



Neelumbara on a Full Moon Night

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Level 3



A long time ago, in the village of Pakshipur, situated at the edge of a forest, lived a young boy called Baku. He loved counting things.



After school, he helped his mother weigh vegetables and count money.

One evening, Baku saw a pair of colourful birds. They laughed and took off. Baku followed them.

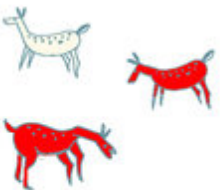






They flew through a cave and into the forest. Everything here was so different, just like the birds. Were those blue monkeys whistling? And the pink elephants? They seemed to be humming!

Baku didn't see the sun go down. Soon, it got dark, and he was lost.





A short distance away, he saw a roaring fire.

A woman was pacing up and down. Her name was Midu. Baku went up to her and asked softly, "Wha...what is the matter?"





“My ten-year-old daughter Koya came down with a rare illness six months ago. She hasn’t been able to sit up since then!”

“Is there no cure?” asked Baku.

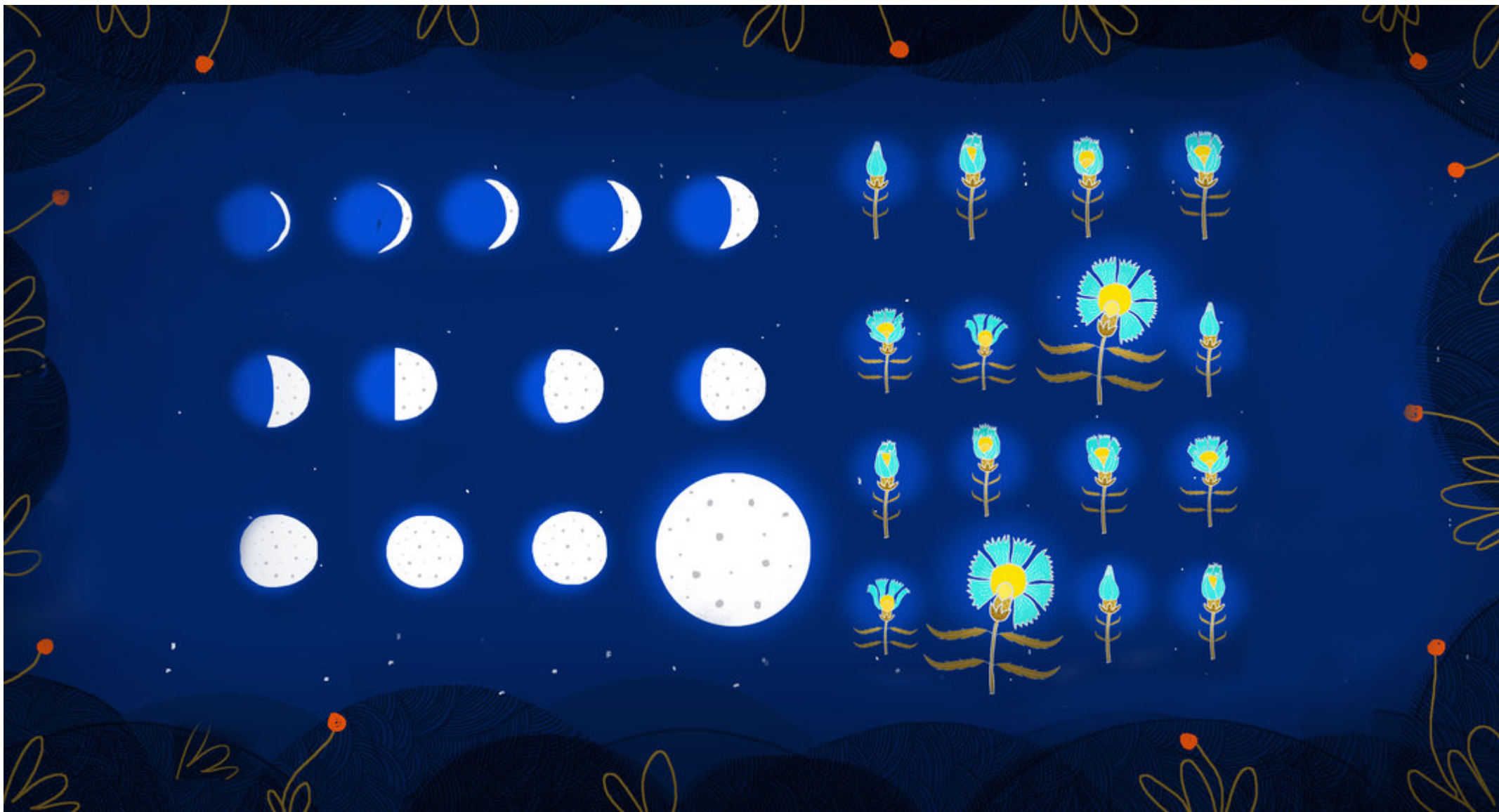
“Only one—the nectar of the Neelumbara flower,” she said. “It blooms every seven days. But only the nectar collected on a full moon night can cure her. In the past six months, the flower hasn’t bloomed even once on a full moon night. Koya is getting weaker every day!”





Baku's mind raced. "Please don't cry! The flower will bloom on a full moon night...hmmm...in nine days,"he said confidently.

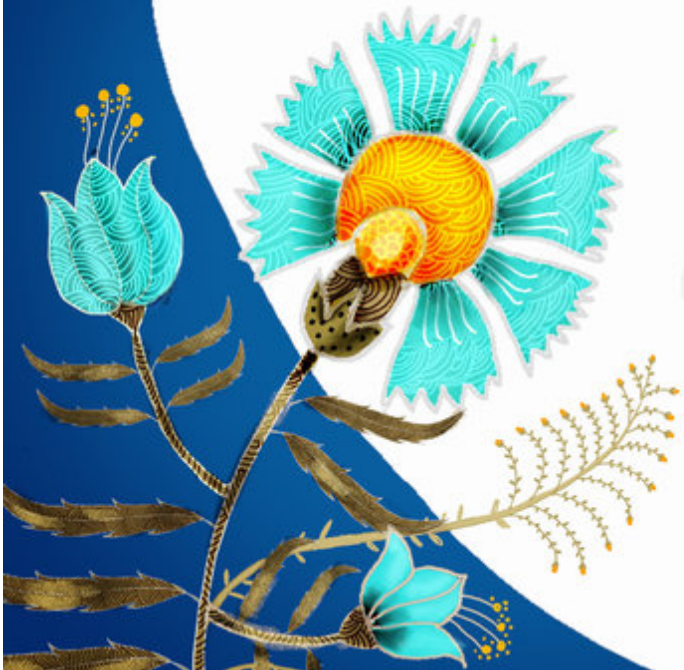
"How can you be sure?" asked Midu.



Baku had worked it out. The full moon shone every thirty days and the flower bloomed every seven days. This meant it would bloom on a full moon night once every 210 days - roughly seven months.

Six months had gone by.
The Neelumbara would bloom on the next full moon night.
That was only nine days away.

Midu thanked Baku and led him back to his village.



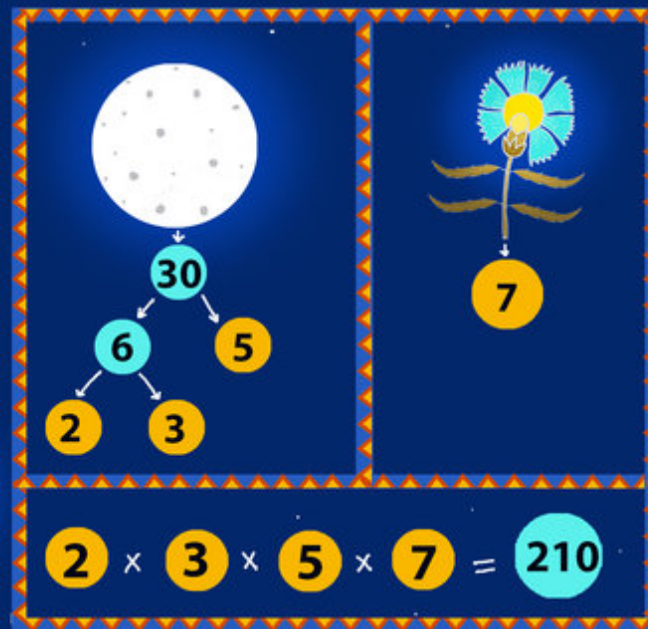


Three weeks later, when Baku was picking jamuns, he saw Midu again. She came running and hugged him.



“Baku! Look, that’s my Koya!” she said. “The flower bloomed on the night you said it would. The nectar worked its magic!”

Koya was cured. Baku was very pleased. All was well in Midu’s world.



How did Baku work it out?

Baku knew the Neelumbara flower bloomed once every 7 days and that the full moon appeared every 30 days*. How did he know that the blooming of the flower would coincide with the full moon?

Mathematics! Actually, something called Lowest Common Multiple (LCM).

What is LCM?

The LCM of two numbers—let's call them **a** and **b**—is the smallest number which is a common multiple of both **a** and **b**.

**The lunar cycle—that is one full moon to the next—can last anywhere between 28 and 31 days. The average full moon cycle is 29.53 days, which is rounded off to 30 days.*

How do you find the LCM?

To find the LCM of 3 and 5:

Write the multiples of 3: 3, 6, 9, 12, 15, 18, 21, 24, 27, 30, 33...

Write the multiples of 5: 5, 10, 15, 20, 25, 30, 35...

The common multiples are 15, 30...

The least or smallest common multiple is 15!

LCM of 3 and 5 is 15.



Prime factorization method

We usually use this method to find the LCM of larger numbers. This means that we list out each number as a product of prime factors.

Let's find the LCM of 20 and 30.

First, we write each of the numbers as a product of its prime factors.

$$20 = 2 \times 2 \times 5$$

$$30 = 2 \times 3 \times 5$$

Now we multiply all the factors**.

$$2 \times 2 \times 3 \times 5 = 60$$

How often does the Neelumbara bloom on a full moon night?

The answer to this is the LCM of 7 and 30.

$$7 = 7$$

$$30 = 2 \times 3 \times 5$$

$$\text{LCM} = 2 \times 3 \times 5 \times 7 = 210$$

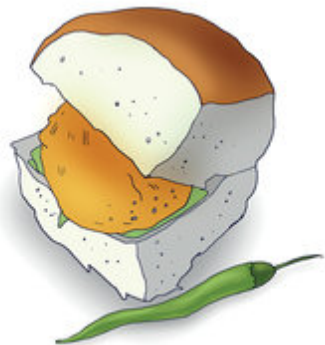
So, the Neelumbara blooms on a full moon night once in 210 days.

***If a factor is common to both lists, we need to take it only once for each pair, unless it occurs more than once in the same list. Here, 2 is common to one pair, but it occurs twice in the list for 20.*

Imagine you have planned to serve spicy vada-pav from the neighbourhood snack shop. You go to the shop and realise that vadas come in packets of 3 each and pavs come in packets of 4 each. What is the minimum number of packets you have to buy of each so that you can pair vadas and pavs without either remaining extra?

(Hint: LCM will help you here.)

Have a great party!





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Neelumbera on a Full Moon Night

(English)

Young Baku loves counting and watching birds. One day, he wanders into a magical forest with colourful trees. There is trouble here that can only be solved by the mystical Neelumbera flower. Could Baku's love for maths come in handy?

This is a Level 3 book for children who are ready to read on their own.



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