond better to memorizing numbers you repeat or may pick up numbers by seeing you count objects from one to ten. A method that may work for one of your children might not be right for another. Gauge each child individually.

Once your child begins [counting](#), you're ready to start with some basic math principles. They'll be adding and subtracting before you know it.

## Use Everyday Objects

You already have everything you need to begin teaching math to your child. Buttons, pennies, money, books, fruit, soup cans, trees, cars — you can count the objects you have available. Math is easy to teach when you look at all of the physical objects you can count, add, subtract, and multiply.

Everyday objects also help you teach your child that objects don't have to be identical to be important in math. Counting apples is a great math lesson, but counting apples, oranges, and watermelons together expands the thought process. The child is connecting counting with various objects, instead of running through a routine numbers game of 1, 2, 3.

## Play Math Games

There are plenty of games on the market that promise to aid you in teaching math. Hi Ho Cherry-O and adding dice teach simple [addition](#). The game Chutes and Ladders introduces children to the numbers 1 to 100.

Advanced math board games come and go, so check stores for today's hot games. Classics like Yahtzee, PayDay, Life, and Monopoly are always good resources for addition and subtraction.

Some of the best math games come from your own imagination. Play a math scavenger hunt. Use chalk to scribble numbers on the driveway and quiz your kids with math questions they have to answer by running to the correct number. Begin basic counting skills with blocks. Math can become an activity they enjoy rather than an educational drill.

## Bake Cookies

Soft cookies make excellent teaching tools. While you can count the cookies you bake for simple math, a fresh batch is also perfect for teaching [fractions](#).

With a plastic knife, kids can learn how to cut a cookie into eighths, fourths, and halves. The act of visually seeing a fourth created as well as them getting to cut that whole into fourths makes an impression in a child's mind.

Use those small cookie pieces to teach your child how to add and subtract fractions. For example,  $\frac{1}{4}$  of a cookie +  $\frac{1}{4}$  of a cookie =  $\frac{1}{2}$  of a cookie. Put the pieces together so they can see the cookie half.

An alternative to baking cookies is to use raw cookie dough or make your own play-dough. Of course, you can't eat your fractions when you're finished learning math, but you can reuse the cookie dough or molding clay.

### Invest in an Abacus

Even the smallest hands love sliding abacus beads back and forth along the wire. An abacus can be used to teach kids addition, subtraction, [multiplication](#), and division.

With an abacus, kids develop problem-solving skills. There's a logic behind using an abacus, so be sure you know what group of numbers each colored bead represents to accurately use it.

### Test Flash Cards

Flashcards can show you what  $2+2$  equals, but letting kids get hands-on experience with counting may work better. Evaluate your child's learning preferences by trying both flashcards and hands-on experience.

Some children learn better by seeing the answer on a card or counting pictures on a card. Others won't truly get the concept of math until you let them count physical objects. Mix up your math lessons to see which method seems to be working best for your child.

### Make Math a Daily Activity

Use math in your day-to-day routine. Help your child get the most out of your math [lessons](#) when you incorporate it into your daily life while setting goals they can achieve.

- At a red light, how many blue cars do you see?
- At the grocery store, how many boxes of crackers could we buy if we only have \$10?
- At the doctor's office, how many kids will be left in the waiting room when three are called to the back?
- If we only ate  $\frac{1}{4}$  of our lunch, how much would we have left?
- How much will diapers cost if they're 25 percent off?
- On the freeway, how much do the numbers on the license plate in front of us add up to?

- How many shirts are you putting into the washing machine?
- If you need to divide eight quarters among four people at the arcade, how many quarters would each person get?

Once you show your child how much fun math can be, they will gain enthusiasm about learning that you can apply to other subjects. Once children enjoy learning, there's no stopping them.