

DIVISIBILITY TESTS.

INVESTIGATIONS OVERVIEW PAGE

THIS PAGE IS A SUMMARY OF THE INVESTIGATIONS THAT STUDENTS MAY ENGAGE IN TO DEEPEN THEIR RELATIONAL UNDERSTANDING. INVESTIGATIONS WITH INSTRUCTIONS TO STUDENTS FOLLOW ON SUBSEQUENT PAGES.

- In pairs, children have a pack of playing cards. They select cards and make a number to test for divisibility by 2 by identifying if it is even. Children explain how they know whether the number is divisible by 2. Children explain why this divisibility test works. [Reflection: How can we tell if a number is divisible by 2?](#)
- In pairs, children have a pack of playing cards. They select cards and make a number to test for divisibility by 4 by identifying if it is even, whether it has an odd tens digit and ones digits 2 and 6 or an even tens digit and ones digits 4, 8 and zero. Children explain how they know whether the number is divisible by 4. Children explain why this divisibility test works. [Reflection: How can we tell if a number is divisible by 4?](#)
- In pairs, children have a pack of playing cards. They select cards and make a number to test for divisibility by 8 by identifying if it is even, whether it has an even hundreds digit and tens and ones digits that are multiples of 8, or an odd hundreds digit and tens and ones digits that are multiples of 8 plus 4. Children explain how they know whether the number is divisible by 8. Children explain why this divisibility test works. [Reflection: How can we tell if a number is divisible by 8?](#)
- In pairs, children have a pack of playing cards. They select cards and make a number to test for divisibility by 3 by identifying whether the digits add to make a multiple of 3. Children explain how they know whether the number is divisible by 3. Children explain why this divisibility test works. [Reflection: How can we tell if a number is divisible by 3?](#)
- In pairs, children have a pack of playing cards. They select cards and make a number to test for divisibility by 9 by identifying whether the digits add to make a multiple of 9. Children explain how they know whether the number is divisible by 9. Children explain why this divisibility test works. [Reflection: How can we tell if a number is divisible by 9?](#)
- In pairs, children have a pack of playing cards. They select cards and make a number to test for divisibility by 6 by testing for divisibility by 2 and 3. Children explain how they know whether the number is divisible by 6. Children explain why this divisibility test works. [Reflection: How can we tell if a number is divisible by 6?](#)
- In pairs, children have a pack of playing cards. They select cards and make a number to test for divisibility by 10 by identifying if the ones digit is zero. Children explain how they know whether the number is divisible by 10. Children explain why this divisibility test works. [Reflection: How can we tell if a number is divisible by 10?](#)

- In pairs, children have a pack of playing cards. They select cards and make a number to test for divisibility by 5 by identifying if the ones digit is zero or 5. Children explain how they know whether the number is divisible by 5. Children explain why this divisibility test works. [Reflection: How can we tell if a number is divisible by 5?](#)
- In pairs, children select cards to make numbers. They test them for divisibility by 2, 3, 4, 5, 6, 8, 9 and 10, completing the table below. They then look for relationships between numbers that are divisible by different numbers. [Reflection: How can we test for divisibility?](#)

Number	÷ 2	÷ 3	÷ 4	÷ 5	÷ 6	÷ 8	÷ 9	÷ 10

Divisibility Tests

Have a pack of playing cards.

Select cards and make a number to test for divisibility by 2 by identifying if it is even.

How do you know whether the number is divisible by 2?

Why does this divisibility test work?

Reflection: How can we tell if a number is divisible by 2?

Select cards and make a number to test for divisibility by 4 by identifying if it is even, whether it has an odd tens digit and ones digits 2 and 6 or an even tens digit and ones digits 4, 8 and zero.

How do you know whether the number is divisible by 4?

Why does this divisibility test work?

Reflection: How can we tell if a number is divisible by 4?

Select cards and make a number to test for divisibility by 8 by identifying if it is even, whether it has an even hundreds digit and tens and ones digits that are multiples of 8, or an odd hundreds digit and tens and ones digits that are multiples of 8, plus 4.

How do you know whether the number is divisible by 8?

Why does this divisibility test work?

Reflection: How can we tell if a number is divisible by 8?

Divisibility Tests

Have a pack of playing cards.

Select cards and make a number to test for divisibility by 3 by identifying whether the digits add to make a multiple of 3.

How you know whether the number is divisible by 3?

Why does this divisibility test work?

Reflection: How can we tell if a number is divisible by 3?

Have a pack of playing cards.

Select cards and make a number to test for divisibility by 9 by identifying whether the digits add to make a multiple of 9.

How you know whether the number is divisible by 9?

Why does this divisibility test work?

Reflection: How can we tell if a number is divisible by 9?

Divisibility Tests

Have a pack of playing cards.

Select cards and make a number to test for divisibility by 6 by testing for divisibility by 2 and 3.

How do you know whether the number is divisible by 6?

Why does this divisibility test work?

Reflection: How can we tell if a number is divisible by 6?

Divisibility Tests

Have a pack of playing cards.

Select cards and make a number to test for divisibility by 10 by identifying if it has zero in the ones place.

How do you know whether the number is divisible by 10?

Why does this divisibility test work?

Reflection: How can we tell if a number is divisible by 10?

Have a pack of playing cards.

Select cards and make a number to test for divisibility by 5 by identifying if it has zero or a 5 in the ones place.

How do you know whether the number is divisible by 5?

Why does this divisibility test work?

Reflection: How can we tell if a number is divisible by 5?

Divisibility Tests

Have a pack of playing cards.

Select cards and make a number to test for divisibility by 2, 3, 4, 5, 6, 8, 9 and 10, recording in a table.

Look for relationships between numbers that are divisible by different numbers

Number	$\div 2$	$\div 3$	$\div 4$	$\div 5$	$\div 6$	$\div 8$	$\div 9$	$\div 10$

Reflection: How can we test for divisibility?