

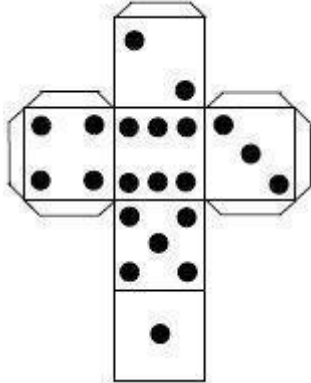
JUMPING MATH (ALL AGES)

Ages 4 to 7 (Level 1)

Description:	Learner will design their own number line game to get a better grasp of number sense and conduct simple addition and subtraction functions
Leading question:	Can you make your own number line?
Age group:	4 - 7 years old
Subjects:	Math Art and Design Physical Activity
Total time required:	6 hours total over 5 days
Self-guided / Supervised activity:	Supervision by parents / guardians
Resources required:	Paint, Paper, Scissors, Cardboard

Day	Time	Activity and Description
1	10 minutes 50 minutes	<p>Learners will revise counting the numbers from 0 – 20</p> <p>Learners will design their own number line: They will paint, write and cut out each of the numbers from 0 – 20 and stick them in order on the ground</p> <p>The even numbers will be in one colour and the odd numbers will be in another colour</p> <p>Input: 2 – 4 – 6 – 8 – 10 – 12 – 14 – 16 – 18 – 20 are even numbers and the odd numbers of 1 – 3 – 5 – 7- 9 – 11 – 13 – 15 – 17 – 19</p> <p>TIP: If you have tiles at home – please ask them to place a number in each tile or measure equal distances between the numbers being stuck.</p>
2	30 minutes	<ul style="list-style-type: none"> Learners will make their own dice based on their understanding of a cube. <p>Input: A cube is a three-dimensional solid object bounded by six square faces, with three meeting at each vertex.</p> <ul style="list-style-type: none"> Learners can identify other cubes in their home (e.g. ice cubes, sugar cubes, square tissue boxes etc.) and write the description of a cube and draw the same Learners will identify the different squares in the cube and count and draw these with equal length of 4 sides

- Learners will also identify rectangles at home and draw these to see the difference between the square and the rectangle
- Learners can design and draw the below to make their own dice, the lines will be folded and stuck together in the shape of a cube



Alternatively,


- Learners will design the spinning wheel for the game

Input: A spinning wheel is a circle or round and looks a little like a clock. Like the hands of a clock, we have to design a hand or arrow that we can spin and will land on one choice

- Learners can use any round object to trace out a large circle. They will then make 6 sections to the circle

TIP: Please see below as a reference and learners can understand imagining the circle is one big pizza or cake and you had to cut 6 pieces of the pizza)

- Learners will now create the spinning arrow – which could be a paper clip that is inserted in a paper pin that is inserted into the center of the circle as below

		 <p>Alternatively, the learners can cut out an arrow on cardboard or thick paper and then insert this into the center of the circle using an opened paper clip or paper pin.</p> <p>Learners will now write all the numbers down and cut them into small cards.</p> <p>Learners will also write the main mathematical functions on separate small cards (+ addition / - subtraction / greater than / less than)</p>
3	<p>45 minutes</p> <p>15 mins</p>	<p>All the preparations are now ready to play the addition game!</p> <p>Rules: Learners will throw the dice or spin the spinner and based on the number that comes, they have to jump that number up. Learner will start from 0 (e.g. if the dice is 3, they will jump up to number 3, then throw the dice and if it is 5 – they will jump up to 8 (3+5))</p> <p>Learners can also come up with other rules. Examples:</p> <ul style="list-style-type: none"> • If you land on an even number – you have to jump forward 2 steps • If you land on an odd number – you have to jump forward 3 steps <p>Learner will also complete a numerical representation by writing down the sums that they are practicing e.g. $3+5=8$</p> <p>Family members will pick up a number card. If the number the learner is standing on is greater than the number the family picked up they can ask their family member to perform an exercise of their choice e.g. jumping jacks etc.</p> <p>Example: Family member picks up a number 4, if the learner happens to be standing on 6, since 6 is greater than 4 - the learner gives the family members an exercise to do</p> <p>Learners will represent this in a numerical function as 6 greater than 4</p>

4	45 minutes	<p>All the preparations are now ready to play the subtraction game!</p> <p>Rules: Learner will throw the dice or spin the spinner and based on the number that comes, they have to jump down that number. Learner will start from 20 (e.g. if the dice is 3, they will jump down to 17 (20-3), then throw the dice and if it is 5 they will jump down to 12 (17-5)</p> <p>Learners can also come up with other rules. Examples:</p> <ul style="list-style-type: none"> • If you land on an even number – you have to jump forward 2 steps • If you land on an odd number – you have to jump forward 3 steps <p>Learner will also complete a numerical representation by writing down the sums that they are practicing e.g. $20 - 3 = 17$</p>
	15 mins	<p>Family members will pick up a number card. If the number the learner is standing on is less than the number the family picked up they can ask their family member to perform an exercise of their choice e.g. jumping jacks etc.</p> <p>Example: Family member picks up a number 13, if the learner happens to be standing on 8, since 8 is less than 13 - the learner gives the family members an exercise to do</p> <p>Learners will represent this numerically as 8 is less than 13</p>
5	45 minutes	<ul style="list-style-type: none"> • Play the game with all the four numerical functions • Family members can pick up a function card and a number card. Learners will then perform the operation e.g. + 6, - 3, is the number greater than 2 etc. • Learners will write down all the mathematical functions numerically • If you land on an even number – you have to jump that many times • If you land on an odd number – you have to hop that many times
Assessment Criteria:		<ul style="list-style-type: none"> - Understanding of shapes and ability to identify them - Design of the dice - Clarity of the painting and formation of the numbers and numerical representation of the sums - Deeper number sense

Learning outcomes:	<ul style="list-style-type: none"> - Understanding odd-even numbers - Describe a simple relationship between two numbers using appropriate mathematical terms. - Understand place value in and order whole numbers - Represent the place value of two-digit numbers (tens and ones) using real objects, models and expanded notation - Add and subtract whole numbers
Required previous learning:	Awareness of numbers from 0 – 20 and being able to write the numbers
Inspiration:	None

Additional enrichment activities:	<ul style="list-style-type: none"> - Design the number line for up to – 10 / - 20 - Add more rules to the game for multiplication / division by 2 etc. - Design the number line for 30 - 50
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Learning outcomes:	<ul style="list-style-type: none"> - Understanding of simple and compound machines - Understanding of a Rube Goldberg machine - Design and execution of a machine
Required previous learning:	Basic understanding of force, motion, and energy strand (G3 science)
Inspiration:	Simple and compound machines Engineering Kids Rube Goldberg Machine
Additional enrichment activities:	<ul style="list-style-type: none"> - There is always room for extending the complexity of the final outcome by adding more items. - Older learners can also be asked to write a report documenting the process of creating the machine and detailing the types of component machines used, their operation mechanism etc.