

## Common Factor Challenge

### Purpose:

The purpose of this activity is to help your child practice finding common factors of pairs of numbers. This activity assumes that your child can identify factors of numbers (numbers that divide evenly into a number with no remainder).

### Link to Number Framework:

Number Facts, Stages 7-8

### What you need:

- A deck of cards with the face cards and jokers removed (aces count as 1s and 10s count as 0s).
- Pen and paper.

### What to do:

- Shuffle the cards and deal out two pairs of cards face up. These represent two 2-digit numbers
- Ask your child to name the factors of each. Factors are numbers that divide evenly into a number with no remainder (eg. the factors of 6 are 1, 2, 3, and 6). Factors come in pairs that multiply together to give the number. Every number has at least 1 and itself as factors.
- You may want to list the factors of each number on a piece of paper. If either of the numbers have only 1 and themselves as factors, then they are called prime numbers.
- Ask your child to identify the common factors of the two numbers - if there are any.
- Repeat the steps above with more random pairs of numbers. Encourage your child to quickly identify some common factors without listing all factors, for example:
  - All pairs of numbers have 1 as a common factor
  - If both numbers are even they have 2 as a common factor
  - If both numbers end in either 0 or 5 then they have 5 as a common factor
  - If both numbers end in 0 then they have 2 and 5 as common factors

### What to expect your child to do:

- Use and understand terms such as factors, prime numbers, multiples
- Be able to identify factors of numbers

### Variations:

- This could be played as a game with a point given for each common factor found for a pair of numbers

### He Kupu Māori

two digit number	tau mati-rua
calculator	tātaitai
factor	tauwehe
divide	whakawehe (-a)
common factor	tauwehe pātahi
prime number	tau toitū

### He Whakawhitinga Kōrero:

- Riwhiriwhia ngā kāri. Whakatakotoria kia rua ngā takirua kāri, ko ngā mata ki runga, hei hanga i ētahi tau mati-rua e rua. (*Shuffle the cards. Place down two pairs of cards, face up, in order to make two two-digit numbers.*)

- E rua ngā tau. He tau mati-rua. *(We've got two numbers. They are two digit numbers.)*
- He aha ngā tauwehe o ia tau? He aha ngā tau ka whakawehe pū ki roto i tēnā tau? *(What are the factors of each number? What numbers divide exactly in to that number?)*
- He aha ngā tauwehe pātahi o ēnei tau e rua? He aha ngā tau ka whakawehe pū ki roto i ngā tau e rua nei? *(What are the common factors of these two numbers? What numbers divide exactly in to both of these numbers?)*
- He taurua ēnei tau, nō reira ko te 2 tētahi tauwehe pātahi. *(These are even numbers, so 2 is a common factor.)*
- Ko te 0 te mati whakamutunga o ēnei tau, nō reira, he tauwehe pātahi te 2, te 5 me te 10. Ka whakawehe pū te 2, te 5 me te 10 ki roto i ēnei tau. *(The last digit of these numbers is zero, so 2, 5 and 10 are common factors. 2, 5 and 10 can be divided exactly in to these numbers.)*