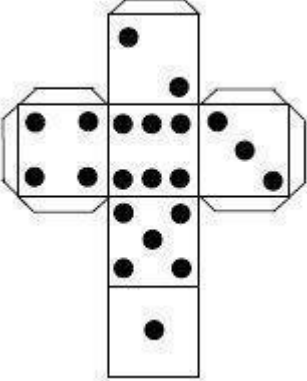# JUMPING MATH

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	Learners will revise counting the numbers from 0 – 20, they can count different objects in their house to revise this – trying to count both forward and backwards from 20 We will understand the concept of odd and even numbers – learners will split some items in their home between any 2 people. The item can be pencils, spoons, books, boxes or anything else available at home. They will distribute it equally. They will identify that the number that can be split into two parts equally as a whole is an even number and the number that cannot be split in two parts equally as a whole number is an odd number. Tip: Younger learners that may not understand the concept of a whole number should be told that no halving is allowed. Example: - 2 pencils can be divided as 1 goes to X and 1 goes to Y with none left over – so it is an even number - 3 boxes get divided as 1 goes to X and 1 goes to Y, but then there is 1 leftover and it can only be divided if we split it into half (which is not allowed) – so 3 is an odd number
	50 minutes	Learners will identify which numbers between 1-20 are odd or even by doing the same experiment.

| 2 | 30 minutes | Learners will make their own dice based on their understanding of a cube. |

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<tr><td></td><td></td><td>They should reach the result that 2 – 4 – 6 – 8 – 10 – 12 – 14 – 16 – 18 – 20 are even numbers and the odd numbers are 1 – 3 – 5 – 7- 9 – 11 – 13 – 15 – 17 – 19

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

The even numbers will be in one color and the odd numbers will be in another color

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.</td></tr>
<tr><td>2</td><td>30 minutes</td><td>Learners will make their own dice based on their understanding of a cube.

Input: A cube is a three-dimensional solid object bounded by six square faces, with three meeting at each vertex.

- 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</td></tr>
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		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 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. Learners will now write all the numbers down and cut them into small cards. Learners will also write the main mathematical functions on separate small cards (+ addition / - subtraction / > greater than / < less than)
3	45 minutes	All the preparations are now ready to play the addition game! Rules: Learners will throw the dice or spin the spinner and based on the number that comes, they have to jump that many places UP the number-line. Learner will start from 0 (e.g. if the dice is 3, they will jump up 1..2..3 to number 3, then throw the dice and if it is 5 – they will jump up to 8 (3+5 or 4..5..6..7..8) Learners can also come up with other rules. Examples: ● 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

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	15 minutes	Learner will also complete a numerical representation by writing down the sums that they are practicing e.g. 3+5=8
		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.
		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
		Learners will represent this in a numerical function as 6 > 4
4	45 minutes	All the preparations are now ready to play the subtraction game!
		Rules: Learner will throw the dice or spin the spinner and based on the number that comes, they have to jump the same number of places DOWN the number line. 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)
		Learners can also come up with other rules. Examples: - 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
		Learner will also complete a numerical representation by writing down the sums that they are practicing e.g. 20 – 3 = 17
	15 minutes	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.
		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
		Learners will represent this numerically as 8 < 13
		Extension: Learners can do the number of exercises as the number is greater than e.g. 13 – 8 = 5 so 5 jumping jack exercises
5	45 minutes	Continue to play the game with any or all four numerical operations with your own rules (addition, subtraction, multiplication and division – depending on the learner levels)

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	Suggested Rules 1:
	Family members can pick up a function card and a number card. Learners will then perform the operation e.g. + 6, - 3, and then determine is the final number greater or lesser than the original number they started with
	Learners will write down all the mathematical functions numerically
	Learners can add in rules – examples include: ● if you land on an even number – you have to jump that many times or if you land on an odd number – you have to hop that many times ● Extra points for identifying different ways to reach the same number e.g. 7+3 = 10, 5+ 5 = 10 and 14 – 4 = 10. They can try all these out on the number line
Assessment Criteria:	- 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:	- 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:	- Design the number line for going to – 10 - Design the number line for 30 - 50 - Introduce patterns and more rules to start understanding multiplication e.g. students asked to jump on every alternate number e.g. 2 – 4 – 6 – 8 – 10 etc. and write down 2+2=4, 4+2=6, 6+2=8 etc. A similar exercise can be done for patterns for the 5 and 10 times table - Learners can begin to write inverse operations.

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