


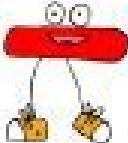






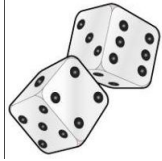
## Year 4

### Supporting the Four Operations at Home

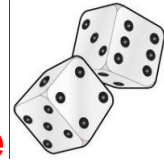
Examples of Card and Dice Games you can play at home with your child.

# Math Keywords

<h3>Addition</h3> <p>add altogether and both how many how much in all increased by plus sum together total</p> <hr/> <hr/>	 	<h3>Subtraction</h3> <p>are not change decreased by difference fewer have left how many did not have how many more how much more less than remain subtract take away taller / shorter</p> <hr/> <hr/>	 
<h3>Division</h3> <p>as much cut up divided by each group has half (or other fractions) how many in each parts quotient of separated share something equally split</p> <hr/> <hr/>		<h3>Multiplication</h3> <p>by (dimension) double each group multiplied by of product of times triple</p> <hr/> <hr/>	



## Dice Games you can play at home



### Not a 1! Mental Addition and Critical Thinking

The goal of Pig is to be the first player to get to 100. The game is played with a pair of dice, and requires a paper and pencil for scoring.

1. The first player rolls the dice, calculates the sum (mentally), then rolls again if he or she wants to. The next sum is added to the first. The player can roll as often as s/he wants to before play goes to the next turn. However...
2. If a 1 comes up on one of the dice before the player decides to stop rolling, the player scores 0 for that round. The play goes to the next player.
3. Worse still, if a 1 comes up on both of the dice, the turn ends and the player's entire total falls to 0.

### DICE GAMES - QUICK IDEAS

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#### KNOCK OFF NUMBERS

**You need:** 1 dice, paper & pencil

- 1 learner throws 1 dice, other writes the number that is thrown.
- Do this 10 times in total.
- Learners' work together to add the numbers as quickly as possible using their own strategies.



#### BONDS TO 20

- Throw 1 dice many times. Keep adding each time to get to **EXACTLY** 20. If your score adds to more than 20 you are bust! Start again.

#### VARIATIONS:

- Add to 30, 50 or 100.



## MENTAL MATHS

**Skills:** Relationship between addition and subtraction

- Each learner gets a dice
- Roll the dice and keep the number in their head
- Using that number, give them something to work out e.g. +10 to the number, add 10 more to the answer, + 100 to the answer. What's your answer now?
- Can they work out what another learner's original number was by working backwards e.g. Answer -100, less 10, -10?



## HOW MANY TO 20

- Throw two dice
- Add the numbers together
- Say how many more you need to make 20

e.g.  +  answer 15

## VARIATIONS:

You can use more dice and say how many to add to 25; 30; 50 or 100



## Hooray Arrays (A game for two players)

**Skills:** Make arrays

**You need:** 2 different colour dice (1-6 or 0-9), Square paper, pencil, ruler

- Roll the two dice.
- Draw an array by multiplying one dice by the other. (If you roll 3 and 4, draw an array with 3 squares in 4 rows) write the total under the array.
- Each player has 10 rounds. The player with the highest score wins.



## Card Games you can play at home

### OTHER PLAYING CARD GAMES

#### ADD 5 CARDS

**Skill:** 1 & 2 digit addition and addition strategies

- Work in pairs using *Think, Pair, Share* (see insert box below)
- King = 13, Queen = 12, Jack = 11, Ace = 1
- Deal out 5 cards **face up** as shown
- Both learners add up the values of the cards
- Check each other's totals and discuss the strategies used to add



**VARIATIONS:** use less cards for younger learners or take out picture cards

Adapted from: <http://www.math-drills.com/addition.shtml#Games>

#### THINK, PAIR, SHARE

Work through the problem on your own, then, explain your thinking to your partner

Don't forget to: Listen to each other & ask questions

## 14. First to 50 - Find the Difference

5+ years

2- 5 players

Practice subtraction facts.

Instructions

### First to 50 - Find the Difference

2 - 5 players

#### Getting Ready

Shuffle cards and place face down in a pile in the center of the players.

#### Play the Game

Each player draws two cards from the center pile. (Or someone can deal two cards to each player.)

Players find the difference between the two values on the cards, e.g. the difference between 8 and 3 is 5.

The player with the highest answer keeps their cards.

The others return their cards to the pile which is shuffled and placed in the center.

Repeat. Each player keeps adding the value of the cards they have won until one player reaches 50 and becomes the winner.

## 6. Make 25 With 5

6+ years

2 - 4 players

Practice addition.

Instructions

### **Make 25 With 5**

2 - 4 players

#### **Getting Ready**

Each player is dealt 5 cards to hold in their hand.  
The remaining cards are placed face down in a pile in the center.  
The top card is turned over and placed beside the pile.

#### **Play the Game**

The aim of each round is to create a hand of 5 cards that add to 25.  
Players take it in turn to pick up the top card of the pile or the top card of the discard pile. Each player finishes their turn by discarding a card onto the top of the discard pile.

The first player to have a set of 5 cards that total 25 calls out, 'Twenty-five' and is the winner of that round.

Keep score of how many rounds each player wins.

The winner is the player who wins the most rounds.

## SUBTRACTION NUMBER BATTLE

**Skill:** Number recognition and subtraction

**Players:** pairs

**You need:** 1 Deck of cards, face cards = ten, Ace = 1

- Players split a deck of cards
- At the same time, each player flips over their top **two** cards and subtract the smaller number from the larger number.
- **EXAMPLE:**



- Player 1: Difference is 0



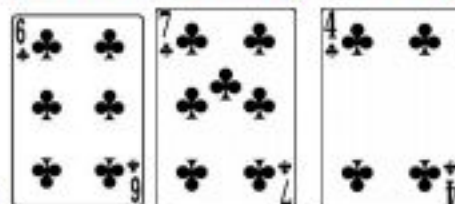
- Player 2: Difference is 7
- Player 2 wins all four cards
- If the card differences have the same value, the cards are placed in a centre pile. The next round is played normally and the winner of the next subtraction number battle takes the centre pile as well.

**VARIATION:** place value and subtraction

- Remove the 10s, face cards and jokers from the pack
- Players split a deck of cards and simultaneously flip over their top three cards.
- Make two of them into a 2 digit number and subtract the third. Players may move the cards to place them in any position they wish.
- **EXAMPLE:**



- Player 1:  $98 - 3 = 95$



- Player 2:  $67 - 4 = 63$

## What's My Factor? (A Three Player Card Game)

You will need a deck of cards. Ace = 1, jack = 11, queen = 12 and king = 13.

1. Two players each draw one card from the deck. Without looking at their cards, each player must place the card on his or her forehead, so that the other players can see the card's value.
2. The third, cardless player looks at the two cards on the others' foreheads and multiplies the cards' values together, saying, "The product of your two cards is \_\_\_\_\_."
3. Players 1 and 2 then try to figure out the card on their foreheads, alternating guesses.
4. The first player to figure out his or her card number wins 2 points. The other player gets a point when he or she figures out his or her number.

*(a) If the product is incorrect, the players with cards must come up with all of the factors that make that product. For example, if the cardless player says "The product of your two cards is 28" when the cards are a four and a six, the players with cards must come up with all of the factors – 1, 28; 2, 14; 4, 7.*

*(b) The player that comes up with the most factors gets two points and the one that comes up with fewer factors gets one point.*

*(c) The player that called out the incorrect product must repeat the multiplication problem, with the correct product this time.*

5. Deal a new hand, rotating who gets cards. Take turns until the deck is exhausted (Bonus question:  $52 \div 3 =$  how many rounds?)

**For two players:** To modify this game, draw one card and place on the table top. One player draws a second card and places it on his or her forehead and must determine the card value. The second player must help the first by revealing the product of the cards. The winner is the person who takes the least amount of time to figure out all of the cards they've drawn.

**For younger players,** remove the jacks, queens and kings from the deck.

For discussion: After playing this activity, you might want to ask your kids some questions such as:

- Do you think we can make the game more challenging? If so, how?
- Do you think we could play a similar game, but make it about a different kind of math? If so, what?

## HiLo (A game for small groups)

Deck of cards (picture cards removed)

### Aim

To achieve the highest score

### Rules

- a. One player deals out two cards face down to each player.
- b. The dealer then states either High or Low and turns over his/her cards. These cards are multiplied.
- c. The other players now turn over their cards and work out their totals. If a player scores less than the dealer, when the call is **LOW** then he/she earns a point. If the call was **HIGH** and the player scored less than the dealer then he/she does not score.

The winner is the player with the highest score after ten rounds.

### Variation

Remove some of the higher value cards to make the game simpler.

The dealer adds a third card face up for each player that they have to add to the product.

## Target Number ( A game for a small group)

Deck of cards (Picture cards all have a value of ten) Ace = one or eleven

### Aim

Make a target number using three numbers and different operations

- a. The dealer chooses a two digit number and deals three cards to each player.
- b. The player to the left of the dealer tries to make the target number using his/her three cards and any of the four mathematical operations (addition, subtraction, multiplication or division). If the player cannot make the number, one card is discarded from the hand and another one drawn. Play continues in a clockwise direction.
- c. The winner is the player who can make the target number with his/her three cards.



### Sample game: Target number 32

Player 1    J    3    4    (**10** x **3** + **4**) = **34**

Player 2    9    8    4    (**9** x **4** - **8**) = **28**

Player 3    Q    8    4    (**10** x **4** - **8**) = **32 (Win)**

### Variations

- The size of the target number and/or the operations used can be altered depending on the age of the players
- Deal out more than three cards

### Secret Pairs ( A game for pairs)

A set of ten playing cards of any suit from ace to ten. Ace = one.

### Aim

To use multiplication facts to correctly guess the secret pair of numbers.

### Rules

- a. Each player is dealt ten cards.
- b. Each player arranges their ten cards in five pairs but keeps these pairs secret from the other player
- c. He or she writes the product of each pair on a sheet.
- d. The second player must then try to guess the which pairs produce the given product
- e. Players swap roles.
- f. The winner is the player who correctly guesses the most pairs.

### Sources:

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