

1 the verbal math lesson

LEVEL 1
FOR CHILDREN AGES 4 TO 7

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Just a little every day—
That's the way,
Children learn to read and write
Bit by bit and mite by mite,
Never any one I say
Leaps to knowledge and its power;
Slowly, slowly, hour by hour,
That's the way!
Just a little every day.

ELLA WHEELER WILCOX

INTRODUCTION

This course is designed to make math fun for your young child. As in learning to read, where children need to develop a basic vocabulary for fluency, the verbal problems in this course also build a basic mathematical vocabulary that your child needs to progress further. Similar to our step-by-step reading program, the Reading Lesson, the Verbal Math Lesson strengthens the ability to do math quickly.



Written math makes simple arithmetic tedious for young children, particularly for those who don't like to write. Often, an insistence on worksheets that require more writing effort than math leads to a dislike for math in general. We want your child to like math, and learning math as a game helps this process.

This book is intended for children in grades K-1. The problems in these lessons must be read to the child, so all calculations are done mentally and without the use of pencil or paper.

How accurate and speedy should your child be? The answer is difficult to give. The human brain, particularly a child's brain, is not an accurate machine and memory is not perfect. Children differ in their ability to develop accurate and speedy recall. A general guideline of four seconds can be used for most problems as a gauge of skill.

Your child should be able to do the majority of these problems correctly the first time. If not, repeat the lesson the next day. Before you progress to a new lesson, make sure that your child can do most of the problems in the current lesson easily and quickly.

Most children can easily do 20 to 30 problems a day but short periods of practice are better in developing skill and maintaining interest. Repeat each lesson until the child gets nearly all the problems correct.

The best way to do these problems is to read the problem to the child and wait for the answer. If your child has difficulty understanding the

problem, you may reread the problem one or more times until it is well understood.

You can either read the explanations in the beginning of the lessons aloud or read them to yourself and then explain the concepts in your own words. Subordinate speed to accuracy, but do not neglect speed. Ability to answer these simple problems quickly means mastery. Excessive time on each problem tells you that the child is not ready to move on and that the lesson might need to be repeated.

Be creative! Compose problems yourself along the theme of the lesson using funny episodes from your daily life. Ask your child to make his or her own problems for you to solve.

WHO'S READY FOR THIS COURSE?

Most children are able to understand mathematical concepts long before they are ready to read. You can start this course at any age, if your child is able to do the following.

1. Is able to count up to 100. (Occasional errors are acceptable.)
2. Can identify written numbers. (Single and double-digits)
3. Understands the concepts of “same as”, “more than” and “less than” when referring to numbers and quantities.
4. Knows the difference between right and left and, hopefully, between right and wrong. Although not a primary object of Verbal Math Lesson, the course tries to present the problems with regard to basic societal values and parental authority.
5. Recognizes basic shapes.
(Circle, triangle, square, diamond and star)
6. Has a basic, conceptual understanding of measurements of length (inches and feet) and weight (ounces, pounds, tons).

We are pleased to bring you this new concept of teaching math and would be happy to hear of your experiences with it. Please contact us with suggestions and corrections.

Best wishes,

Michael Levin and Charan Langton

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WORKING WITH NOTHING

Let's learn the concept of 0.

Teacher: Clear a desk or a table. Place a pen and say: "There is one pen on the table." Ask: "Are there any pencils on the table?"

The answer should be: NO.

Say: "There is one pen and no pencils on the table. In math we say, there is one pen and zero pencils on the table. Zero means nothing."

EXERCISE I

Ask your child to give examples of zero. Here are some.

- If my feet are bare, that means I am wearing zero socks.
- If the road is empty, that means there are zero cars on the road.
- The garage was empty. Until my mom parked her car in it, there were zero cars in the garage.
- If no one puts money in a piggy bank, it has zero money.
- Before I planted a rose in an empty garden, there were zero roses growing there.
- After I took the last cookie from the jar, there were zero cookies left in the jar.

EXERCISE II

► **The rule:** If you add a zero to a number, the number does not change.

What is $1 + 0 =$? Child should answer: 1

$$2 + 0 = 2$$

$$1 + 0 = 1$$

$$0 + 2 = 2$$

$$3 + 0 = 3$$

$$0 + 1 = 1$$

$$0 + 5 = 5$$

What is 2 million gazillion plus zero? **Ans:** 2 million gazillion.

WORD PROBLEMS

- We had 2 pictures on the wall and put up no new pictures. How many pictures are on the wall? **Ans:** 2 pictures
Solution: 2 pictures + 0 pictures = 2 pictures.
So, the answer is 2 pictures.
- A pet store had 4 birds in a cage. No new birds were put in the cage. How many birds are in the cage now? **Ans:** 4 birds.
- There were 10 monkeys on a tree. No new monkeys came. How many monkeys are on the tree now? **Ans:** 10 monkeys.
- The table was empty before I put 4 plates on it. How many plates are on the table now? **Ans:** 4 plates.
Solution: mathematically speaking, 0 plates + 4 plates = 4 plates. Therefore, the answer is 4 plates.
- On an empty field. The construction crew built 5 houses on a field. How many houses are on the field now?
Ans: 5 houses ($0 + 5 = 5$).
- My backyard had no holes. Then 3 gophers dug 6 holes. How many holes are in my backyard now?
Ans: 6 holes. Don't confuse holes with 3 gophers. There could have been hundreds of hole-digging gophers, but we are not counting the gophers, only the holes they dug.
- The page was empty. Then 2 children drew 3 squares in 4 minutes. How many squares are on the page now?
Ans: 3 squares, because ($0 + 3 = 3$).

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COUNTING AND SIMPLE ADDING

EXERCISE I

- Count up to 5 forwards and then backwards.
- Count forwards and backwards from 4 to 10.
- Count backwards from 13.
- Count backwards from 16 to 10.
- Count backwards from 20 to 15.
- Count forwards from 20 to 30.
- Count from 30 to 45, forwards and backwards.
- Count forward from 1 to 9, skipping every other number.
- Now, count from 2 to 10 skipping every other number.
- What comes after 2? 5? 7? 8? 10?
- What comes after 11? 13? 14? 16? 19?
- What comes after 22? 25? 31? 33? 37?
- What comes before 46? 49? 52? 75? 91?
- What comes before 21? 31? 41? 51? 53?
- What comes before 20? 30? 40? 50? 60?
- What comes before and after 33? 22? 67?

EXERCISE II

I'll give you two numbers; tell me which one comes first when counting.

7 or 5	Ans: 5
8 or 7	Ans: 7
13 or 15	Ans: 13
9 or 11	Ans: 9
28 or 41	Ans: 28
17 or 13	Ans: 13
54 or 45	Ans: 45
23 or 32	Ans: 23
87 or 78	Ans: 78

Now, I'll give you 3 numbers, can you place them in order from the smallest to the largest?

6, 8, and 7	Ans: 6, 7, 8
9, 4, and 6	Ans: 4, 6, 9
6, 2, and 4	Ans: 2, 4, 6
8, 3, and 5	Ans: 3, 5, 8
4, 0, and 3	Ans: 0, 3, 4
8, 5, and 7	Ans: 5, 7, 8
10, 9, and 7	Ans: 7, 9, 10

EXERCISE III

Count forward from 1 to 20, skipping every 2 numbers: 1, (skip 2 and 3), 4, (skip 5 and 6), 7, (skip 8 and 9), etc.

Instead of skipping, child may whisper the number. You might want to make your own skipping numbers exercises. Instead of skipping you can also take turns counting.

For example: You say: 1, child says: 2, 3.

You say: 4, child says: 5, 6. Etc.

Now, count from 2 to 20 skipping every 2 numbers:
2, (skip 3 and 4), 5, (skip 6 and 7), 8, (skip 9 and 10), etc.
This may be hard!

WORD PROBLEMS

1. If I have two cookies and I get one more, how many cookies do I have? **Ans:** 3 cookies.
2. There is one sparrow and two black birds sitting in the tree. How many birds are sitting in the tree? **Ans:** 3 birds.
3. First I saw a white car go by, then a red car and then a white car. How many cars did I see? **Ans:** 3 cars.
4. I have two best friends. Then I made one more best friend. How many best friends do I have? **Ans:** 3 best friends.
5. I was counting and forgot what comes after 12. Can you tell me what number I forgot? **Ans:** 13.
6. In the red box there are 6 marbles and in the blue box there are 9 marbles. Which box has more marbles? **Ans:** Blue box.
7. One team has 6 kids and the other team has 5 kids. Which team has fewer kids? **Ans:** The team with 5 kids.
8. I am counting by skipping one number. I say 7, what number will I say next? **Ans:** 9.
9. How many numbers are between 1 and 4?
Ans: 2 numbers; they are 2 and 3.
10. How many numbers are between 1 and 6?
Ans: 4 numbers; they are 2, 3, 4 and 5.
11. How many numbers are between 3 and 6?
Ans: 2 numbers; they are 4 and 5.
12. How many numbers are between 4 and 6?
Ans: 1 number. It is 5.
13. How many numbers are between 5 and 10?
Ans: 4 numbers; they are 6, 7, 8, and 9.
14. How many numbers are between 1 and 11?
Ans: 9 numbers. They are 2, 3, 4, 5, 6, 7, 8, 9, and 10.
15. I have three coins in one hand and one coin in the other hand. How many coins am I hiding in both hands? **Ans:** 4 coins.

16. Ann has 2 sisters and 2 brothers. How many brothers and sisters does she have? **Ans:** 4 brothers and sisters.
17. How many children are there in Ann's family? **Ans:** 5 children.
18. Meena was counting and got stuck at 43. What's the next number after 43? **Ans:** 44.
19. Meena got to 53. What number comes before 53? **Ans:** 52.
20. Their team has one more kid than ours. We have 5 kids on our team. How many do they have? **Ans:** 6 kids.
21. An ice cream store sold 11 vanilla cones and 1 chocolate cone. How many ice cream cones did it sell? **Ans:** 12 ice cream cones.
22. Millie knows 33 jokes. Billy knows one less. How many jokes does Billy know? **Ans:** 32 jokes.
23. An archer shot 55 arrows. All but 1 hit the target. How many arrows hit the target? **Ans:** 54 arrows.
24. A soccer team scored 9 goals and then 1 more goal. How many goals did the team score? **Ans:** 10 goals.
25. Mr. Lopez took 1 apple from the basket that had 20 apples in it. How many apples are in the basket now? **Ans:** 19 apples.
26. There were 29 students in the class and then a new student came. How many students are in the class now?
Ans: 30 students.
27. Michelle lost 16 tennis balls and then lost 1 more. How many tennis balls did she lose? **Ans:** 17 balls.
28. A lady bought 9 T-shirts and then returned one T-shirt back to the store. How many shirts did she keep? **Ans:** 8 shirts.
29. An actress had 50 dresses and bought one more. How many dresses does she have now? **Ans:** 51 dresses.
30. Oliver had a 12 foot wire and cut off a one foot piece. How long is the wire now? **Ans:** 11 feet.

31. Leo has \$40 in his wallet and \$1 in his pocket. How much money does he have all together? **Ans:** \$41.
32. The animal shelter has 47 cats and got one more. How many cats do they have now? **Ans:** 48 cats.
33. I was sitting alone and then two of my friends came and sat next to me. How of many of us are sitting together? **Ans:** 3.
34. I have 6 coins and Sheila has 5. Who has fewer coins?
Ans: Sheila.
35. A park has 37 birch trees and 29 aspen trees. Are there more birches than aspens? **Ans:** Yes.

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ADDITION UP TO 6

EXERCISE I

- What number comes after 3? **Ans:** 4
- What number comes after 0? **Ans:** 1
- What number comes after 5? **Ans:** 6
- What number comes before 5? **Ans:** 4
- What number comes before 3? **Ans:** 2
- What number comes before 1? **Ans:** 0

► **The rule of reversible:** *When adding numbers, it doesn't matter which number goes first. The answer will be the same.*

Example:

$2 + 1$ equals 3, and also $1 + 2$ is 3, $3 + 1 = 4$, and also $1 + 3 = 4$

$1 + 4 = 5$, and also $4 + 1 = 5$, $2 + 3 = 5$, and also $3 + 2 = 5$

EXERCISE II

Please do these problems along columns.

$1 + 1 = 2$	$3 + 1 = 4$	$1 + 0 = 1$	$1 + 3 = 4$	$0 + 3 = 3$
$2 + 1 = 3$	$4 + 1 = 5$	$1 + 4 = 5$	$2 + 1 = 3$	$0 + 4 = 4$
$3 + 1 = 4$	$1 + 2 = 3$	$3 + 2 = 5$	$4 + 0 = 4$	$2 + 1 = 3$
$2 + 2 = 4$	$1 + 3 = 4$	$2 + 4 = 6$	$1 + 3 = 4$	$1 + 2 = 3$
$0 + 2 = 2$	$2 + 2 = 4$	$2 + 3 = 5$	$1 + 2 = 3$	$3 + 2 = 5$
$1 + 2 = 3$	$2 + 3 = 5$	$1 + 0 = 1$	$2 + 3 = 5$	$5 + 1 = 6$
$2 + 1 = 3$	$4 + 1 = 5$	$1 + 5 = 6$	$1 + 1 = 2$	$6 + 0 = 6$

EXERCISE III

Read the problem as: Which number plus 2 makes 3? This exercise uses the ideas of subtraction and may be a bit difficult for a young child.

$? + 1 = 3$ Ans: 2	$? + 2 = 5$ Ans: 3	$? + 1 = 2$ Ans: 1	$? + 1 = 5$ Ans: 4
$? + 2 = 4$ Ans: 2	$? + 4 = 6$ Ans: 2	$? + 1 = 4$ Ans: 3	$? + 5 = 5$ Ans: 0
$? + 3 = 5$ Ans: 2	$? + 2 = 5$ Ans: 3	$? + 1 = 2$ Ans: 1	$? + 4 = 5$ Ans: 1
$? + 0 = 3$ Ans: 3	$? + 3 = 3$ Ans: 0	$? + 4 = 5$ Ans: 1	$? + 2 = 4$ Ans: 2
$? + 3 = 6$ Ans: 3	$? + 4 = 4$ Ans: 0	$? + 4 = 6$ Ans: 2	$? + 3 = 5$ Ans: 2
$? + 2 = 3$ Ans: 1	$? + 0 = 5$ Ans: 5	$? + 3 = 5$ Ans: 2	$? + 2 = 5$ Ans: 3
$? + 0 = 4$ Ans: 4	$? + 5 = 6$ Ans: 1	$? + 3 = 4$ Ans: 1	$? + 1 = 5$ Ans: 4

WORD PROBLEMS

1. Jack had 2 candies. Jill gave him 1 more. How many does he have now? **Ans:** 3 candies.
2. Jill has 2 cookies and Jack gave her 2 more. How many does she have now? **Ans:** 4 cookies.
3. I have 1 white shirt and 3 red shirts. How many shirts do I have? **Ans:** 4 shirts.
4. There are 3 boys and 1 girl in the room. How many kids are in the room? **Ans:** 4 kids.
5. I had 2 pencils and found 2 more in my desk. How many pencils do I have now? **Ans:** 4 pencils.

6. I have 2 coins in one hand and 2 coins in the other hand. How many coins do I have? **Ans:** 4 coins.
7. Mary's mom told her to pick up 2 apples from the table and 3 more apples from the pantry. How many apples did Mary pick up? **Ans:** 5 apples.
8. Annie put 3 snails on the table. Her brother put 2 more. How many snails are on the table? **Ans:** 5 snails.
9. Alex is 2 years old. a) How old she will be in 1 year? **Ans:** 3 years. b) In 2 years? **Ans:** 4 years. c) In 3 years? **Ans:** 5 years. d) In 4 years? **Ans:** 6 years.
10. Nina has 3 brothers. Last month a baby sister was born. How many brothers and sisters does Nina have? **Ans:** 4 brothers and sisters.
11. Britta lives with her mom, dad, and grandmother. She has 2 sisters. How many people live in Britta's house? **Ans:** 6 people.
12. Sam lives with his mom, grandmother and grandfather. He has one brother. How many people live in Sam's house?
Ans: 5 people.
13. Jill ate 1 plum, 1 apple and 3 cookies. How many different pieces did she eat? **Ans:** 5 pieces.
14. Camilla has 2 red dresses, 2 yellow dresses and 1 green dress. How many dresses does she have? **Ans:** 5 dresses.
15. I had 5 beetles and found one more. How many do I have now?
Ans: 6 beetles.
16. I put 4 grapes on a plate. Then I added 2 more grapes. How many grapes are on the plate? **Ans:** 6 grapes.
17. I had 3 friends and then 2 more kids became my friends. How many friends do I have now? **Ans:** 5 friends.
18. A car has 2 wheels in front and 2 in the back. How many wheels does the car have? **Ans:** 4 wheels.
19. Our black dog had 3 puppies. Our gray dog had 2 puppies. How many puppies do we have? **Ans:** 5 puppies.

20. How many fingers do you have on your right hand?
Ans: 5 or 4. Both answers can be considered correct.
21. Yesterday, Mike planted 1 tree and today he planted 3 more. How many trees did he plant? **Ans:** 4 trees.
22. Our car has 4 tires. One spare tire is in the trunk. How many tires does the car have if I count the one in the trunk?
Ans: 5 tires.
23. Omar and Tricia fed 3 squirrels and also 3 rabbits. How many animals did they feed? **Ans:** 6 animals.
24. Natasha sent 2 postcards to her grandparents, 1 card to her uncle and 1 to her sister. How many cards did she send?
Ans: 4 cards.
25. A guard helped 3 children across the street and then 3 more. How many children did she help to the other side of the street?
Ans: 6 children.
26. Our 3 rabbits ate 4 carrots. My neighbor's 2 rabbits ate 2 carrots. How many carrots did all the rabbits eat?
Ans: 6 carrots. Remember, we are counting the carrots, not the rabbits, no matter how many of them are there.
27. There were 2 parrots in the cage; 2 more parrots were put into it. How many parrots are in the cage now? **Ans:** 4 parrots.
28. A singer recorded 2 songs the day before yesterday, 2 songs yesterday, and 2 today. How many songs did he record altogether? **Ans:** 6 songs.
29. The kitten has 3 whiskers on the right and 3 on the left. How many whiskers does the kitten have? **Ans:** 6 whiskers.
30. Asha Patel is 5 years old. She has 2 brothers and 3 sisters. How many children are in her family? **Ans:** 6 children. **Solution:** There is one Asha plus her 2 brothers and 3 sisters = 6 children.
31. I have 5 kittens and Kerry has none. How many kittens do we have together? **Ans:** 5 kittens.
32. A store has 2 aisles in the front and 3 in the back. How many aisles does the store have? **Ans:** 5 aisles.

33. There are 2 houses on the right bank of the river and 3 houses on the left. How many houses are on the river? **Ans:** 5 houses.
34. Hugo has 3 toy cars. How many more does he need to make 4? **Ans:** 1 car.
35. Nadia baked 2 pies. How many does she have to bake to make 4? **Ans:** 2 pies.
36. Henry has 4 yellow pencils and 1 red pencil. How many pencils does he have? **Ans:** 5 pencils.
37. Yoda was 3 feet tall and grew 2 more feet. How many feet is he now? **Ans:** 5 feet.
38. On the bus, there is 1 kid with a hat and 4 kids without hats. How many kids are on the bus? **Ans:** 5 kids.
39. My kitten caught 1 lizard, 2 snails and 2 flies. How many creatures did she catch? **Ans:** 5 creatures.
40. Being thirsty, Fiona drank 3 glasses of water, 2 glasses of lemonade, and 1 glass of juice. How many glasses did she drink? **Ans:** 6 glasses.
41. Old MacDonald had 2 cows and 4 chickens on his farm. How many animals did he have? **Ans:** 6 animals.