

Divisibility and Logic

a problem for math circles

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• Primarily middle school teachers

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- Groups of 4

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 - Short intro to group work

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 - Large group discussion on divisibility rules

• Divisibility by

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• 3 - sum of digits divisible by 3

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• 6 - divisible by BOTH 2 and 3

• Divisibility by

- 2 - even, ends in 0, 2, 4, 6, 8
- 3 - sum of digits divisible by 3
- 4 - last two digits divisible by 4
- 5 - ends in 0 or 5
- 6 - divisible by BOTH 2 and 3
- 8 - last 3 digits divisible by 8

• Divisibility by

- 2 - even, ends in 0, 2, 4, 6, 8
- 3 - sum of digits divisible by 3
- 4 - last two digits divisible by 4
- 5 - ends in 0 or 5
- 6 - divisible by BOTH 2 and 3
- 8 - last 3 digits divisible by 8
- 9 - sum of digits divisible by 9

• Divisibility by

- 2 - even, ends in 0, 2, 4, 6, 8
- 3 - sum of digits divisible by 3
- 4 - last two digits divisible by 4
- 5 - ends in 0 or 5
- 6 - divisible by BOTH 2 and 3
- 8 - last 3 digits divisible by 8
- 9 - sum of digits divisible by 9
- 10 - ends in 0.

Then I turned
them loose.

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them loose.

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not you yet

Why was it
successful?

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- Accessible

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- When you take only the left-hand nine digits, the new number is divisible by 9.

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- The number is divisible by 10.
- When you take only the left-hand nine digits, the new number is divisible by 9.
- etc.

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