Los Angeles Math Circle

Early Elementary II

March 3rd, 2019

**Evens and Odds**

1. Benjamin picks two even numbers. If he adds them together, what can you say about the number that he gets? Is it even or odd?

Hint: Take some even numbers and try it out! Do you see a pattern? Explain!

1. Katie picks an even and an odd number. If she adds them together, does she get an even or an odd number?
2. Stella picks two odd numbers and adds them together. Is the number she gets even or odd?
3. What are consecutive numbers? Give an example of consecutive numbers below.
4. If you add any two consecutive numbers, what answers will you never get?
5. On a table are some pennies (1 cent), nickels (5 cents), and quarters (25 cents). There are many coins of each type. Jessica took 3 coins and added the values together. She says she as 36 cents. Rebecca says this is not true! Can you explain why Rebecca says this?
6. Now, we also added some dimes (10 cents) to the table. Rebecca takes 3 coins and says they add up to 36 cents. Which coins did she take?

Challenge Problem!

* Snow White and the 7 dwarves are playing a game. Snow White wrote the number 20 on a piece of paper and gave it to the dwarves. Each of the 7 dwarves looks at the number on the paper and adds or subtracts one to it. Then he gives the number he gets to the next dwarf.
  + Can they get 21 in the end? (If yes, show how. If not, explain why not)
  + Can they get 23?
  + Can they get 19?
  + Can they get 17?
  + Can they get 22?
  + Can they get 14?
  + Can you list all the numbers they can get?

**Math Kangaroo Review!**

1. Richard dries grapes to obtain raisins. He gets 1 kilogram of raisins out of 4 kilograms of grapes. How many kilograms of grapes will he need in order to obtain 4 kilograms of raisins?
2. Anna shared her apples among herself and five friends. If everyone got half an apple, how many apples did she share?
3. A farmer has the same number of chickens, sheep, and goats. Together all these animals have 180 legs. How many goats live on this farm?
4. My dogs have 18 more legs than noses. How many dogs do I have?
5. Rachel added seven numbers together and got a sum of 2016. She later found out she has made a mistake by using the number 201 instead of 102. What sum should she have gotten instead of 2016?
6. A group of 31 students went camping taking nine tents. Each tent shelters either three or five students. If all students were covered by a tent, at least how many of the tents housed five students each?