

Handout: Magic Threes

Start Simple and look for what can go wrong:

1. Try the problem for even numbers, ie. numbers divisible by two:
Is there a certain number of numbers you need to be able to find a pair whose difference is divisible by two? Would two numbers work?
2. How many numbers do you need before you get two who have a difference that is divisible by 10?
3. Does this help our 3's case?
What could go wrong?
How is it related to remainders after dividing by 2 and 10?
4. What are the possible remainders numbers could have when we divide by 3?
5. Could we pick four numbers that each have a different remainder?