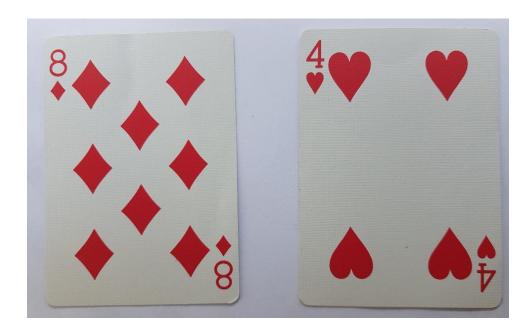


### Day 1

- This week you need ten playing cards, ace to ten, (or cut a piece of paper into ten pieces and number them one to ten).
- How many different ways can you make 12 using two cards?
   For example 8 + 4 = 12



- How many ways are there to make 13 using two cards?
- Are there more or fewer ways to make 13 than to make 12? Why?
- Do you think there will be more or fewer ways to make 14? Why?

#### Notes for adults working with groups of children

- Numicon might help model the relationships for the children.
- Help the children to work and record systematically so that they can see some of the patterns
  that should emerge and be sure they have considered all possibilities. For example they could
  start with the largest card 10 and pair it with 2 to make 12, then find the card to pair with 9,
  then 8 etc. There will be other ways to be systematic.
- Encourage the children to describe and explain any patterns they see.

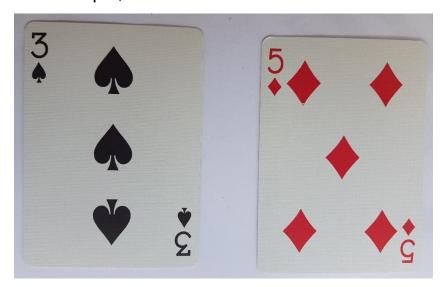
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### Day 2

Choose two cards that have a difference of two.
 For example, 3 and 5 have a difference of 2 because 5 - 3 = 2



Record your pair of numbers.

- Find some more pairs of cards with a difference of 2.
- There are 8 possible pairs, can you find them all?

#### Notes for adults working with groups of children

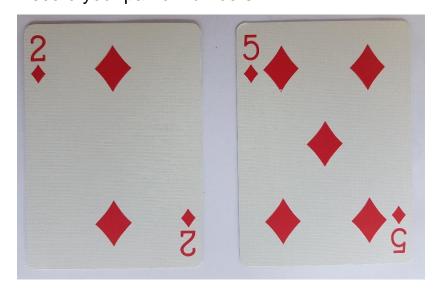
- Numicon might help model the relationships for the children.
- Help the children to work and record systematically so that they can see some of the patterns that should emerge and be sure they have considered all possibilities. For example they could start with the smallest card 1 and pair it with 3 as 3 1 = 2, then then find the card to pair with 2, then 3 etc. There will be other ways to be systematic.
- Encourage the children to describe and explain any patterns they see.

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## Day 3

Choose two cards that have a difference of three.
 For example, 2 and 5 have a difference of 3 because 5 - 2 = 3.
 Record your pair of numbers.



- Can you find all the pairs of cards with a difference of 3?
- What if the difference between the pair of cards has to be 4?
   For example, 2 and 6 because 6 2 = 4.
- How many pairs of cards are there with a difference of 4?
- What do you notice?

#### Notes for adults working with groups of children

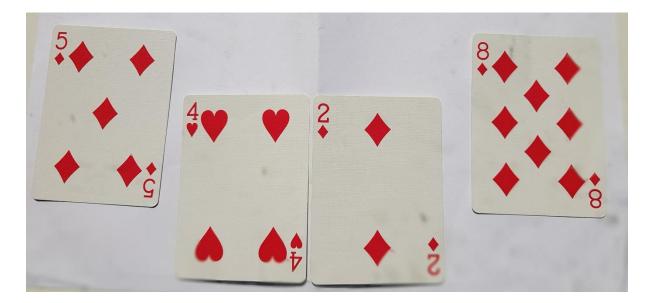
- Numicon might help model the relationships for the children.
- Help the children to work and record systematically so that they can see some of the patterns that should emerge and be sure they have considered all possibilities. For example they could start with the smallest card 1 and pair it with 4 as 4 1 = 3, then then find the card to pair with 2, then 3 etc. There will be other ways to be systematic.
- Encourage the children to describe and explain any patterns they see.

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### Day 4

- Start with four cards.
- Choose two of these cards and add them together.



- Write down the calculation. For example, 2 + 4 = 6.
- Choose another two and add them together. Write down the calculation.
- There are six different calculations you can make by adding two cards from your set of four. Can you find them all?
- There are four different calculations for adding three cards.
   Can you find them?

### Notes for adults working with groups of children including supporting resources

Help the children to work and record systematically so that they can see some of the patterns
that should emerge and be sure they have considered all possibilities. For example they could
start with the smallest number and pair it with each of the other cards, then put that to one
side and repeat for the next smallest card etc. There will be more than one way to be
systematic. Encourage the children to describe and explain any patterns they see.

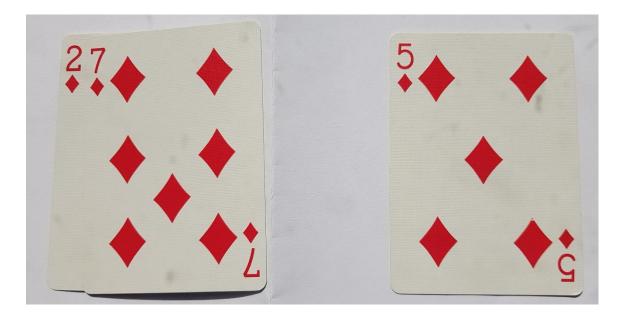
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### Day 5

- Start with three cards.
- Use two of the cards to make a two-digit number. Write it down.



Use the same cards to make another two-digit number. Write it down. For example, 2 and 7 can be used to make 27 or 72.

- Look at all three cards. How many two digit numbers can you make? You should find six.
- Now write your numbers in order from smallest to largest.

#### Notes for adults working with groups of children

- A number line could be used to help children order their six numbers.
- Help the children to work and record systematically so that they can see some of the patterns
  that should emerge and be sure they have considered all possibilities. For example, they
  could choose a pair and find both of the two-digit numbers, then swap one of the numbers. Or
  they could choose to use one card as the tens and then use each of the other cards as the
  ones, then swap to use a different card as the tens. There will be other ways to be systematic.
- Encourage the children to describe and explain any patterns they see.

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