

Numeracy for Intermediate Adult Learners

Learners at this level are ready to move from every day numbers to more traditional arithmetic problems. Your learner may still be more comfortable working with numbers that have some meaning for him. Both you and your learner may use many shortcuts when working with numbers (i.e., rounding, estimating) and may find it helpful to include these shortcuts when working on math skills. These real-life math skills are valid when an adult is absorbing new mathematics skills.

The local library or literacy resource centre may have some useful mathematics workbooks geared for adult learners. Bring a selection with you to a tutoring session to see which ones your learner prefers, are appropriate and are easy for both of you to understand. These workbooks should have the sorts of word problems that adult learners would be familiar with (such as buying enough paint for a room, car mileage, recipe conversions, etc.) and be clearly laid out. They can be used as a starting point for more engaging activities. Many students feel a real sense of success as they complete workbooks.

It is vital to review acquired math skills regularly and to introduce new skills one step at a time. Many learners struggle with real fears about math. Check that your learner is comfortable with one skill before moving on to something more complex. For example, she should be able to count by twos, threes, and fives before starting on any multiplication exercises. Again, be careful to introduce only one new skill at a time and only after having thoroughly reviewed the previous skill.

Here are some ideas to help reduce math anxiety:

- Break down math skills into small ordered steps.
- Emphasize the understanding of concepts, not speed.
- Use everyday math materials that are relevant to the student.
- Tailor teaching techniques and math strategies to the individual student's learning style.
- Have confidence in the student's ability to master the concepts.
- Make math lessons fun and straightforward.

Intermediate level math activities

Shopping

This area is ripe with possibilities. You can collect store flyers, shop online, compare prices, make imaginary budgets, or make change.

Here are some activities to get started:

1. Make a list of purchases and look through various stores flyers to compare prices. Use this same information in another lesson to practice addition. You could even use the same information again to make a map and decide if it is better to go from store to store or more economical to just do all your shopping in one place.
2. Practice making change. Use the lists and information you have collected in the first activity (or repeat the exercise again with new items or a different store altogether). Role play with your student—you could be the store clerk—write out her purchases and total them (feel free to make mistakes), give her change (again, mistakes are welcome here).

Measurement

Learners may already be familiar with the concept of measurement. They may know how long it takes to get to the learning centre (time and distance), the square footage of their home (area), how far one city is from another (distance). Again, start with what they know, where they feel comfortable, and work from there.

Here are some ideas for measurement activities:

1. Distance

Using a map of your city, find out how long it takes your learner to get to the learning centre and work out the distance. Make a list of other places she travels to and figure out the distances for those as well. Use this information to compare travel times, and look for other places with the same distance. This can be a good time to introduce fractions: if you realize you have to go back home when you are half way to the grocery store, how far have you gone? How long will the trip take now? How long would it have taken if you had not forgotten anything?

2. Using a measuring tape

Measure things, compare sizes, list from shortest to longest.

3. Introduce area

Imagine you are going to paint one room of the learning centre and find the square measurements. Go to the paint store and figure out how much paint you would need and which one is cheapest/most expensive/fairly priced.

Keeping track of expenses

Your student may be interested in keeping track of her monthly expenses, or and may feel overwhelmed by this task. Find out how your learner currently manages her finances as she may have some ingenious coping skills. Some learners use cheque-cashing services, others are familiar with their local bank, while others may not deal with family finances at all.

- Develop a monthly budget. This can be a real budget or for an imaginary person. Remember to include items that you or your learner access for free (i.e., borrowing from the library rather than buying, using the community centre rather than joining a gym). This can be an opportunity for you to talk about how you keep track of your personal expenses.
- Collect samples of bankbooks, cheques, and other bank forms. Many banks can provide these or they can be found online (be sure not to use your own cheque book or bank book).
- Review the vocabulary associated with either the bank or the cheque cashing service your learner uses. Use flash cards or play a game of concentration to review this vocabulary.
- Learn how to use an Automated Tellers Machine (ATM). An easy way to learn how is to create a sample ATM on a blank page. Go over the functions with your learner. Many banks are willing to give you a tour and can show your learner how to use an ATM.

Math games using playing cards

Here are some games to play with your learner to review or reinforce different math skills and concepts.

Ninety Nine (to practice addition and subtraction skills)

1. Give three cards to each player and place the other cards in a pile in the centre of the table.
2. The first player puts a card down, says the number of that card, and picks up another card.
3. The next player puts a card down on top of the first played card but must say the sum of the first and second cards. They pick up another card.
4. Everyone keeps adding their card to the total (keep a running total) until you reach 99. When a player cannot play a card without going over 99, they are out. The game continues until one person is left.
5. Some special cards and values:
 - a king will take you right to 99
 - a nine card will hold you where you are
 - a ten card means you have to subtract ten from the total
 - a four card means you must reverse the direction of play

Black Jack (to practice addition skills)

1. Choose someone to be the dealer.
2. The dealer gives himself two cards, then turns one of his own cards face up.
3. The dealer then deals cards one by one to another player until the player says to stop.
4. The player who has the total closest to 21, without going over wins. (Face cards count for 10, an ace for 11).

Other materials and activities

Here are some activities you and your learner can do to practice his numeracy skills (Laubach Literacy Canada, 2008):

Material	Math Activities	
grocery flyer	<ul style="list-style-type: none"> • reading numbers • decimals • adding 	<ul style="list-style-type: none"> • comparing number values • multiplying or dividing • estimating
dice	<ul style="list-style-type: none"> • number concepts • multiplying by 2 	<ul style="list-style-type: none"> • adding • probability
sports standings	<ul style="list-style-type: none"> • adding and dividing (averages) • decimals 	<ul style="list-style-type: none"> • percentages • comparing numbers
invoice	<ul style="list-style-type: none"> • reading numbers • adding/ subtracting 	<ul style="list-style-type: none"> • decimals • percentage (taxes)