

Math Learning Tips

1. **Make Learning Fun!** Use incentives (verbal praise, stickers, diplomas, prizes, outings, rewards) and positive reinforcement. This enhances self-esteem and increases the child's self-confidence.
2. **Turn off the television and video games.** Children will spend more time using their imagination, reading and playing or practicing an instrument.
3. **Encourage your child to participate in workshops and classes** with activities to reinforce learning. Common providers for such workshop/classes are school districts, recreation and park districts, and retail stores.
4. **Use lively and motivational CDs or cassettes** (like Mondo Math or Fab Phonics) in the car or home to help auditory learning.
5. **Flashcards, charts, and posters** will aid visual learning.
6. **Present simple word problems** (written or oral), to enhance critical thinking skills.
7. **Encourage your child to participate in activities** such as shopping, meal preparation, arts/crafts, and building. This will help your child see real-life applications of estimation, rounding off, measuring, calculation, comparison, and following directions.
8. **Play games** like Math Bingo to keep motivation high.
9. **Set small goals** to ensure success and to keep motivation high.
10. **Energize your child** by using movement, dance, music and rhythm instruments. This may help kinesthetic learning. Examples: "Mondo (Simon) Says", freeze dancing.
11. **Workbooks, worksheets, puzzles, and word games** help your child gain proficiency in written work. **Timed tests** will help your child become more comfortable in testing situations.

Just the Facts: Five Games for Teaching Math Facts

Practice! Practice! Practice! That's how most students learn their addition facts or times tables. Rote drill is a popular and proven tool for learning math facts. But it's OK to lighten up and add some fun to math-facts learning. **Included: Five games to engage students as they learn math facts.**

Just as understanding letter sounds is fundamental to the ability to read, so is knowing math facts the foundation to future math learning. That's why teachers in the primary and elementary grades spend so much time practicing and memorizing and drilling and timing students in basic addition, subtraction, multiplication, and division facts. Accuracy and speed are the goals. Work sheets and timed tests and games -- yes, *games!* -- are often the tools.

Games -- relay races, card games, and computer games -- actively engage students as they reduce stress and make learning fun.

FIVE GAMES TO ENGAGE STUDENTS AS THEY LEARN MATH FACTS

Math Facts Race

Subjects

- Mathematics
--Arithmetic

Brief Description

A fun math race reinforces math facts in a very visual way.

Objectives

Students will

- reinforce math-facts knowledge and understanding.
- contribute to a team effort.
- carefully observe the actions of all team members.

Keywords

math facts, race, game, addition, subtraction, multiplication, addition facts, subtraction facts, multiplication facts, times tables, multiplication tables

Materials Needed

- chart paper
- markers or crayons

Lesson Plan

Before the Lesson

Create on the board or on chart paper a grid numbered across 1 to 9 and down 1 to 9. The grid's squares should be large enough for students to write a readable number in.

The Race

Arrange the class into two or more teams and provide each team with a grid sheet. Decide whether you want students to practice addition, subtraction, or multiplication facts in this game of speed. When the chart is set, say "Go!" One person on each team races to the board and fills in any square on the math facts grid. For example, if you are reinforcing addition facts, the student writes the number 6 in the square at which the 4 column and the 2 row meet ($4 + 2 = 6$).

Emphasize that it is important for all members of a team to watch what their teammates write. If any student on either team sees a mistake made by a teammate during the game, he or she can use his/her turn to correct that error.

If you make this a "quiet game," it will hold down the "oooo's" that are sure to signal an error, and also further emphasize the importance of team members paying close attention to one another.

The first team to fill in all the squares on their grid is the winning team *if* all the answers on their chart are correct.

Extend the Lesson

Use the completed charts to reinforce the concepts being taught. For example, if you use this game to reinforce multiplication facts, you might emphasize how the charts show the pattern made by the 5 tables or 7 tables.

Assessment

The first team to fill in all the squares on their grid wins -- *if* every answer on their chart is correct.

Math Fact War

Subjects

- Mathematics
--Arithmetic

Brief Description

The traditional card game of War is used to practice math facts.

Objectives

Students will

- follow the rules of the game.
- play fairly.
- compute math-facts accurately and quickly.

Keywords

math facts, game, addition facts, multiplication facts, times tables, subtraction facts, War, cards, card game, addition, subtraction, multiplication, multiplication tables

Materials Needed

- a deck of cards for each pair of students

Lesson Plan

About the Game

Arrange students into pairs to play this game. (After students master the game, they might play in teams of three or four.) Provide each pair of students with a deck of cards. The game is played in much the way the traditional card game War is played. The biggest difference is that players add (or subtract or multiply) the cards they reveal.

To arrange students into pairs, you might try this random method.

- Count out index cards so you have one for each student.
- Write on one card a simple math problem (e.g., 5×7) and write the answer to that problem (35) on a second card. Continue writing problems and solutions until you have written something on all the cards. *Note: Be sure all the solution cards have a different number on them; in that way, only one problem card will match each solution card.*
- Pass out the cards to students. Put a card *face down* on each students desk. (If you have an odd number of students, you hold one of the cards.)
- When you say "Go," each student flips over his or her card, reads it, and tries to locate the classmate with the matching card. When they find each other, the partners can begin playing the game below. If you have an odd number of students, the student who was holding the card that matched yours might play War with you *or* you might ask one of the pairs if they will allow a third person to be part of their game.

Before Playing

Choose the operation -- addition, subtraction, or multiplication -- you want students to practice. Each number card is worth its face value (e.g., the 7 of clubs has a value of 7). The Ace has a value of 1. Decide if you want students to leave in or take out the face cards. If you leave them in the game, decide what values those cards might have. For example:

- all face cards might have a value of 0.
- all face cards might have a value of 10.
- all face cards might have a value of 12.
- a joker might have a value of 0, a jack might have a value of 10, a queen might have a value of 11, and a king might have a value of 12.

Rules for Play

- Shuffle the deck of cards and place it face down.
- Each student draws a card from the top of the deck and reveals the card. Cards can be revealed one at a time or at the same time.
- When both cards are revealed, students must perform the assigned operation on the cards. For example, if one student flips over a 5 of hearts and the other flips over a 9 of spades, then the students add in their heads the value of those two cards. $5 + 9 = 14$. The first student to call out "14" wins those two cards.
- Play continues in this manner until the end of a predetermined time or until one student has all the cards. If time runs out, the student with the most cards wins.

Assessment

Students will have enjoyed the game and gotten some good practice from playing it. Many will ask if they can use the card decks to play the game with a partner in their free time.

Saved By the Bell

Subjects

- Mathematics
--Arithmetic

Brief Description

This fast-paced team game is a fun way to practice math facts.

Objectives

Students will

- play fairly as a member of a team.
- practice math facts.

Keywords

bell, math facts, game, addition facts, multiplication facts, times tables, subtraction facts, addition, subtraction, multiplication, multiplication tables

Materials Needed

- a bell for each team (the customer service bells that ring when you press the button on top are ideal); or substitute a musical instrument or another noisemaker for the bell
- flash cards

Lesson Plan

Arrange students into two or more teams. Two teams might be the most manageable arrangement; but the more teams you have for this game, the more practice students get. You must have a bell or noisemaker for each team. (If you want to make this a really special event, give each student a party blower to use!)

You might appoint a scorekeeper to record points as they are awarded. You also might appoint a flash-card handler, especially if students have played before and you have modeled the role of the flash-card handler.

Have each team line up facing you. At the head of each line, position a desk with a bell on top of it.

To start the game, have the one member of each team step to the desk. Students' hands should be ready to ring the bell. Show them the next math-fact flash card in the stack. As soon as a student knows the answer, he or she rings the bell. The first student to ring the bell gets to call out the answer. If the student who rings the bell calls out the correct solution without delay, he or she earns a point for his or her team. If the bell-ringer delays a response or calls out the wrong answer, the opposing team earns the point. After that round, the first two students run to the back of their respective team's line and the next two players step forward and prepare to answer a question.

The game moves quickly. The more quickly it moves, the more chances for math-fact practice each student gets. At the end of the game, the team with the most points wins.

Assessment

Did students follow the rules? Did they play fairly and compete in a sportsmanlike manner? Did the losers congratulate the winners on their victory? Did the winners accept their congratulations humbly?

Multiplication BINGO

Subjects

- Mathematics
--Arithmetic

Brief Description

Adapt the BINGO game to reinforce multiplication table skills.

Objectives

Students will

- play a game of BINGO that requires them to accurately compute math facts.
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Keywords

multiplication, multiplication tables, times tables, BINGO, game

Materials Needed

- [Multiplication BINGO card](http://www.education-world.com/a_lesson/TM/mathfactslpbingo.pdf) http://www.education-world.com/a_lesson/TM/mathfactslpbingo.pdf
- a set of flash cards for the times tables you will reinforce using the game

Lesson Plan

Provide each student with a [Multiplication BINGO card](#). Provide students with the answers to the multiplication fact cards you will show them and let them arrange those numbers randomly on their BINGO cards.

Alternate Idea: Involve Some Critical Thinking

If your students have a fair grasp of the multiplication tables, tell them which times tables the game will be based on and let them write on their cards the numbers that might be called out in the game. For example, if you tell them that the Multiplication BINGO game will be based on the 4, 5, and 6 tables, then they will have to figure out which numbers they should not write on their cards -- numbers such as 2, 3, 7, 9, 11, 13, 14, 17, 19... since those are not solutions to any of the math facts that comprise the 4, 5, or 6 tables.

As you can see, the game gets more interesting as students learn more math facts. Eventually, you might plan a Multiplication BINGO game in which the entire range of math fact families -- from the 2 tables to the 12 tables -- is included.

Prepare a set of cards containing the math facts you've based this game on. Write one math fact problem on each card. Shuffle the cards. Draw and read or show the cards to students, one card at a time. As you show a card, students must do the math and put an X through the number that represents the answer if it appears on their Multiplication BINGO card.

Who will be first to call out BINGO? Verify that student's victory by checking the math facts called out against his or her card.

After a player calls out BINGO, you might keep the game going until you learn which player will be the first to fill up his or her *entire* Multiplication BINGO card.

Assessment

Students create accurate cards and correctly mark their cards.

Online Math Facts Games

Subjects

- Educational Technology
- Mathematics
 - Arithmetic

Brief Description

More than a dozen great online games for friendly classroom competition and take-home practice.

Objectives

Students will

- use online games to reinforce math-facts knowledge.
- be engaged in the way they might be engaged by arcade games.
- try to be one of the class's top-scorers each week.

Keywords

math facts, games, online games, online math games, addition facts, subtraction facts, multiplication facts, times tables

Materials Needed

- Internet access (a large variety of sites listed below)

Lesson Plan

Online math facts games are one more way to engage students in learning addition facts or times tables. The games below award points, track the number of correct responses, or time students on their math facts efforts -- so you easily can set up these games as an "arcade" competition in the classroom. You might reward daily or weekly high scores by posting the high-scoring students' names on a bulletin board.

Also listed below are a handful of "just for fun" games that do not measure student performance *and* a few "just the basics" resources that might help students understand the meaning behind the math.

Using Online Games in the Classroom

What kind of computer access do your students have? Do you have a handful of computers in your classroom? Just one computer? That will dictate how often students might get online to use these games to practice addition facts or times tables.

- If you have a single computer, each student might get online to do an online challenge once each week. Or perhaps the math facts online games below are simply used as a reward activity for work completed.

- If you have a handful of computers, you might set up charts to record the current student-set records on any of the games below. Students can focus on a different game each day; or you can introduce a game on Monday and give each student 10 minutes each day to play. By the end of the week, students will have mastered the game and you can reward the record setters. You might set up a bulletin board and post the high-scoring students' names, pictures, and scores. Start a new record sheet each week so students get a fresh opportunity to have their names posted.
- If you have no classroom computer, perhaps you can book some time in a computer lab. Introduce a single game and provide time for students to master it and record their high scores.

The Games

Take a look at the list of online math-facts games below. Give each one a try. You'll see how much fun these games can be and how they will motivate students to practice and learn their math facts. These also are great resources to include in your classroom newsletter. Parents will love to encourage their children to use their home computer to do real math practice, and students can practice at home each night with the goal of being one of the week's high scorers in the classroom.

[Math Magician Games](http://www.oswego.org/ocsd-web/games/Mathmagician/cathymath.html) <http://www.oswego.org/ocsd-web/games/Mathmagician/cathymath.html>

Choose +, -, X, or /. Can students complete 20 math fact problems with 100 percent accuracy in less than 60 seconds? If they can, they might print out an award certificate or ask a classmate to verify the total and record it on a chart.

[MathMastery's CyberChallenge](http://www.mathmastery.com/cyberchallenge/index.cfm) <http://www.mathmastery.com/cyberchallenge/index.cfm>

Choose +, -, X or /. Students have 1 minute to get as many correct answers as they can. Have a classmate verify the total and record it on a chart.

[ArithmATTACK](http://www.dep.anl.gov/aattack.htm) <http://www.dep.anl.gov/aattack.htm>

Choose +, -, X, or /. Set the greatest number to be used in a problem. (For example, set 12 as the high number and no addition or multiplication fact will include a number greater than 12. Of course, the answers might be greater.) At the end of one minute, the total number of correct responses is recorded on the screen. Have a classmate verify the total and record it on a chart.

[Math Baseball](http://www.funbrain.com/math/index.html) <http://www.funbrain.com/math/index.html>

Choose +, -, X, or /. Choose the level (easy, medium, hard, or super brain). See how many runs you can score before getting three outs. Have a classmate verify the run total and write it on a chart. (This game can be played solo or in pairs.)

[A+ Math's MATHO](http://www.aplusmath.com/Games/games.html) <http://www.aplusmath.com/Games/games.html>

Choose +, X, or /. As the math facts pop up, click the answer on the MATHO card. How many seconds does it take to get MATHO? Have a classmate verify the time and record it on a chart.

[AAA Math](http://www.aaamath.com/B/) <http://www.aaamath.com/B/>

Click your grade level. Then click Addition, Subtraction, Multiplication, or Division. For each operation, you will find several games, including *How many correct answers can you get in 60 seconds?* and *How fast can you get 20 more correct answers than wrong answers?* Have a classmate verify the score and record it on a chart.

[Matching Multiplication Game](http://kidshub.org/kids/kids.cfm) <http://kidshub.org/kids/kids.cfm>

Multiplication only. Click the multiplication fact on the left side of the page and its matching product on the right side. How long does it take you to match all eight pairs? Have a classmate verify the time and record it on a chart.

Just for Fun!

These online math facts games are just for fun. Most do not record a score, but they still offer great practice and lots of math fun.

[A+ Math's Hidden Picture Games](http://www.aplusmath.com/Games/games.html) <http://www.aplusmath.com/Games/games.html>

How many problems do students solve before they can identify the hidden picture?

[Quia Concentration](http://www.quia.com/jg/387225.html) <http://www.quia.com/jg/387225.html>

Match all

the addition or subtraction facts with their answers. (This game does provide a final score, but it is really more a test of memory than a test of math-fact knowledge.)

[Quia Matching](http://www.quia.com/jg/387225.html) <http://www.quia.com/jg/387225.html>

Easy level. Match each addition or subtraction fact card to its solution.

[A+ Math's Concentration Game](http://www.aplusmath.com/Games/games.html) <http://www.aplusmath.com/Games/games.html>

Match the problem on the left card with the correct answer on the right card. (This game does provide a final score, but it is really more a test of memory than it is a test of math-fact knowledge.)

[Mr. Taylor's Multiplication Facts Drills](http://www.geocities.com/multiplicationfacts/index.html) <http://www.geocities.com/multiplicationfacts/index.html>

You can't get wrong answers here. Students click until they get the right answer.

[Math Mayhem](http://www.learningplanet.com/act/mayhem/index.asp) <http://www.learningplanet.com/act/mayhem/index.asp>

Choose +, -, X, or /. Students compete against other students who are online at the same time.

[Coloring Book Math](http://www.surfnetkids.com/games/colorsums.htm) <http://www.surfnetkids.com/games/colorsums.htm>

Solve the math problems to color the pictures. Requires addition, subtraction, multiplication, and division skill.

Just the Facts -- Math-Facts Basics

- [Math Games](http://www.dositey.com/mathk2.htm) <http://www.dositey.com/mathk2.htm>
This is a great visual tool for teaching the meaning of simple addition, subtraction, and multiplication.
- [MathCats Explore Multiplication](http://www.dositey.com/mathk2.htm) <http://www.dositey.com/mathk2.htm>
Teach the meaning of multiplication with this terrific tool.
- [Multiplication Quick Flash](http://www.multiplication.com/interactive/quickflash/flash/index.html) <http://www.multiplication.com/interactive/quickflash/flash/index.html>
Students develop speed with individual times tables.

Assessment

Reward daily, weekly, or monthly high scores.