THE GUMBALL HEIST

The Gumball Heist

What's the point of this task?

This task requires students to solve a fraction problem which is presented as a story with clues. It requries students to work with changing wholes and a set model of fractions.

Questions to facilitate the learning

▌ What are the key pieces of information or clues?

▌ Where should we start?

Curriculum connections

This task facilitates the key mathematical processes of problem solving, representing, reasoning, proving and communicating.

A fraction is not meaningful without knowing what the whole is.

Scaffolding the learning

Start backwards. If Harold put $\frac{1}{3}$ in the safe and gave 14 to his kids, how many did Harold rescue? If this is half of what was left, then what was the total of what was left? Next work out what fraction of the whole amount disappeared.

Extending the learning

Have students work in groups or pairs and spend some time working out how to get started. Encourage students to draw freely and compare different ideas. Have groups share different ways of obtaining the answer.

Solution

Answer: 84

If Harold put $\frac{1}{3}$ in the safe and gave 14 to his kids, then Harold rescued 21 gumballs which was half of what was left. We know that this is half because the bandit took off with the other half of the remaining gumballs. So, the total of what's left is 42 gumballs.

Looking at what disappeared we know that $\frac{1}{3}$ went down the drain and $\frac{1}{6}$ rolled under the vat. $\frac{1}{3} + \frac{1}{6} = \frac{1}{2}$.

The other half is what was left and we worked this out to be 42. So Harold must have had 84 to begin with.

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Harold had been working for months to create magical gumballs that turn your tongue into colours of the rainbow. He was just admiring his first successful batch when a rival confectioner dashed into his laboratory and stole the lot!

As the bandit fled, he tripped and all of the precious gumballs scattered all over the laboratory floor. $\frac{1}{3}$ of the gumballs rolled down the drain. $\frac{1}{6}$ disappeared under the sugar spinning vat. Poor old Harold. He scrambled to pick up as many as he could but the bandit took off with half that remained!

Harold counted the magical gumballs he managed to save.

He put $\frac{1}{3}$ of these carefully away in a locked safe.

He took the 14 remaining gumballs home to try out on his kids.

How many gumballs did Harold have to begin with? Show your working and explain your reasoning.

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