

Mathematics Mystery

Happy Birthday to the triplets!

Once upon a time, in a city called Denver, lived Tracy, John and Jack. They were triplets and lived with their family. The triplets were very smart, especially in mathematics. They were 9 years old and were going to become 10 on the 17th of December.

They were not identical triplets. Jack was tall and had black hair, while Tracy and John were shorter and had blonde hair. John was the naughtiest of them all and loved to play pranks on everyone. Tracy was the serious student. Her favourite activity was reading. Jack was the sensible one and was the only one who could control John. Not even their parents had that skill!! They loved each other very much and could often read each other's minds.

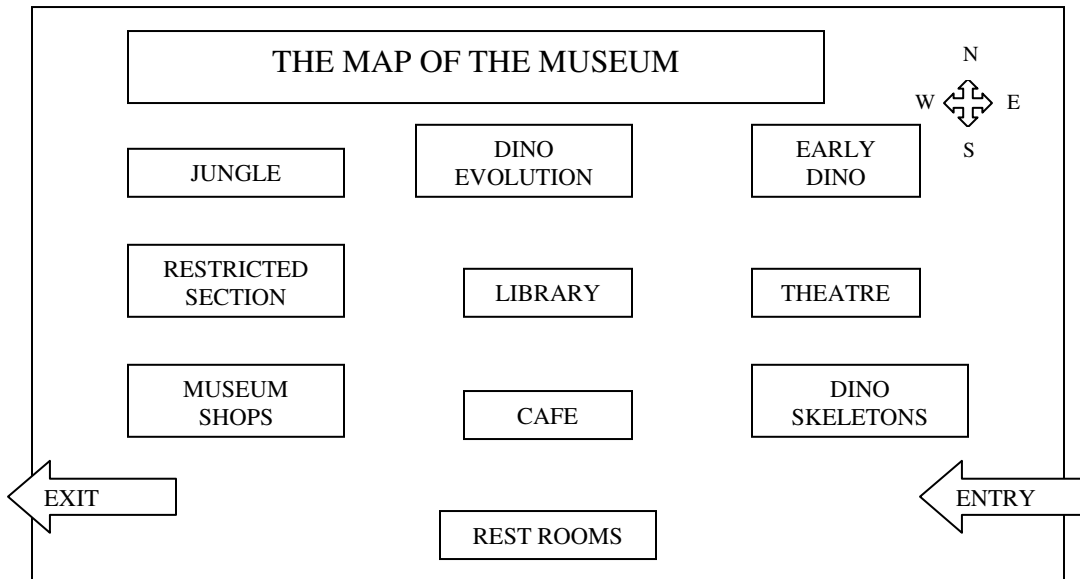
They were really excited about their birthday since their mother had promised them a special treat – A trip to the Dinosaur Museum! They had studied about Dinosaurs last year in school and were looking forward to spending the entire day on the 17th at the Museum. The tickets to the museum were very expensive and so they got to go there very rarely.

Since this trip was planned, they had their birthday party with friends on the 15th. On the day of their birthday party they got many gifts and were very happy. They got toys, clothes and books. Basically they were good kids and so they happily shared all their gifts between themselves. Infact they considered themselves to be quite lucky – since between the three of them, they had more toys and books to play with than any of their friends.

On 17th they woke up very early. Their parents wished them and each of them got a wonderful gift from them. John got a compass for his birthday. He had wanted one for a long time since he always got confused about direction and got lost! Tracy got a magnifying glass and Jack got a flashlight. These gifts were very special since the triplets liked going hiking and all these gifts would be very useful on their hikes and camping trips.

After that they read the newspaper like everyday. That morning the headlines had some shocking news! They read that a diamond was stolen from a bank. It was a very large diamond. They even had a picture of the stolen diamond. They wondered where it could be and who the thief could be.

Later, wearing new clothes, they set off for the museum. When they reached they bought their tickets. Along with the tickets, each person was given a map and a history of the museum. The map provided a detailed layout of the museum.



In the history of the museum there was a lot of information about the founder of the museum. A man named Peter Brown started this museum 100 years ago. There was an interesting fact mentioned in the history. Peter Brown had found a diamond stuck to a

dinosaur skeleton. He had taken it out and hidden it in the museum. He had also left a trail of clues so that if anything happened to him, others at the museum could keep the diamond safe. However, around 20 years ago the museum curator had found the diamond and taken it to the bank to keep it safe. Also the trail of clues was lost and no one knew where the diamond used to be hidden. After reading this, they wondered if this could be the same diamond that had been stolen from the bank! How exciting it was – a mystery!!

The Mysterious Book

Once they entered the museum, they walked here and there collecting more and more information by going in the different rooms.

In the dinosaur skeletons section they found out how many bones there are in the skeleton of a dinosaur – several hundred individual bones! In the model, each bone was numbered with a sign. The biggest (by weight) single dinosaur bone ever found, (one of the backbones of *Argentinosaurus*) was one backbone five feet by five feet and more than one ton in fossil weight. This was there on the model in the dinosaur skeleton section. This backbone had the number 17 on it.

In the jungle section they saw many robot dinosaurs, which had a sign for each of them with information on them. These dinosaurs moved and roared like real dinosaurs. It was very exciting and frightening.

After that they went to the theatre where they watched a movie on where dinosaurs lived and what they eat. They learned that dinosaurs lived many thousands of years ago in caves and jungles. They ate lizards, turtles, eggs or early mammals. The movie was a 3-D movie and each of them had to wear special glasses to see it.

In the early dinosaur section they found out how many years ago the first dinosaurs had come. They found out that dinosaurs had first come to earth 230 million years ago.

In the dinosaur evolution section, they found out how the first dinosaur looked and how the last dinosaur looked. Dinosaurs became extinct 65 million years ago.

After all the roaming around, they were tired. So they decided to go to the cafeteria and eat some lunch. They decided on eating chicken burgers with French fries and coke! After that they had bubblegum flavoured ice cream for dessert. “This is yummy”, said

John. “But now I am sleepy”, said Tracy. “Lets go to the library and read some books and relax”, said Jack.

So they went into the library. In the library they found all kinds of information like which was the fastest dinosaur. The smartest dinosaur was called “Troodon”. This was the best part of the day for Tracy since she loved reading. They found out that the library had the largest collection of books on dinosaurs in the world – 28354 to be exact.

Just as they were about to leave the library, they noticed one of the books lying on the floor. Tracy picked it up to put it back when a piece of folded paper fell out of the book. She put the book back and picked up the piece of paper. Tracy read out loud “20 w and 20 s would get one to the dino toys! Look for section 8 X 3”. “Hey boys, come take a look at this. I wonder what it is. It looks like a code or a clue”, said Tracy.

John and Jack came running to where Tracy was. They read the lines on the paper again. “What could this mean?” said Jack. “I have no idea,” said John. They thought hard about the piece of paper. Suddenly, Tracy said, “I think this is the first clue on the trail to where the diamond was hidden”.

“Do you think?” said Jack. “Then lets try and solve it,” said John excitedly. “First we need to find out what 20 w and 20 s means”, said Jack. They walked out of the library when Tracy said, “Maybe 20 w could mean that we have to go 20 tiles west and 20 s could mean that we have to go 20 tiles south”. They followed Tracy’s plan and went 20 tiles west and then 20 tiles south. At that point they reached the museum shop. The shop had toys, books, torches and T-shirts! “Whoa, look at this torch. It is cool. When you switch on the torch, the light shines in the shape of a dinosaur!” said John.

“Lets get back to the clue”, reminded Jack. “All right. The paper said look for section 8 X 3”, said John. “I wonder what is 8 X 3?” said Jack. “You are silly Jack. 8 X 3 is 24. Remember we learned that in school in 2nd grade?” said Tracy. “Ok, but what is 24?” said John. “Look the shelves are all numbered. Maybe there is a shelf # 24”, said Tracy. “Lets look for shelf #24,”said Jack. They looked for shelf # 24 and finally found it. Guess

what the name of the shelf was? DINO TOYS!!! They moved the toys on the shelf and found something interesting at the back of the shelf! Stuck with tape to the back of the shelf was a piece of paper with the second clue!! “Yippee we found it! This really is a trail! I think this is Peter Brown’s trail that is mentioned in the history of the museum!” said John.

Along the Trail – Clue # 3

3	51	5
2	61	8
6	X	4
5	01	2
7	12	3

Find X in 40 n and 20 e

“We know what 40 n and 20 e means,” said Jack. “But first we need to find out how to solve the riddle”, said Tracy. “You are right Tracy. Lets try and solve it. These all look like random numbers. What could they mean?” said John. “Lets each of us look at it carefully and try and solve the riddle,” said Tracy.

They all stared at the paper trying hard to solve the riddle. “It’s not plus nor minus nor multiplication,” said Jack thinking aloud. “Wait! It is multiplication but the answers are the other way round”, said Tracy. “Look Tracy’s right, on the first row there is 3 in the left column and 5 in the right column, if you multiply 3 and 5 the answer is 15 and if you make 15 the other way round you get 51 and in the middle column there is 51”, said John. “The same pattern is there in all of the other rows as well, so, the X will be 42” said Jack.

“That was good thinking Tracy!” said John. “Lets see where the clue leads us to”, said Jack. They went 40 tiles north and then 20 tiles east and found themselves in Dino Evolution. Once there, they wondered what ‘42’ was. “Look, the exhibits are all numbered. Maybe exhibit number 42 can be where the next clue is,” said Tracy looking at all the exhibits. “Could be” said Jack.

“I’m hungry,” said John. “Are you mad John, we just had lunch half an hour ago and besides we’re in a mystery” said Jack. “Ok, ok we won’t eat but I got three candies for us. If you want to eat it then I can give you one each because I’m eating one now,” said John as he put the candy in his mouth.

The others laughed and took the candy from John. “Thanks John. Hope this makes us think better!” said Jack.

They all rushed to exhibit # 42. It was a model of a dinosaur’s nest. There was one huge egg placed in the nest. It looked very real. As they looked near the nest, they saw small glimpses of white, which turned out to be the paper with the next clue.

Clue # 4

16		14
	13	
12		

Each row and each column should equal $3T + 9U$. Add all missing numbers to find me.
After that go 20 s and 20 e.

“What could this mean?” said John. “ $3T + 9U$ is the strangest thing” said Jack. “Maybe $3T$ can mean 3 tens and $9U$ can mean 9 units” said Tracy. “ $3 \text{ tens} + 9 \text{ units} = 39$ ” said John. “Let’s try adding the numbers in the first row and see what we get,” said Tracy. “So $16 + 14 = 30$ ” said Jack. “Oh I see! If $16+14=30$, we have to put 9 in the missing box so that the total is 39”, said Tracy. “So that would mean that the rest of the numbers are...”, said Tracy as she scribbled in the missing numbers.

16	9	14
11	13	15
12	17	10

“Finally, we have to add all the missing numbers. That means $9+11+15+17=52$ ”, said Jack scribbling the calculation on the piece of paper. “All right then we have to find a 52 in 20 S and 20 E”, said John. They took a glance at the map and Jack said “that would get us to the Theater”! “So what can 52 in the theater be?” said Tracy.

They all set out for the theater and looked for something that had 52 on it. Suddenly John exclaimed, “I got it! It is seat number 52!!” They rushed to seat 52 and taped under the seat they found the 4th clue! “Oh my god, this is a real mystery! It is so exciting,” said Tracy.

“Take the number of books in the library. Then halve it. Then add 3 to the answer. Then halve the answer. Then halve again. Add first 2 digits and add last 2 digits. Add both the answers. Look for me near this bone in 20s” read Jack.

“Tracy, do you remember how many books there are in the library?” asked John. She looked at the notes that she had been making in her diary and said, “Yes, there are 28,354 books in this library”, she said.

“Is this some kind of trick question? This is a huge number and we have to half the number so many times that it looks like the answer will be minus something” said John.

“Maybe”, said Tracy. Jack started the calculations at once. He scribbled as he did the calculations:

“28354 divided by 2 equals ummmm 14177”.

$$\frac{28354}{2} = 14177$$

“Then, 14177 plus 3 equals 14180”.

$$14177 + 3 = 14180$$

“14180 divided by 2 equals ummmm 7090”.

$$\frac{14180}{2} = 7090$$

“7090 divided by 2 equals ummmm 3545”.

$$\frac{7090}{2} = 3545$$

“Then 3 plus 5 equals 8 and 4 plus 5 equals 9”, said John. “Then 8 plus 9 equals 17. Now that was easy!”

“There, we finally got the answer,” said Jack. “20 s will take us to dino skeletons,” said Tracy looking at the map. “I know what 17 is. Remember we read about the largest bone? That was #17!” said Tracy

“But we looked at it, and there was no clue on it”, said John. “It must be well hidden – stuck smoothly on the bone”, said Jack. “Lets go look again”, said Tracy. They all set off for Dino Skeletons and looked for bone #17. “I found it” said John looking at a big bone. Tracy and Jack hurried towards John. Behind the bone was the 5th clue.

Clue # 5

“I am 20 25 17 1 14 14 15 18 1 21 17 21 18 17 5 24 and I move happily in the jungle”, read Tracy.

“We have to go to the jungle and solve this tough riddle,” said Jack. “I wonder what math we are going to have to do now. Can’t see any pattern in these numbers”, said Tracy.

“Hey I think this is a clue where the numbers will make a word. Remember, in school we learnt the numbers that stand for different letters?” said John.

“Yes lets see if that code works here. So 20 is T, 25 is Y and it keeps going on,” said Jack. He wrote the alphabets next to the numbers and came up with the answer.

20 25 17 1 14 14 15 18 1 21 17 21 18 17 5 24
T Y R A N N O S A U R U S R E X

“Tyrannosaurus Rex!! Yes, I got it,” said Tracy “We have to look for the Tyrannosaurus Rex robot in the jungle,” said John.

They all rushed to the jungle and looked for the Tyrannosaurus Rex. “I found it” said Tracy. The others hurried to where Tracy was standing. She was pointing at a shiny thing stuck on the Tyrannosaurus Rex. It was the stolen diamond.

“I am going to call the police,” said Jack running out of the room. Just then the museum curator walked into the room.

“We found the stolen diamond on one of the robot dinosaurs” said Tracy. “We will show it to you” said John. But the curator seemed to know where the diamond was because he ran to the Tyrannosaurus Rex Robot and looked at where the diamond was.

“How did you know where the diamond is, we never told you where it is?” said Tracy. The curator then got very angry and realized that he had made a mistake. He suddenly grabbed Tracy and John and dragged them from the Jungle section to the restricted section and locked them in there.

Then the curator ran back to the Jungle and went to the Tyrannosaurus Rex Robot. He found the switch on the robot and turned it off so that he could reach the diamond without the robot attacking him. He was about to pick the diamond up when Jack came with the police. The police saw him picking up the diamond.

The police caught him and asked, “What are you doing with this diamond?” “I am the one who had stolen the diamond, I am the one who hid the diamond here. I did not know

that where I hid the diamond was where Peter Brown's trail of clues led," said the curator. "I am so unlucky", he said.

"You are under arrest," said the police. They handcuffed the curator and started leading him out of the Jungle section. As the police began to leave, Jack wondered where Tracy and John were.

"Wait! Come back here. My brother and sister are missing," said Jack. "Where have you kept them?" he asked worriedly.

"I locked them in the restricted section" said the curator. "Can you give me the keys so that I can get them out?" asked Jack. The curator gave him the keys and went with the police. Jack ran to the restricted section and opened the lock.

Then Tracy and John told Jack what had happened when Tracy and John were locked in the room and Jack told Tracy and John what had happened when he went to call the police.

A few days later a new curator was appointed by the museum. The new curator gave the triplets a reward – Free Lifetime membership tickets to the museum!

The next morning their parents woke them up very excitedly. "What is it mom?" said John sleepily. "I have a surprise for you all" said their mom. They all rushed to the living room. "Look what is on the newspaper!" said their mom. They ran to the newspaper and gasped. On the front page, there was their photo smiling at themselves. "We are very proud of you three," said their father.

They became heroes in their school and the teachers (specially their math teacher) were very proud of them. "I guess it does pay to be attentive in class!" said John.

Each birthday they would visit the museum and have a good laugh at the mystery they had solved.