

Parents Guide to Numeracy

Parents are the first and ongoing educators of their child and, as such, should receive information and support to help develop their child's learning at home and in the community.

Parents, carers and families are by far the most important influences in a child's life. Their support can play a vital role at all stages of education. Parents who take on a supportive role in their child's learning make a difference in improving achievement and behaviour.

(Education Scotland)

Experience and Outcome	Learning at Home Ideas
<p>I can round a number using an appropriate degree of accuracy, having taken into account the context of the problem.</p> <p>MNU 3-01a</p>	<p><u>Rounding War</u></p> <p>Shuffle a deck of cards. Equally divide the deck of cards into two piles, one for each player. Players leave the deck face down and will choose cards from the top of their deck for each hand. Before the game begins, the players must choose whose cards are in the tens place value and whose cards are in the ones place value. The suit of the cards does not matter. At the same time, each player lays down a card and rounds the number that is created by those cards. For example, player one (tens place) pulls a 2 and player two (ones place) pulls a 4. The number created is 24 and the first player to call out 20 wins both cards. In case of a tie, players each take their own card back and places it on the bottom of the deck. The game continues at a fast pace until a player runs out of cards. When that occurs, the other player holding all of the cards wins the game. Depending on how difficult the players want the game to be, they can either leave in or take out the face cards. The Ace is worth 1, the Jack is 11, the Queen is 12, and the King is 13. If player one (tens place) pulls out a Jack, 11, and player two (ones place) pulls out a 5, then the number to round is 115. The first player to call out 120 wins both cards.</p>
<p>I can use a variety of methods to solve number problems in familiar contexts, clearly communicating my processes and solutions.</p> <p>MNU 3-03a</p> <p>I can continue to recall number facts quickly and use them accurately when making calculations.</p> <p>MNU 3-03b</p>	<p><u>Number Sense</u></p> <p>We manipulate numbers to develop number sense in a game called Nifty Fifty. Player one chooses a number between one and ten. Player two also chooses a number between one and ten. Player two adds his number to the number of player one and keeps a running total of the sum. The play goes back to player one, who adds another number onto the first two picks. The play ends and the winner is determined by whoever gets to fifty first. For a variation, change the rules so the player that gets to fifty first loses the game. Reversing mathematical thinking is a skill that also builds number sense.</p> <p><u>War</u></p> <p>The game is played in much the way the traditional card game War is played. The biggest difference is that players add (or subtract or multiply) the cards they reveal.</p> <p>Rules for Play</p> <p>Shuffle two decks of cards and place them face down. Each student draws a card from the top of the deck and reveals the card. Cards can be revealed one at a time or at the same time.</p> <p>When both cards are revealed, students must perform the assigned operation on the cards. For example, if one student flips over a 5 of hearts and the other flips over a 9 of spades, then the students multiply in their heads the value of those two cards. $5 \times 9 = 45$. The first person to call out "45" wins those two cards. Play continues in this manner until the end of a predetermined time or until one person has all the cards.</p>

I can use my understanding of numbers less than zero to solve simple problems in context.

MNU 3-04a

Weather

Scholastic's online weather site offers a number of online weather activities for kids. Kids can play *Observe: Track Clouds in the Sky*, an activity that walks kids through learning about clouds by observing and recording cloud patterns and their affect on weather. Then they take a short quiz. They can also use *Gather Date: Experiment with Weather* to learn about different weather tools, experiment with the weather lab and record their own findings on a printable weather data sheet. They can do the *Analyze: Forecast the Weather* activity by learning about specific types of weather, such as hurricanes and tornadoes. *Weather Watch* also offers two fun games for kids to help them explore and investigate climate patterns: the *Weather Detective Web Quest* and the *Weather Maker*.

I can solve problems by carrying out calculations with a wide range of fractions, decimal fractions and percentages, using my answers to make comparisons and informed choices for real-life situations.

MNU 3-07a

Sale Racks

Sale racks at department stores provide excellent opportunities to use decimals in real situations. These racks will usually provide a regular price as well as the percentage reduction with the sale. Here's how to show your child decimals in action. For this example, let's say the regular price is £100, and the sale price is 25 percent off. First, convert the percentage to a decimal number. So 25 percent = .25. Second, multiply the decimal by the regular price: .25 times 100 = 25. The discount is £25.00 and the final price is £75.00

Tips

Decimals can be used to quickly find how much to tip a waiter or waitress at a restaurant. The standard tip is around 15 to 18 percent. For example, the final bill at a restaurant is £35.20 and the customer wants to give a 15 percent tip. First, convert the percentage (15%) to a decimal (.15). Next, multiply the decimal times the final bill to find the tip. So .15 times £35.20 = £5.28. The tip for the bill is £5.28. This process can be simplified by adding estimating 20% and giving a little less than your answer.

Recipes

Many people alter recipes that are too large or too small for the number of people they need to serve. For example, a recipe may make only enough food for two people, but the cook needs to serve four people. This means that every measurement in the recipe will need to be doubled. If the recipe calls for $\frac{3}{4}$ cup of sugar, $\frac{3}{4}$ needs to be doubled by multiplying $\frac{3}{4}$ times two. $\frac{3}{4}$ times two equals $1\frac{1}{2}$ cups. Let your child figure this out by performing the multiplication with a measuring cup, a mixing bowl and the sugar.

<p>I can show how quantities that are related can be increased or decreased proportionally and apply this to solve problems in everyday contexts. MNU 3-08a</p>	<p><u>Proportion in the home</u></p> <p>Ask your son/daughter draw the map of your house. However, everything in the drawing has to be completely proportional to the size of the building. The students must keep a consistent key and on a separate paper write the exact measurements of the house and drawing, as well as the ratio the two have toward each other.</p> <p><u>Re-write a Recipe</u></p> <p>Ask your son/daughter to use their knowledge of ratios and proportions to adapt a recipe. Ask them to change a recipe that feeds four people into a recipe that will feed sixteen. Have them double a cookie recipe. To test their recipes, challenge them to make the new recipe or give it to a parent to make and share with the class.</p>
<p>When considering how to spend my money, I can source, compare and contrast different contracts and services, discuss their advantages and disadvantages, and explain which offer best value to me. MNU 3-09a</p>	<p><u>Costs</u></p> <p>Perhaps your child wished for a mobile phone from Santa! Ask them to do the research online or in stores and have them draw up a comparison price taking into account the number of free minutes, texts and data available.</p> <p>Ask them to take this further by predicting their bills for the next year - can they afford to keep this up - will they have to save some of their pocket money to pay for calls.</p>
<p>I can budget effectively, making use of technology and other methods, to manage money and plan for future expenses. MNU 3-09b</p>	<p><u>Budgets</u></p> <p>Mail-order catalogs and advertising supplements can be a temptation, a convenience, and an annoyance. They can also be an opportunity for lots of maths! In this activity, children pretend they have a certain amount of money to spend. They use a catalog or an advertising supplement to make a "wish list" of items they can buy for their spending limit. As they make their choices, they practice addition, subtraction, and estimation with pounds and pence. They also learn about working within a budget.</p> <p>This activity can be a great way to keep children occupied—and doing maths—on long trips, at the kitchen table while you're making dinner, or on rainy days.</p>
<p>Using simple time periods, I can work out how long a journey will take, the speed travelled at or distance covered, using my knowledge of the link between time, speed and distance. MNU 3-10a</p>	<p><u>Timetables</u></p> <p>Sometimes, figuring out when to leave involves choosing which bus (or train, or ferry) to take. Work with your child to use a timetable to plan your trip.</p> <p>"We have to be at the doctor's at 4:00. The bus stops at North Square just around the corner from the doctor's office. Let's look at the schedule to find a bus that gets there by 3:50. OK, the 3:02 from the Oak Street stop should get us in by 3:43. What time do we need to leave home to catch the 3:02 bus at Oak Street?"</p>

<p>I can solve practical problems by applying my knowledge of measure, choosing the appropriate units and degree of accuracy for the task and using a formula to calculate area or volume when required. MNU 3-11a</p>	<p><u>Crackers</u></p> <p>Ask your son/daughter to pretend they have been asked to design a new kind of cracker for a cracker company. Inform them the company has asked that the crackers have an area of 16 or a perimeter of 20. Ask them to make as many different designs as possible using those measurements.</p> <p><u>Solutions and Volume</u></p> <p>For this activity you will need one cup of water, one cup of sugar, a spoon and a measuring cup that can hold a volume of at least two cups. Add your water into the measuring cup and make sure that it aligns precisely with the one-cup line. Now, before adding in the sugar, make a prediction about how much space your solution will occupy.</p> <p>You may suspect that adding two substances of the same volume together will result in a solution with a doubled volume. However, when you pour in the sugar and give the mixture a stir, you will notice that the volume ends up being less than two cups. This is because some of the sugar dissolves into the water, or squeezes between the spaces in its molecular composition.</p> <p><u>Volume of Irregular Objects</u></p> <p>Although you can determine the volume of square and rectangular objects by multiplying length by width by height, According to School For Champions, you will need a different approach for irregularly shaped objects. Fill a bucket with water right up to the brim, and place it inside a tray or other container. Then place your irregular object in the water, and watch the water overflow into the tray. The volume of water you collect in the tray will be equal to the volume of your object. Pour the water into a measuring cup to see its volume.</p>
<p>I can work collaboratively, making appropriate use of technology, to source information presented in a range of ways, interpret what it conveys and discuss whether I believe the information to be robust, vague or misleading. MNU 3-20a</p>	<p><u>Advertising</u></p> <p>Pick out a few adverts from the daily paper. Engage in discussion about the small print - some examples are 9/10 women agree but they only asked 23 women! Look at graphs and charts from advertising and discuss whether they are misleading or not.</p>
<p>I can find the probability of a simple event happening and explain why the consequences of the event, as well as its probability, should be considered when making choices. MNU 3-22a</p>	<p><u>Probability Games</u></p> <p>Dice, cards and spinners are all random number generators to use in probability games. Probability is the likelihood that a targeted situation will occur. The desired outcome compared to the total outcomes possible is listed as a fraction, ratio or percent.</p> <p>Set up a game with two dice and a recording sheet to add up the totals of each roll of the die. This game involves determining the probability of a one being rolled on both dice. Each throw of the dice could lead to collecting more points or losing all of the player's points, if a double one shows up.</p>

Some useful websites

Address	Details
www.scottishschools.info/dumbartonacademy	Our school websites which has useful information and resources.
www.ehow.com	A useful how to guide for parents.
www.bbc.co.uk/schools/bitesize	A BBC resource giving examples and worksheets to assist learners.
www.mrbartonmaths.com	A treasure trove of free maths gems for parents, pupils and teachers to try and get everybody enjoying mathematics a bit more!
www.mathatube.com	Free video and text lesson on all math subjects and all grades.
www.mad4maths.com	An introduction to fun games and exercises to help kids learn numeracy, mathematics and telling the time.
www.coolmath4kids.com	Online educational games.
www.supermathsworld.com	Online educational games.
www.mathplayground.com	The primary goals of Math Playground are to help students feel more confident about their math skills and to help them form more positive attitudes toward the subject of math.
www.mathsisfun.com	Mathematics in an enjoyable and easy-to-learn manner, because they believe that mathematics is fun.
www.bbc.co.uk/skillswise/	BBC Skillswise enables young adults to improve reading, writing and number skills.
www.poraora.com/	Online educational games.