The National
Numeracy *Strategy*
in Cumbria

Ideas For using Playing Cards to support the Daily Mathematics Lesson

Thanks to Leading Mathematics Teachers, Cumbria LEA, for putting together these activities:

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Ideas for using Playing Cards

Remove picture cards.

1. Matching cards. Work in 1's, 2's or more).
   a) face up - how quickly can you match and pair?
   b) face down - pairing by memory
   c) match - snap

2. Find and order.
   a) face up
      (1) order cards quickly 1 - 10
      (2) from any starting number 7 - 10 - 6
      (3) order 10 - 1
   b) face down

3. Deal and add (2 or more)

   2, 3, 4 or more cards dealt out.

   Total numbers on cards. Who has the greatest/smallest number. Winner with the highest/lowest score. What is the difference between your total scores?

4. Minus (2 or more)

   Deal 2 cards - find the difference.
   What is the biggest/smallest difference you can make?
   Total your differences after 10 games. The winner is the one with the highest score.

5. Quick times (individual)

   Deal or choose 2 cards. Multiply numbers together.
   How many can you do in 5 minutes?

6. Tens and Units (individual/paired)

   Put 2 cards together to create a TU number.
   Choose a third card
      a) add to original TU number
      b) subtract form original TU number
      c) multiply to original TU number
      d) divide into original TU number

   Extension: use 3 cards and make HTU number.

7. Choose 3 cards

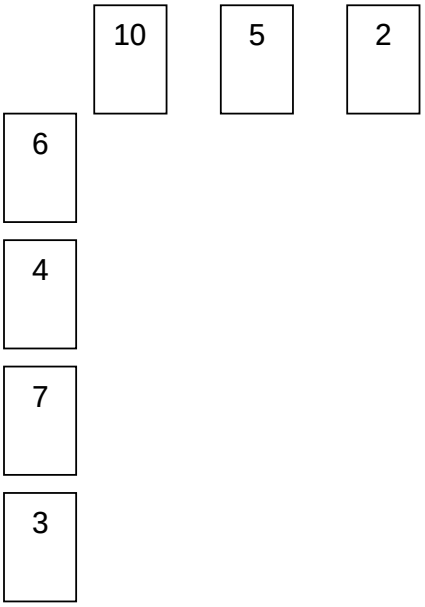
4	3	5

   Make as many HTU combinations as you can.
   Take smallest from largest.
   Order by size.
   What is largest odd/even number you can make?

Total the numbers (use a calculator).

8. Use cards 1 - 10 of one suit. Make 5 TU pairs. Order largest - smallest. List odd/even. How far away from 100 is each pair?

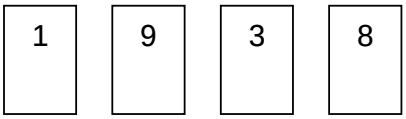
9. Numbered grid (bluetac on board).



Rules: a) multiply numbers
b) add
c) subtract

Extension: use more numbers in grid. Double numbers ie. 2 digits down side and repeat rules.

10. Choose 4 cards (1 - 10)

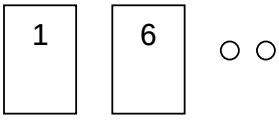


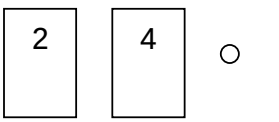
Place four counters on cards eg. 2 counters on card 1, 1 counter on card 3 and 1 counter on card 8.

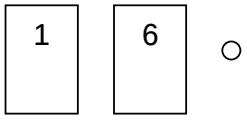
Total 1 + 1 + 3 + 8 = ?

What is the largest amount you can make?

Extension: make 2 digit numbers.







16 + 16 + 24 + 35 = ?

11. Pelmanism

Use cards 1 - 10.

Spread cards face down and take it in turns to turn over pairs that make a target number eg. 10, 11. Winner is the player with the most pairs.

12. Numbers bonds to 10 (pairs, whole class)

Timer, cards 1 - 10.

Hold up cards in turn and children say how many more to make 10. Time how long it takes to go through the pack.

Extension: How many needed to make 20?
Give me 3 multiples of this number.

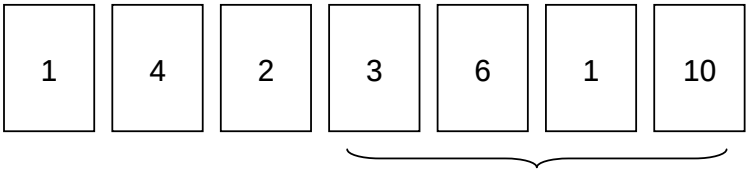
Aim: to beat their previous time.

13. Make twenty (pairs, groups of 3 or 4)

Remove picture cards.

Shuffle and put face down.

Turn one card at a time and place it face up in line.



this set totals 20

When you see a set of 'consecutive' cards which totals 20, gather set and close gaps. A set can have as many cards as you want in it but the total must be 20.

Try to end with as few cards in the line as you can.

14. What's the difference?

Place rest of cards face down. Take card in turn. When a difference of 3 can be made that pair of cards is placed face down. Another turn is allowed if you make a pair.

Winner - one who gets rid of all cards first or who has the smallest total in their hand.

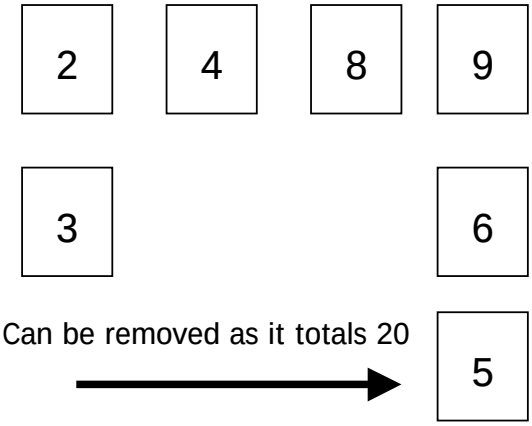
Variation: change the difference or use 2 cards as a TU and subtract the third.

15. Multiple of Ten (or as you choose)

Deal 4 cards face up. Place the rest face down. One card at a time turned over frmt eh deck. This card can be placed below any of the face up cards.

When a column adds up to a multiple of 10 it can be removed.

Can you remove all the columns before the deck runs out?



16. Prime numbers - Ace = 1, J = 11, Q = 12 and K = 13.

Use whole pack.

Children remove prime numbers from pack: 1, 2, 3, 5, 7, J, K.

Total of prime numbers - is it a prime number?

Which prime numbers, when added together, make a prime number?

17. Know your number (take out picture cards)

Deal out cards to whole class.

Each child looks at card.

Hold up card if you have:

- an even number
- an odd number
- a multiple of 2, 3, 4, 5, 6, 7, 8, 9, 10
- a square number
- a square root
- a prime number
- a triangular number
- a factor of
- a fraction of

Did you notice any numbers that were held up a lot?

18. Sort Suits (4 players)

Whole pack of cards:
J = 11
Q =12
K = 13
A = 1 or 14

a) Share out cards. Take it in turns to sort card onto correct pile of either hearts, spades, clubs, diamonds.
b) Each person takes a suit and sorts into order - lowest to highest and highest - lowest.

19. Suit totals

Total the numbers (1+2+3+4)

Extension - triangular numbers. Children to work out formula $\frac{n \times (n + 1)}{2}$

20. Suit Motifs

Total the suit motifs eg: the three of diamonds would show five diamonds.

(i) of one card
(ii) of more than one card
(iii) of the cards 1 - 10
(iv) of the whole suit
(v) of the total pack of cards

Extension - can you see a pattern (formula)?

21. Percentages, Ratio and Proportion

What percentage of the pack is red?

Take one suit.

What is the ratio of picture cards to the rest of the suit? (3:10)

What is the proportion that are picture cards? 3:13?

Whole pack.

What is the ratio of picture cards to the rest of the pack?

What is the proportion of the pack that are picture cards?

22. Probability (either within individual suits, red cards, black cards or whole pack)

Children to work out probability for:

- even numbers
- red cards
- black cards
- individual cards (with suit)
- a number, picture card
- multiples of 1, 2, 3, 4, 5, 6, 7, 8, 9, 10 reasoning
- suits

Link work with fractions.

Extension: use jokers.

Give the children multi problems. The seven of diamonds followed by a 2 clubs - not for the faint hearted!

23. Pyramid - up to four players.

6 cards face up. Object to build a pyramid.

ie.

8	2	7	6	4	5

No duplicates - change if necessary.

A card is placed above and between cards if it represents the difference of or the sum of.

Complete the pyramid until stuck or you reach the top.

For more than 1 player, take it in turns to place card on pyramid. If a player can't go, return card to the bottom of pile. You do not need to go even when you can. When pyramid is complete, the winner is the player with the least amount of cards left.

Extension: do not use every individual card. Use every second or third.

24. Reach 100 (TARGET) - option: calculator

Deal 5 cards face up on table eg. 2, 6, 8, 8, 5. Children move along the line selecting an operation +, -, x, ÷. They need to get as close to 100 as possible.

Variation:

keep the same cards and try again
use only number cards 1 - 5, 6 - 10, etc
target operations to be used, one, two three or all
play individually or in pairs, pairs to solve the same line individually, look at each others difference and keep a running record. Who has the lowest score after 5 games.

25. 3 Times Table Club

Children to look closely at the clubs. How many bulbs are on each club, on each card? Do not count the motif under the number. The three of clubs - 3 clubs with a total of nine bulbs - 3 x 3 =9.

Ask the children to look at other numbers and discover the 3x table.

Extension: use all motifs on card.

How many bulbs in total from cards 10 - 10?

3 6 9 12 15 18 21 24 27 30

Children to pair up systematically to make bonds to 10, 30 or whatever appropriate for ability. Use 3x table clubs in conjunction with other random cards to make multistage problems. ie. 3 clubs (3 x 3), 8 of diamonds, = 8.

26. Table of Hearts

Looking at the suit of hearts, notice that there are 2 semi circles

1 2

Use the hearts to focus on the 2 x 2 table.

Use 'table of hearts' in the same way as the 3 times table club.

27. Diamond Table

Four times table. A diamond has four sides.

Use as 'three times table club'.

Age Related Questions

To support teachers in using the activities please find below the list of questions against which is a suggested appropriate target group.

For example, Question 1 is suitable for all key stage 1 pupils. Teachers will need to try the activities to judge the suitability for their own pupils.

1. All KS1
2. Upper KS1
3. Key Stage 2 and lower key stage 2
4. Upper KS1
5. Lower KS2
6. All KS2
7. Lower KS2
8. Upper KS1 Lower KS2
9. All key stage 2
10. Upper KS1 Lower KS2
11. KS1
12. Key Stage 1
13. Lower Key Stage 23
14. Upper Key Stage 2
15. Key Stage 2
16. Upper KS2
17. Key Stage 2
18. Key Stage 1
19. Upper Key Stage 2
20. Upper Key Stage 2
21. Upper Key Stage 2
22. Key Stage 2
23. Key Stage 2
24. Key Stage 2
25. Key Stage 2
26. Upper Key Stage 1 and Key Stage 2
27. Key Stage 2