Sciensation Society,
SNC134, Santoshimanagar, Secunderabad-500056

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Feynman1: Counting

Why did we invent counting/numbers? Where do we use counting?

Activity1: Find a few objects in the classroom and count them. Place a few cards on a table in Room1 and ask your friend to replicate the same number of cards in Room2

	Collection1	Collection2	Collection3	Collection4	Collection5
Object Name					
Count in Room1					
Count in Room2					
Do they match?					

Activity2: Place a pattern of card and ask your friend to replicate it in Room2? Draw the patterns in Room1 and Room2. **Remark:** Numbers don't exist for real, they are ideas/concepts.

Room1	Room2

Activity3: Can you show zero cards? Can you show one card? Tear it into two cards, now is it one card or two cards? What is one?

Zero Cards	One Card	After being torn

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Activity4: Two is an idea that two ones can be kept two together. An idea needs a representation- how else can you communicate your idea to a friend? Try communicating one such idea with a friend and come up with a representation.

Name	One (1)	Two(2)	Three(3)	Four(4)	Five(5)
Diagram					
Tally Marks					
Any other Representation					

Activity5: Define any one unit using a collection of cards and then replicate 5 units, 6 units and 7units. Can you see how 5 is just an idea? We define an entity to be one unit and then use it as a reference for counting. We need a standard system, just like shoe sizes or shirt sizes.

Pattern	5 units	6units	7units

Activity6: Add two collections of cards. Subtract a few cards from the collection.

	Collection1	Collection2	Total (after addition)	Cards Removed	Cards Remaining
1					
2					
3					
4					
5					

Activity7: Think of any five situations where addition is used

	Incident1	Incident2	Incident3	Incident4	Incident5
Object Name					
Why use addition?					

Activity8: Think of any five situations where subtraction is used

	Incident1	Incident2	Incident3	Incident4	Incident5
Object Name					
Why use addition?					

Activity9: Think of any three situations where a combination of addition and subtraction is used

Objects			
Situation			
Calculation			
Explanation			

Activity10: Count a collection of cards by placing them in groups.

Collection1	Group of 5	Group of 4	Group of 3	Group of 10	Group of 6
Number of Groups					
Remaining Cards					
Total number of Cards					
Collection2	Group of 5	Group of 4	Group of 3	Group of 10	Group of 6
Number of Groups					
Remaining Cards					
Total number of Cards					

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Feynman2: Place Values

Activity11: Pack cards into boxes

	Loose pieces	Box of 10	Box of 100	Total
Collection1				
Collection2				
Colelction3				
Collection4				
Collection5				

Activity12: Adding Collections

	Boxes of 100		Boxes of 10		Loose Pieces		Total	Total, using school method
Problem1								
Problem2								
Problem3								
Problem4								
Problem5								

Question for Discussion13: Why do you carry forward numbers to the higher places? When you add 57 to 97, why is the answer 154? Why do you carry forward 1 to tens place, why do carry forward 1 to hundreds place?

Activity14: Subtracting Collections

	Boxes of 100		Boxes of 10		Loose Pieces		Total	Total, using school method
Problem1								
Problem2								
Problem3								
Problem4								
Problem5								

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Question for Discussion15: Why do you borrow numbers from the higher places? When subtract 49 from 97, why does 9 become 19? Why does 9 become 8? Can you give one more example?

Activity16: Think of situations where tens place and hundreds place are used

	Single Digit Answers	Two digit answers	Three digit answers
Situation1			
Situation2			
Situation3			
Situation4			
Situation5			

Activity17: If one group of cards consists of 4 cards, one mega group consists of 4 groups, one omega group consists of 4 mega groups, organize the following quantity on a table

	Omega	Mega	Group	Loose Cards	Total
Collection1					
Collection2					
Collection3					
Collection4					
Collection5					

Activity18: If ten chocolates make one small box, ten small boxes make one carton, ten cartons are placed in one room, ten rooms comprise one house, ten houses one gated community, ten communities make one colony and ten colonies make one city, fill the number of chocolates in each unit.

Small Box		Carton		Room	
House		Community		Colony	
City		State		Country	

Activity19: Add the following numbers using dot cards

	Thousand Dot Cards		Hundred Dot Cards		Ten Dot Cards		Dot Cards		Total Dots	School Method
P1										
P2										
P3										
P4										
P5										

Did you perform any carry forward? Explain it here.

Activity20: Subtract the following numbers using dot cards

	Thousand Dot Cards		Hundred Dot Cards		Ten Dot Cards		Dot Cards		Total Dots	School Method
P1										
P2										
P3										
P4										
P5										

Did you borrow cards? Mention it here.

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Feynman3: Multiplication

Activity1: Fill the following sheets

	4	6	7	8	9
2+ 2 = 4					
4 + 2 = 6					
6 + 2 = 8					
8 + 2 = 10					
10 + 2 = 12					
12 + 2 = 14					
14 + 2 = 16					
16 + 2 = 18					
18 + 2 = 20					

Activity2: Calculate the number of cards using repeated addition as well as multiplication

	Repeated Addition	Multiplication	Do they match?	Which is easy?
Situation1				
Situation2				
Situation3				
Situation4				
Situation5				

Activity3: Think of situations where repeated addition is used? Where do you have to add multiple groups?

Situation					
Answer					

Activity4: Find the sum

2 + 3 +3 +3 +3 +3 +3 +3 +3 +3 +3 +3 +3 +3 +3	7 + 9 +9 +9 +9 +9 +9 +9 +9 +9 +9 +9 +9 + 9 + 7	8 + 8 + 8 + 8 + 8 8 + 6 + 6 +6 +6 +6+6+6 +6 +6 +6	9 + 9 +9 + 9 + 9 + 9 + 6 +6 +6 +6 +6 + 5 +5 +5 +5	3+7+9+3+7+9+3+ 3+7+9+3+7+9+3+ 3+7+9+3+7+9+3

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Activity5: Convert the following units, using both addition and multiplication

	Units	Using Addition	Using Multiplication
1000 g = 1 Kg	5 Kg		
	7 Kg		
1000 mg = 1 g	7 g		
	8 g		
1000 Kg = 1 ton	6 tons		
	5 tons		
100cm = 1m	4 m		
	9 m		
10mm = 1cm	8 cm		
	7 cm		

Activity6: Conversion of units

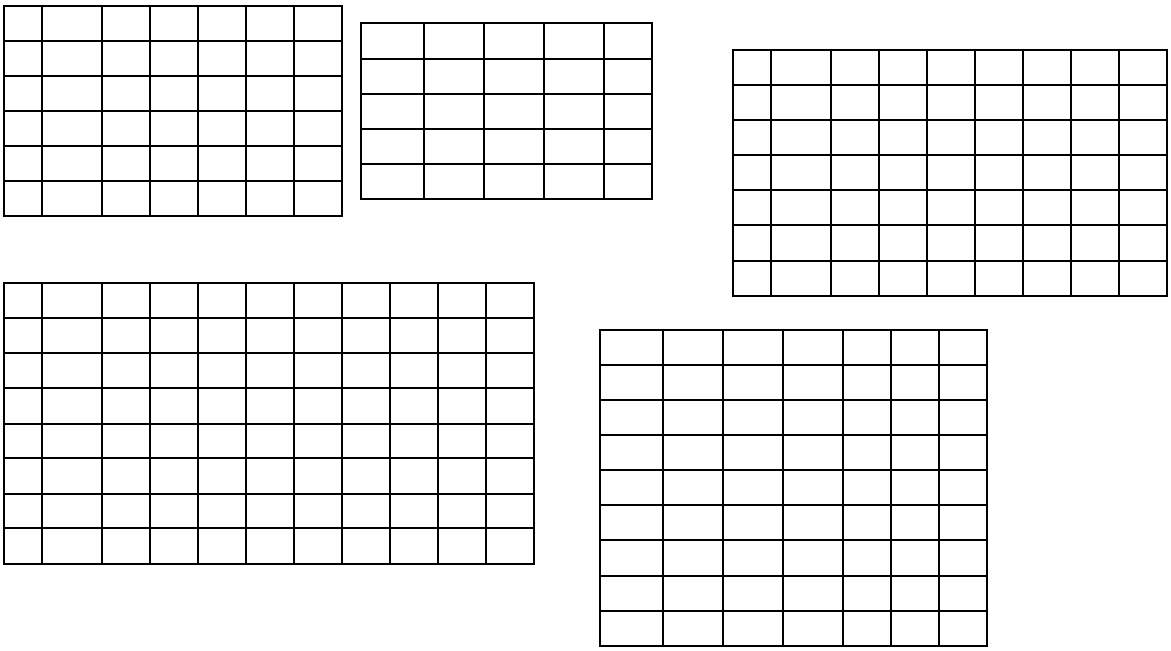
Kg	g	mg	Tons	kg	g	Mg
7 kg			7 tons			
8 kg			8 tons			
6 kg			6 tons			
9 kg			9 tons			
4 kg			4 tons			

Activity7: Applications of Multiplication- Speed, Distance, Time

	5m	10m	15m	20m	25m
Expected Time Taken					
Actual Time Taken					
	5m	10m	15m	20m	25m
Expected Time Taken					
Actual Time Taken					
	5m	10m	15m	20m	25m
Expected Time Taken					
Actual Time Taken					

Activity8: Calculation of Areas

Count the number of squares and the area if the area of one square is 1squnit



Activity9: Calculate the number of

Days in 13 weeks	Minutes in One day	Bananas in 26 dozens	Convert 10$ to rupees	Convert 3GB to KB

Activity10: Find the number of root nodes of the tree

	Tree1	Tree2	Tree3	Tree4	Tree5
Depth	3	4	4	5	6
Breadth	2	2	3	4	5
No of root nodes					