

## NUMERACY ACTIVITIES

### **Description:**

Numeracy focuses on the core skills of applying numerical concepts. It is the ability of understanding fundamental mathematical operations such as, multiplication, division, addition and subtraction. These activities are created for all ages and all cognitive levels.

Activities should be adapted based on the learner's cognitive ability.

### **Purpose:**

Numeracy activities are important for learners to develop logical thinking and strategies in everyday life. Learners also need numeracy to make sense of numbers, solve problems, play sports, cook and understand instructions.



### **Activity 1: What a Problem!**

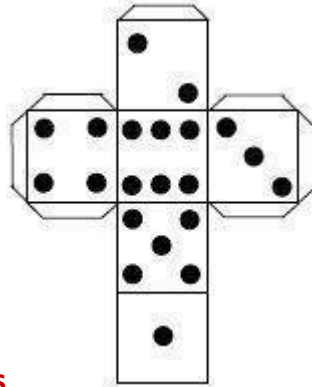
<b>Description:</b>	Ask the learner to write a math story or word problem and have someone else draw it out and solve it!
<b>Purpose:</b>	This activity ensures that learners understand the real world applications of mathematics and encourages them to use math to solve these problems.
<b>Steps:</b>	<p><b>Step 1:</b> Ask the learner to think about a very short story for their word problem. Think of questions such as:</p> <ul style="list-style-type: none"> <li>- Who is the character in the story?</li> <li>- Where is the story happening?</li> <li>- What is his or her problem?</li> <li>- What question are you looking to answer?</li> </ul> <p><b>Step 2:</b> Once the learner has the story, think about the math involved:</p> <ul style="list-style-type: none"> <li>- How many steps will be needed to solve the problem?</li> <li>- Which operation/s will be needed? (addition, subtraction, multiplication, and division)</li> <li>- How large will the numbers be?</li> </ul>

	<p><b>Step 3:</b> Finally, tell the learner to write the problem and ask someone else to solve it by drawing a picture and writing a number sentence to go with it!</p> <p><b>Example of a word problem:</b> Emily made 10 cookies at home for her family and herself. Her brother ate 4 cookies, how many are left for the rest of the family?</p>
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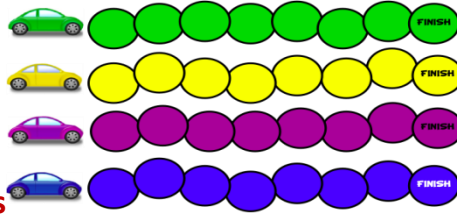
### Activity 2: How Can You Make It?

<b>Description:</b>	Choose a number and then show different ways to split a number into two whole numbers.
<b>Purpose:</b>	This activity ensures that learners understand how to create connections between numbers using addition.
<b>Steps:</b>	<p><b>Step 1:</b> Ask the learner to create a list with numbers and pick one number from the list, or ask the learner to think of a number in their head and say it out loud. Alternatively the learner can roll one or two dice to decide the number.</p> <p><b>Step 2:</b> Next, ask the learner how many ways they can split the number into whole numbers. For example, if their number is 10, they can come up with:</p> <ul style="list-style-type: none"> <li>- 10 can be added using the numbers 5, 5</li> <li>- 10 can be added using the numbers 8, 2</li> <li>- 10 can be added using the numbers 7, 3</li> <li>- 10 can be added using the numbers 6, 4</li> </ul> <p><b>Step 3:</b> Finally, tell the learner to see how many ways they can think of to reach their chosen number.</p> <p><b>Fun Twist:</b> Ask the learner to play this with a partner or in a group, and whoever has the most ways of reaching the number, wins.</p> <p><b>Additional Exercise:</b> Ask the learner to try to split the number with different mathematical operations such as subtraction, division and multiplication.</p> <p><b>Simplified Exercise:</b> Ask the learner to set a goal for themselves: "I will think of 5 different ways to make this number."</p>



### Activity 3: Rolling Numbers

<b>Description:</b>	Roll two or more dice and create math equations to solve for.
<b>Purpose:</b>	This activity ensures that learners know their math facts automatically.
<b>Steps:</b>	<p><b>Step 1:</b> Ask the learner to decide what operation they wish to do (addition, subtraction, multiplication or division)</p> <p><b>Step 2:</b> Next, get two dice and roll them.</p> <p><b>Step 3:</b> Finally, solve the problem.</p> <p>For example: if they chose <i>addition</i> and rolled 2 on one dice and 3 on another dice, do <math>2 + 3</math> and solve this equation.</p> <p><b>Tip:</b> Assist the learner in creating their own dice like the picture!</p> <p><b>Additional Exercise:</b> If the learner wants to work with bigger numbers, then change the numbers on the dice.</p> <p><b>Simplified Exercise:</b> The learner can play this with a partner or in a group, and whoever has the most correct answers, wins.</p> <p><b>Fun Twist:</b> Set a timer for the learner and keep rolling the dice and solving the equations. Start the timer again and then tell the learner to try to beat their previous score.</p> <p>For a longer project where the learner can create their own math games, please refer to Math Cards here: <a href="#">Link</a></p>



#### Activity 4: Racing Cars

<b>Description:</b>	Two or more people pick a card each. The person with the higher number will move their car one step ahead. Whoever reaches the finish line first, wins.
<b>Purpose:</b>	To ensure the learners are able to compare number values.
<b>Steps:</b>	<p><b>Step 1:</b> Help the learner create about 20-30 number cards. (cut an A4 piece of paper in 8 or 12 cards)</p> <p><b>Step 2:</b> Next, ask the learner to get two toy cars and create a race track on some chart paper like the one in the picture.</p> <p><b>Step 3:</b> Then, place the cars on the starting position and each person pick up a number card. The person with the higher number moves one step forward.</p> <p><b>Step 4:</b> Finally, the person who reaches the finish line first, wins.</p> <p><b>Additional Exercise:</b> Use numbers in the tens, hundreds or thousands or even larger to make it more challenging. The number cards can also be decimals, fractions or integers if the learner knows them.</p> <p>For a longer project where the learner can create their own math games, please refer to Math Cards here: <a href="#">Link</a></p>



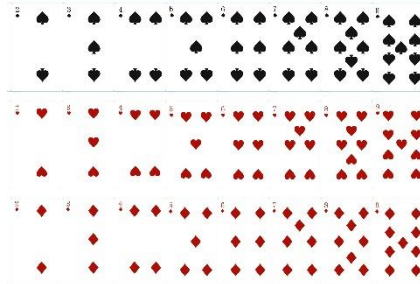
### Activity 5: Snap

<b>Description:</b>	Two or more people take turns putting a playing card one on top of another. The person who calculates the decided number first says snap and collects the cards. Keep going until one person loses all their cards.
<b>Purpose:</b>	This activity ensures the learners are able to compute their basic math facts automatically.
<b>Steps:</b>	<p><b>Step 1:</b> Deal all the number cards equally among the players.</p> <p><b>Step 2:</b> Next, ask the learner to decide which operation they wish to work with and what the total must be. For example: They decide they want to work with addition and the total number must be 10.</p> <p><b>Step 3:</b> Then, hand out the cards to each player, facing down. Each player takes a turn picking up a card from their own pile and placing it face up in the center, one on top of each other.</p> <p><b>Step 4:</b> Keep calculating the top 2 cards (e.g., 3+4, 2+8), and when the numbers equal the predetermined total (e.g., 10), a player calls “Snap” while slapping their hand onto the top of the pile of cards. The first player to do this wins the pile and adds these cards to the bottom of their pile.</p> <p><b>Step 5:</b> The player that runs out of cards is out of the game and the player with the most cards wins.</p> <p><b>Additional Exercise:</b> If the learner wants to include the other cards (e.g., WILD, Jacks etc.), then assign each of them a number value.</p> <p><b>Simplified Exercise:</b> Ask the learner to make their own number cards. About 30-40, with any number they wish to have.</p> <p>For a longer project where the learner can create their own math games, please refer to Math Cards here: <a href="#">Link</a></p>



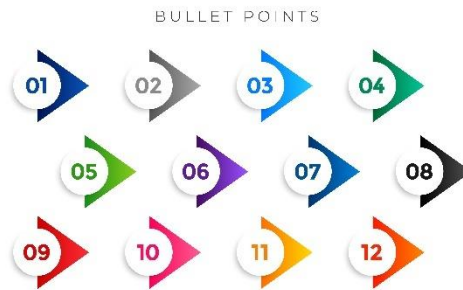
### Activity 6: Double the Doubles!

<b>Description:</b>	Two or more people take turns picking up two cards at a time and adding them. The person who gets the higher total collects the cards. Keep going until one person loses all their cards.
<b>Purpose:</b>	This activity ensures the learners are able to compute their basic math facts automatically.
<b>Steps:</b>	<p><b>Step 1:</b> Deal all the number cards from a playing cards deck equally among all players. If the learner wants to include the other cards (e.g., WILD, Jacks etc.), then assign each of them a number value.</p> <p><b>Step 2:</b> Then, hand out the cards to each player, facing down. Each player takes turn placing two cards, facing up, in front of them.</p> <p><b>Step 3:</b> Next, add the numbers on the cards (e.g.: if they get 3 and 2, then their answer is 5). Tell everyone the answer. The player with the highest answer adds everyone's cards to the bottom of their pile.</p> <p><b>Step 4:</b> The player that runs out of cards is out of the game and the player with the most cards wins.</p> <p><b>Fun Twist:</b> If the player gets the same number in both cards, they can DOUBLE their answer! (e.g.: if they get 3 and 3, add them and get 6 and then double this to get 12 as the final answer!)</p> <p><b>Additional Exercise:</b> Play this game with subtraction or multiplication too!</p> <p><b>Simplified Exercise:</b> Ask the learner to make their own number cards. About 30-40, with any number they wish to have.</p> <p>For a longer project where the learner can create their own math games, please refer to Math Cards here: <a href="#">Link</a></p>



### Activity 7: Take it Away!

<b>Description:</b>	Two or more people take turns subtracting. The person who gets the lower total collects the cards. Keep going until one person loses all their cards.
<b>Purpose:</b>	This activity ensures the learners are able to do basic operations mentally.
<b>Steps:</b>	<p><b>Step 1:</b> Deal the number cards (1-9) from a playing cards deck to all the players.</p> <p><b>Step 2:</b> Next, the players look at their cards and make a 2 digit number using two cards (e.g.: if I have 3, 6, 7 and 9, I can make numbers such as 36 and 97, etc.)</p> <p><b>Step 3:</b> Then, each player subtracts the smallest number from their largest number and tells the answer (e.g.: <math>97-36= 51</math>). This should be done mentally, if possible.</p> <p><b>Step 4:</b> The player with the highest number for the answer keeps their cards, but the other players return their cards to the bottom of the middle pile.</p> <p><b>Step 5:</b> Keep going until the cards are all done. The person with the most cards wins.</p> <p><b>Additional Exercise:</b> This game can be played with addition, multiplication or division too!</p> <p><b>Simplified Exercise:</b> Use only 1 digit numbers, using 1 card, and subtracting the smallest number from the largest number.</p> <p>Ask the learner to make their own number cards. About 30-40, with any number they wish to have.</p> <p>For a longer project where the learner can create their own math games, please refer to Math Cards here: <a href="#">Link</a></p>



### Activity 8: Make My Number

<b>Description:</b>	Two or more people take turns subtracting. The person who gets the lower total collects the cards. Keep going until one person loses all their cards.
<b>Purpose:</b>	This activity ensures the learners are able to do basic operations mentally.
<b>Steps:</b>	<p><b>Step 1:</b> Using a deck of cards, shuffle the cards and then lay 5 cards out on the table and all other cards face down in a pile on the side.</p> <p><b>Step 2:</b> Next, the first player picks one card from the deck of the cards and lays it face up beside the pile.</p> <p><b>Step 3:</b> Then, the players attempt to create an equation using any of the 5 cards to make the number they have turned over. For example: if they have placed 5 cards - 3, 6, 2, 5 and 10 on the table, and 7 is the number they chose, then they can make the equations <math>5 + 2</math>, or <math>10 - 3</math>, or <math>5 \times 2 - 3</math> and so on that all equal 7.</p> <p><b>Step 4:</b> The first player to think of an equation says “Made My Number” and says the equation. If they are correct, they keep those number cards and the number card chosen, all of which are then replaced in the next round.</p> <p><b>Step 5:</b> If the players are unable to make the number, just place the chosen card at the bottom of the pile and pick a new one. Keep going until the cards are all done. The person with the most cards wins.</p> <p><b>Additional Exercise:</b> This game can be played by using a timer and challenging players to come up with as many equations within the time limit as possible!</p> <p><b>Simplified Exercise:</b> Ask the learner to make their own number cards. About 30-40, with any number they wish to have.</p> <p>For a longer project where the learner can create their own math games, please refer to Math Cards here: <a href="#">Link</a></p>





### Activity 9: Find it First!

<b>Description:</b>	Two or more learners compute their math equations quickly and look for the answer. The person who gets the answer first gets a point, and the person who has the most points at the end, wins.
<b>Purpose:</b>	This activity ensures the learners are able to compute their basic math facts automatically.
<b>Steps:</b>	<p><b>Step 1:</b> Randomly write the answers to the equations the learner is going to practice on a piece of paper (e.g., to practice the 3 times table write - 3, 6, 9 etc.).</p> <p><b>Step 2:</b> Next, give the players a math equation (e.g., <math>3 \times 4</math>).</p> <p><b>Step 3:</b> Then, the players attempt to point to the correct answer on the piece of paper as quickly as possible.</p> <p><b>Step 4:</b> The first player to point to the correct answer wins a point.</p> <p><b>Step 5:</b> The first player to get 10 points wins.</p> <p><b>Additional Exercise:</b> Choose different numbers or timetables, to make the game more challenging.</p> <p><b>Simplified Exercise:</b> Play this with one learner, competing to answer more and more questions within a time limit (e.g., 1 minute).</p>



### Activity 10: Roll and Round!

<b>Description:</b>	Two or more learners roll dice, create numbers and round them off to the place value chosen, such as tens, hundreds.
<b>Purpose:</b>	This activity ensures the learners are able to round numbers mentally and automatically.
<b>Steps:</b>	<p><b>Step 1:</b> Each learner needs a set of dice and some paper and a pencil. The number of dice used should match whatever place value the learner is working on (e.g., if they are focusing on hundreds, then each learner needs 3 die).</p> <p><b>Step 2:</b> For each round, every learner gets a turn to roll all their three dice at the same time and build a number with it. Then, each person rounds his/her number to the highest place value (e.g., hundred if they have 3 dice). For example, if the learner rolled 3, 5, and 2 the number they get is 352 and they can round it up to 400. Alternatively, if the dice rolled was 2, 3, 1 the number is 231 and they can round it down to 200. For learners that will only round to the 10's, they can roll 5, 6 the number is 56 and this can be rounded to 60 etc.</p> <p><b>Step 3:</b> Then, the players compare their rounded numbers and the highest correctly rounded number wins and gets a point.</p> <p><b>Step 4:</b> The first player to get 10 points wins.</p> <p><b>Additional Exercise:</b> Change the value chosen to round off to for each round (e.g., kids have 4 dice and round to the thousands in the first round and then the next round they have 3 dice and round to the hundreds). This can also be played with decimals, fractions etc.</p> <p><b>Simplified Exercise:</b> Have the learner play the game with one dice or two dice only. So they only round to zero or tens.</p>