

Peak School



Number Knowledge – Year 3 & 4

Helping your child recall basic number facts quickly and accurately

September 2015

Introduction

At Peak School we are looking to develop three key areas that all strong mathematicians should have. The first key area, and the area this booklet focuses, is number knowledge (mental maths). The second key area is developing a range of strategies to complete a number challenge and the third key area is problem solving. This booklet focuses on number knowledge as it is the foundation that the other two key areas work from. Without a solid base the children will struggle in the other areas.

Developing a love of Maths

Before we go into more detail regarding some of the activities and/or games you can play with your child it is important to think about what message you give your children regarding maths.

If you say to your child that you don't like maths or that you find it hard, it is likely your child will feel the same way. Get excited about maths, by all means talk about how much of a challenge it can be but by showing enthusiasm for learning new things is developing a growth mindset.

If you show stress and frustration when working with numbers then your children will sense this and likely develop the same attitudes. Research has shown that the way we model our interaction with maths has a massive bearing on how confident our children are in this area.

Number Knowledge

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Practical Examples

The following two pages talk about activities or games you can play with your child to develop their number knowledge.

Our number system is based on the Base 10 so it is crucial the children can quickly make 10, 20, 30. When reading children develop 'sight words' meaning that these are locked into the brain and the children do not need to think about what the word is and they can simply read it. We are looking to develop the same type of thing with numbers. We are looking to develop the children's number knowledge to the point where they don't really need to think about it and they 'just know it'.

Making 10 with playing cards – depending on the ability of your child will determine the target number. Take out all the picture cards so you are left with cards from Ace to 9.

Activity 1 – spread all the playing cards out (face up) and get your child to 'match' numbers together to 'make 10'. We are developing the children's ability to see $2+8=10$, $6+4=10$ etc. Make the game competitive by seeing who can be the first to get 10 sets of 10. If that is too easy for them get them to make 20 using 3 cards.

Activity 2 – turn a card over and the child has to quickly work out how many more they need to make 10. E.g. if you turn over an 8 they should shout out 2. If that is too easy make it more challenging by saying how many more to 10 (again assuming an 8 was turned over) then how much to 20 (12), 40 (32), 50 (42), 100 (92).

Activity 3 – turn a card over and say 'double' e.g. if a 4 they should shout out 8. Once they can do this start to use the terms triple, times by 5 or times by 10 etc.

Greedy Pig

Greedy Pig – Objective: Roll a die to accumulate points.

To Play: A game consists of 10 rounds by default (see options below). All players are 'standing' as each round begins. Players roll the die (take turns or have a specified 'roller', as desired). If a two, three, four, five, or six is rolled, all standing players add that number of points to their scores for the current round. A player can 'sit down' at any time. When a player sits, he or she safeguards all the points he or she has earned in the round, but is not able to earn more points until the next round. When a one is rolled, all 'standing' players lose the points they have accumulated in the current round. The player with the most points at the end of the game wins.



Subtraction War

Shuffle the deck of cards and deal them face down, giving each player an equal number of cards until the deck runs out. Each player keeps his cards in a stack. Assign picture cards, such as jacks, queens, and kings, a value of 10. Give aces a value of 1.

Demonstrate to your child how to play the game: Each player turns two cards face up, reads the number sentence and supplies the answer. For example, if your child draws a 5 and a 4, he says $5 - 4 = 1$. If you draw a 7 and an 2, then your number sentence is $7 - 2 = 5$. Because your result is larger, you win the four cards and you put them at the bottom of your pile.

If each of you has a number sentence with the same answer, then it's war! At this point, you'll reverse the math "operation" and do an addition problem. Each player puts four cards face down and turns up two of them. The player with the sum wins all eight cards.

Set up the timer and play the game for 10 to 15 minutes. When the bell goes off, each player counts his cards. The player with the most cards wins. If one player runs out of cards before time is up, then the other player wins.



Number plate challenge

Hong Kong number plates are ideal for practicing numbers up to 9,999. When you are out in the car or taxi ask the children questions about the numbers on the different number plates

Read the number. Can you add up the digits? What is 1 more/less, 10 more/less, 100 more/less, 1000 more/less?



What is the value of the 9 in that number? How many thousands/hundreds/tens/units?

Is the number odd or even? How do you know?



There are also other areas of Maths that can be explored naturally at home such as time, cooking and money.

Make the games fun and the children will want to play them again. Playing Maths games should not be a stress for either the parent or the child.