Make a Number/ Break a Number

Tens	Ones	The Number

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PLACE VALUE ACTIVITY—Make a Number/Break a Number

EQUIPMENT:

> 1 die (either 6 sided or 9 sided depending on level of students)
> Dice mat
> 1 x 10-frame
> 50 unifix cubes
> Recording sheet

AIM: The aim of this activity is to build on students' understanding of place value and recognise the countable unit of 10. The second phase enables them to use concrete materials to understand the concept of borrowing in subtraction.

INSTRUCTIONS: Students play in pairs and take it in turns to be the recorder. First player rolls the dice and puts the corresponding number of unifix cubes in the 10-frame that appear on the dice. They then fill in the recording sheet in the appropriate column.
They must say out loud "*there are 0 of the tens and 3 of the ones and the number is 3*"
The next player rolls the dice and has to add unifix cubes to the 10-frame. If it fills up they must stack the 10 unifix cubes and put any left over in the 10-frame. They then repeat the process of speaking out loud, ostensibly adding on to the next number. *"There are 1 of the tens and 2 of the ones and the number is 12"*.
They continue until all the unifix cubes are used up.

The role of the teacher is to move around the room talking to students about what they are doing particularly taking notice of when the 0 (zero) is used as a place holder. Too many kids think it is just nothing.

PHASE 2
Once the students are familiar with the game and are competent and have used all their unifix cubes, they then go backwards by subtracting the number on the die. They will need to break up the stacks of 10 unifix cubes as they go until they reach zero.

EXTENSION: For middle and upper primary students who are either starting to explore decimals or are struggling with understanding, the 10-frame no longer represents one, but 1 tenth and the second recording sheet is used.
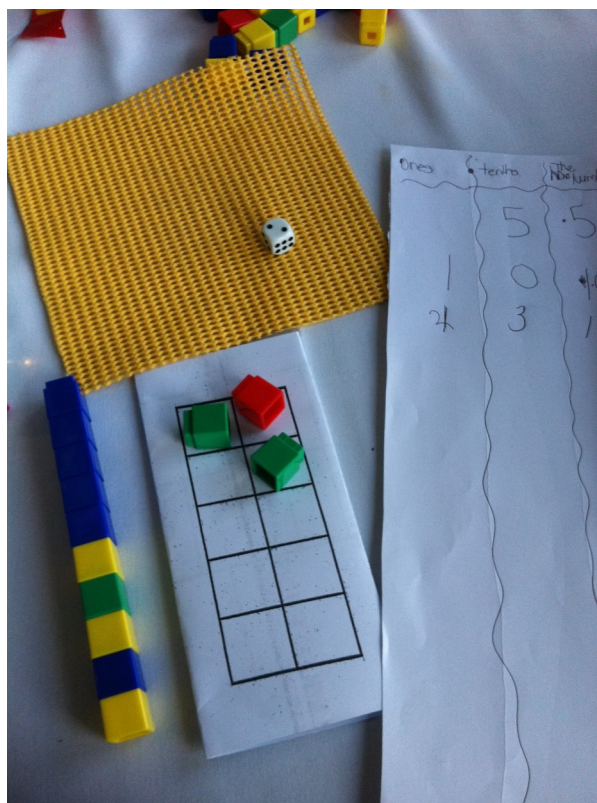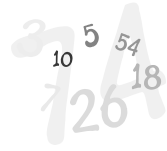
Make a Number/ Break a Number

Ones	Tenths	The Number

Ones	Tenths	The Number

Make a Number/ Break a Number

Hundreds	Tens	Ones	The Number

Don't Bust!

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

How To Play

2 Player Game—1 person plays, 1 person deals

Equipment—100 board, 1 set of playing cards, 2 different coloured counters

Aim—To get the highest number on the board without busting (going over 100) by adding or multiplying numbers. Each time a card is dealt you can either add or multiply it with the number your counter is on on the board. You can choose to stop at any stage of the game if you are happy with your number.   Best of 3 games wins!

Picture Cards = 10   Joker = wild (can choose any number 1-10)

TARGET 100/ Don't Bust!

Introduction / objectives
This is a card game that provides the students with the opportunity to investigate a variety of mental computation strategies when adding and multiplying numbers. It is quick and easy to organise and is lots of fun, even for adults who play it. The less able student can win, as there is an element of chance involved. A terrific number sense game to use as a warm up activity, or a focus lesson for young children.

Equipment [for each pair of students]
100 number board, 10 x 10 tables chart and two counters.
Deck of cards. All number cards have face value. Ace = 1. 2 = 2 etc.
Picture cards = 10
Joker = wild [can have the value of any other card in the deck].

Procedure
Two students compete against each other to see who can get closest to 100 without busting. One student deals cards out to his/her opponent who adds or multiplies the cards. This continues until the student decides to stop.

Example
Player A is going first and having cards dealt by partner.
Card 5 is dealt first so player A moves counter to 5 on number board. Card 6 is the next card dealt. This could be 5+6 and the counter is moved to 11 or it could be 5x6 and counter is moved to 30. Let's assume that Player A decides to move to 30. The next card is a KING so the student adds 10 and moves the counter to 40. Next card is 2. Student decides to multiply and moves to 80. Next card is Ace. Student decides to multiply and stay on 80, hoping that the next two cards are 10's and he/she can hit exactly 100. Next card is a 5. Student adds and moves to 85. Next card is 9. Student moves to 94 and decides to stop fearing that the next card flipped will be bigger than a 6and she / he would bust. Player B now has the cards dealt to him / her and tries to better 94 without busting. Once this game is completed, play again but player B goes first.

Teacher tips
• Card familiarisation activities are a good idea if students haven't been exposed to decks of cards before. Perhaps alder students could tell you the value of a deck of cards based on the values listed in this game. Younger students should do sorting activities to help them discover that there are four of each card. How many cards in the deck?

• Transparent counters help students see the numbers on the board.

• Children find shuffling cards difficult so keep working through the deck of cards until you run out. Then shuffle or ask the teacher to help.

• Children only deal a card out when the partner says, 'Card please '. This eliminates the problem of students dealing the card while the other student is still deciding their move. If the card is flipped without being asked for the receiver has the option of using it or having a fresh one dealt out.

• Try modelling the game to students using an overhead, transparency of 100 number board, transparent counters and overhead miniature playing cards. A very effective way to demonstrate the game and strategies that you need to discuss.

• Vary the game if needed. Perhaps only add for young children or play hit exactly 100 for older students. For this game students can use any operation with winner being the student who hits 100 in the least amount of cards.

• Vary the game by making it more challenging. Use any operation to hit exactly 100 in fewer cards than your partner.

• When introducing the game, tell the children that while the game is lots of fun, the point of the game is to make decisions and become a smarter mathematician by taking short cuts when adding or multiplying. The overhead gives you the opportunity to discuss some of the strategies listed later in the article.

Hit 100 anything goes – Probability, choosing and using operations

A game best suited to students from year 4 onwards. Materials – 100 number board, two transparent counters and full deck of cards with Jokers included. All cards have face value with the Ace representing 1 and the picture cards representing 10. The Joker is wild and can represent any number from 1 to 10.
The game starts with one student dealing while the other moves their counter. The objective is to reach exactly 100 in the least number of cards possible. Any operation may be used. Once a student hits exactly 100 the cards used are counted and then placed back in the deck and reshuffled. The roles are reversed and the challenge is for the second student playing to reach 100 in fewer cards. Students must ask for the card before it is dealt. If the card is dealt before it is asked for it can be rejected. This eliminates rushing a student to make a decision. When dealing cards they need to be placed in rows of 5 or 6 so that decisions on which operation to use, can be based on what cards have already been dealt.

Each player covers their board with **20 counters**. Each player takes turns to roll a **1-6 sided die** and removes the number of counters to match the number rolled. The first player to remove all counters wins that game. **The best of   3 games wins!**

Get Outta My House!
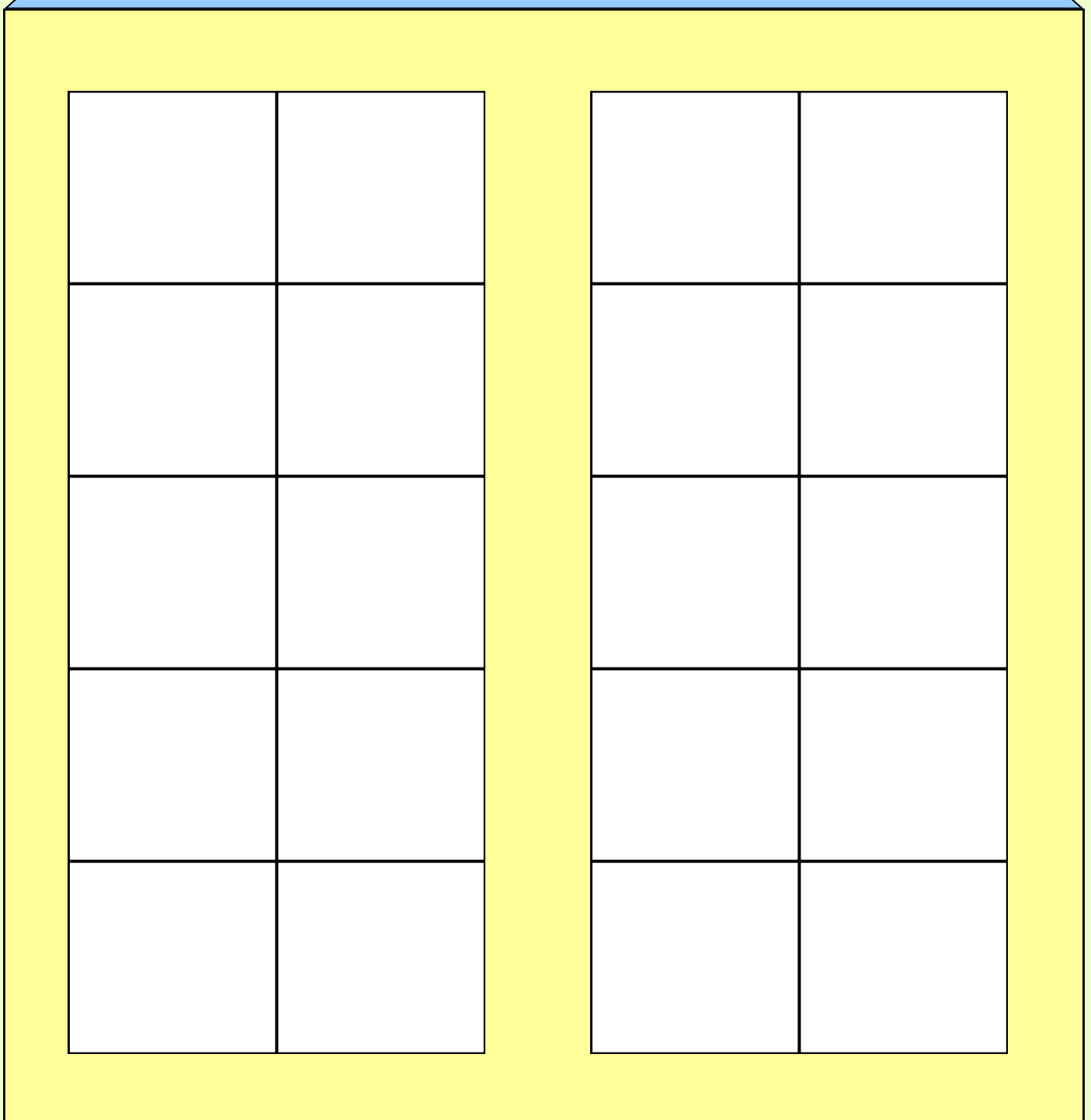
Jackpot $1 000

Hundreds	Tens	Ones	The Number

Hundreds	Tens	Ones	The Number

Jackpot $100

			The Number					The Number