

CHICKEN NUGGETS

**SETUP:**

A restaurant sells chicken nuggets in boxes of 6, 9 or 20.

Is it possible to purchase exactly 15 chicken nuggets?

Is it possible to purchase exactly 17 chicken nuggets?

How would you purchase exactly 53 chicken nuggets?

PROBLEM:

What is the largest number of chicken nuggets that cannot be purchased exactly?

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EGG TIMER

**SETUP:**

You have a 4-minute egg timer and a 7-minute egg timer.

How could you use the timers to time 11 minutes?

How could you use the timers to time 3 minutes?

PROBLEM:

How do you make a 9-minute egg using the two timers?

SOURCE: PETERLIEDAHL.COM/TEACHERS/GOOD-PROBLEM

HEROES AND VILLAINS

**SETUP:**

On an island there are two types of inhabitants: Heroes who always tell the truth and Villains who always lie. Four inhabitants are seated around a table. When each is asked "Are you a Hero or a Villain?", all four reply "Hero". When asked "Is the person on your right a Hero or a Villain?", all four reply "Villain".

PROBLEM: How many villains are present?

SOURCE: UNIVERSITY OF WATERLOO CEMC 2007 CAYLEY CONTEST, #17

HOW MANY 7's



PROBLEM:

If you write out the numbers from 1 to 1000, how many times will you write the number 7?

SOURCE: PETERLIJEDAHL.COM/TEACHERS/GOOD-PROBLEM

WATER JUGS



SETUP:

A 3-gallon jug and a 5-gallon jug are resting beside a water fountain.

PROBLEM:

How can you use the two jugs to measure exactly 4 gallons of water?

SOURCE: *DIE HARD WITH A VENGEANCE* MOVIE

VIDEO: https://www.youtube.com/watch?v=BVtQNK_ZUJg

1001 LOONIES



SETUP:

There are 1001 loonies lined up on a table. I come along and replace every second coin with a nickel. Then I replace every third coin with a dime. Finally, I replace every fourth coin with a quarter.

PROBLEM:

How much money is on the table?

SOURCE: *BCAMT WEEKLY MATH TASKS*

TOASTER



SETUP:

Three slices of bread are to be toasted under a grill. The grill can hold two slices at once, but only one side is toasted at a time. It takes 30 seconds to toast one side of a piece of bread, 5 seconds to put a piece in or take a piece out and 3 seconds to turn a piece over.

PROBLEM:

What is the shortest time in which the three slices can be toasted?

SOURCE: *THINKING MATHEMATICALLY* BY JOHN MASON



Links to more problems:

[BCAMT Weekly Math Tasks](#)

[Peter Liljedahl's Good Problems](#)

[CEMC Problems of the Week](#)