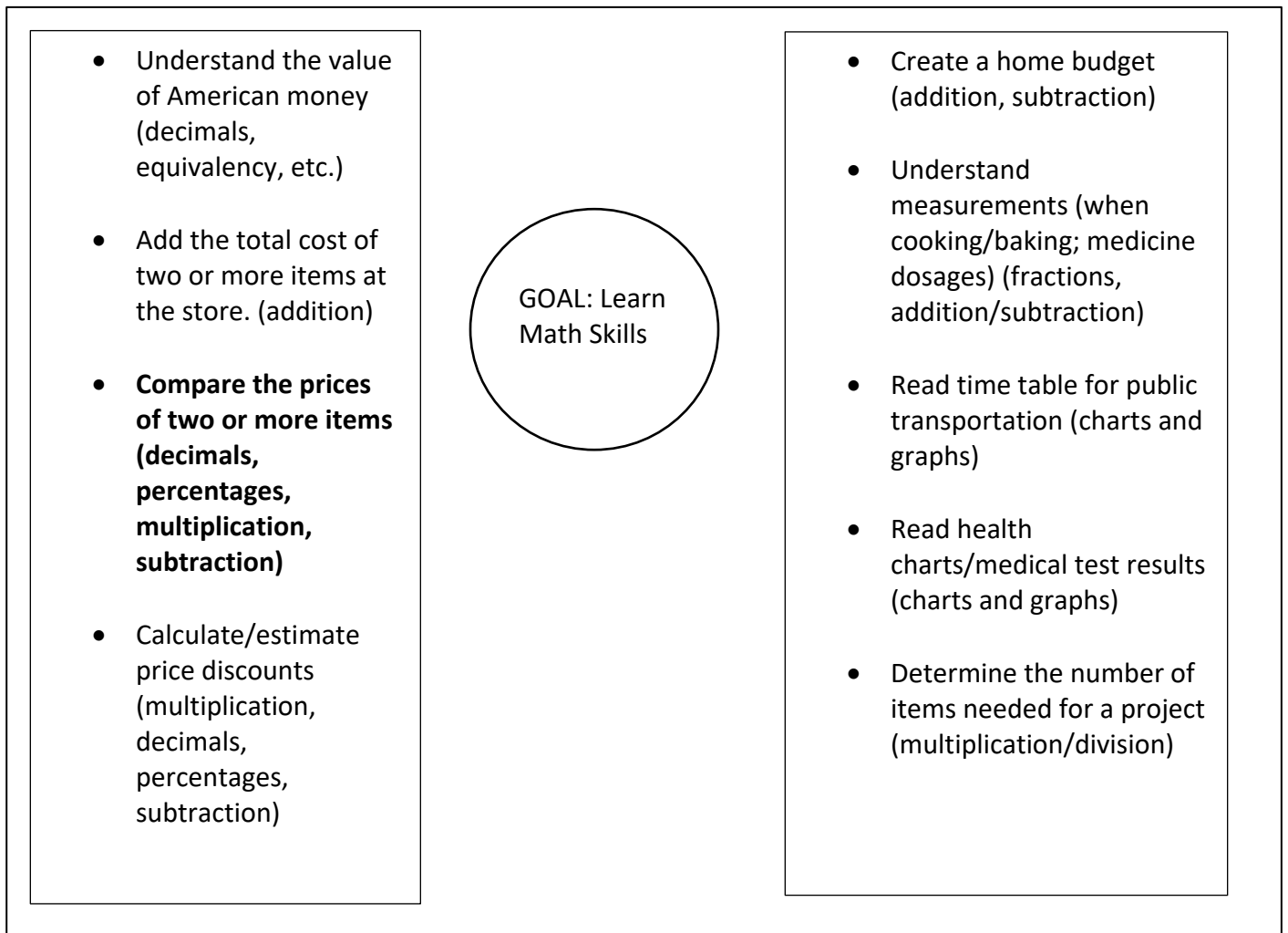


GOAL: Learn Math Skills

Contributed by Laura Martinez, Sacramento Public Library

GUIDEPOST I: Where to Start

- “Since you already know quite a bit about your goal, let’s decide where to start to help you learn the new skills you need.”
1. In conversation with your learner, discuss their previous experience with math. It is common for adult learners to have anxiety around math. Allow time and space for your learner to express their feelings about the subject. You can ask your learner about a positive and negative experience they had with math in the past. This could also be made into a writing assignment that can be included in their learner portfolio.
 2. Discuss their reasons for learning math now. You can ask, “What do you want to be able to do with math skills?” “Where have you noticed math skills may have been useful?”
 3. Using their answers to these two questions, or similar questions, you can start to breakdown the goal into smaller concrete objectives. Try to keep the objectives applicable to everyday life. Studies show that real-world applications are more effective at engaging learner interest and helping in the recall of mathematical concepts.
 4. As you start to breakdown the goal, think about how you might be able to prioritize each objective to teach tiered skills (addition, subtraction, multiplication, division, fractions, etc.). Include the mathematical concept(s) your learner will need to know to achieve each objective. This can be done as a conversation as a way to start building your learner’s math vocabulary. For instance, you can ask, “For this objective, do you think you’ll need to know how to add, subtract, or multiply?” Help the learner by pointing out specific words to look for in each objective. For instance, you can point out that the word “difference” usually means they will be using subtraction and the word “discount” usually means percentages/decimals will be involved.



5. In discussion with the learner, choose a goal related activity. For the purpose of this lesson plan, I will provide resources and activities for the multiple goal-related activities. When discussing what activity to focus on first with your learner, remember to try to think in terms of tiered skills (understanding numbers/number lines, addition, subtraction, multiplication, division, etc.) as much as possible.

GUIDEPOST II: What You Will Learn

➤ “Now, we’ll figure out exactly what we want to accomplish today to help you get closer to your goal.”

Now that you and your learner know which goal-related activity you will focus on, you will locate resources (online, print, etc.) that you can use for instruction. Remember to explain to your learner how you will use each resource and how the instructional activity will help them achieve their long-term goal.

The listed resources can be used for many of the goal-related activities included on the mind map above, but remember to choose a specific activity, such as comparing the prices of two or more items, when you design your own lesson plan. In addition to these resources, you should collaborate with literacy program staff for assistance in finding resources at the appropriate level. Also, be sure to also ask your learner if there are materials, from home or work, which are associated with this goal and can be used as part of instruction.

Basic Mathematics (<https://www.basic-mathematics.com/>) - Provides short simple lessons on basic math, pre-algebra, algebra, geometry, and statistics. There is a page on consumer math that includes lesson on applying basic math skills to everyday real-life situations such as calculating gross and net pay, buying a car, and price discounts. Includes definitions for key vocabulary.

Breakthrough to Math (<https://www.newreaderspress.com/mathematics>) – A four level book series. Each book in the series focuses on a specific concept starting with basic numeracy. Ask your literacy program staff if they have this resource available or if the program can purchase it.

Kahn Academy (<https://www.khanacademy.org/math>) – Can be used for virtual and in-person tutoring to teach counting whole numbers, counting money, place values, adding, subtraction, multiplication, division, fractions, decimals, and percentages. The site consists of short tutorial videos, practice problems, and quizzes. When using this website, it is recommended that you create a teacher account and a student account for your learner. The two accounts can be connected, so you will be able to assign specific lessons to your learner and track their progress. For instance, you can assign lessons that are specific to one mathematical concept such as adding, subtracting, place values, decimals, etc. There is also a lesson on money. Focusing on one concept at a time, might make your learner feel less overwhelmed.

Math Aids (<https://www.math-aids.com/>) – Customize downloadable math worksheets for different grade levels and/or different math topics.

Money Instructor (<https://www.moneyinstructor.com/>) – Provides suggestions for possible lessons and activities related to different mathematical concepts. Also has downloadable worksheets for learning basic money skills, and worksheets for writing practice and improving reading comprehension skills using topics related to math and money. Many of the lessons and worksheets are created for classroom instructions, but they can be modified

for one-to-one tutoring. You will have to create an account to download worksheets, but it is free for a basic account. Accessing some lesson plans and worksheets requires a paid membership.

Practical Money Skills (<https://www.practicalmoneyskills.com/>) – Includes activities for learners to apply their basic mathematical skills to everyday situations. The downloadable lesson plans and worksheets also encourage learners to practice their reading comprehension and critical thinking skills. For instance, there is a lesson on comparison shopping that can be modified for your learner to practice subtraction and apply their understanding of the value of money (Lessons: Grade 3-6). The site also includes an interactive game to practice identifying and counting money called Peter Pigs Money Counter.

Teaching Adults: A Math Resource Book

(<https://www.newreaderspress.com/mathematics>) – Activities and tips for teaching all levels of math. Ask your literacy program staff if they have this resource available or if the program can purchase it.

GUIDEPOST III: How You Will Learn – Multisensory Strategies

- “And we’ll decide on the strategies, or the steps we need to take, to help us do that.”

INSTRUCTIONAL COMPONENTS

1. Key Vocabulary

- With your learner, generate a list of words and concepts, associated with the goal which will be helpful for your learner to recognize and understand. A vocabulary list can be created for each goal-related activity. Each goal-related activity will have words and concepts.
- Example from *Money Instructor*: If the chosen activity is comparing the prices of two or more items, the vocabulary list might include comparison shopping, best deal, bargain, price, quality, and estimate (<https://www.moneyinstructor.com/wsp/wsp0042.asp>). Ask your learner what additional words they might include on the list. For instance, I would also include sales tax and vocabulary related to the specific item being compared.
- Math-aids.com has a vocabulary list for the words and phrases associated with basic math symbols (https://www.math-aids.com/Word_Problems/).

2. Reading Practice

- Using material (print or electronic) associated with the goal, begin reading or listening to the goal-related information. *Money Instructor* and *Practical Money Skills* have activities for reading practice. The *Breakthrough to Math* series includes books on understanding word problems that can be used for reading practice. Literacy staff can also help locate materials at an appropriate level.

3. Writing Practice

- Using written materials related to the goal, include ways in which your learner can practice necessary writing skills. *Money Instructor* includes suggestions for writing practice using math and money related topics.

4. Independent Practice (at home)

- Create additional practice that the learner can complete between tutoring sessions. Think of ways to turn every day, real world, activities into teachable moments to reinforce skills taught in the tutoring session.
- Clearly explain and model what you are asking your learner to do on their own, away from the tutoring session.

5. Real World Practice (Field Trips)

- Think of real-life activities that might support your learner's goals.

Suggestions for activities to do with your learner during lessons or to assign as independent practice.

- *Create flashcards with key vocabulary.* Flashcards can be created using index cards or even online using [Quizlet](#).
- *Comparison Shopping.* Have your learner create a comparison chart. Here is an example taken from *Practical Money Skills*.

Item Name	Item 1	Item 2	Item 3
Store or Website			
Brand			
Price			
Available Discounts			
Shipping Cost			
Basic Features			
Special Features			
Refund/Exchange Policies			
Other Information			

- You learner can go to different stores or search online for an item. Here is an example of Google search results for a coffee pot.

About 630,000,000 results (0.87 seconds)

Ads · See Coffee Servers

 BLACK+DECKER 12-Cup Black... \$25.99 Home Depot ★★★★★ (1k+)	 Cuisinart Dcc- 3400... \$129.99 Macy's Special offer	 Hamilton Beach 12-Cu... \$24.74 Home Depot ★★★★★ (29)	 Hamilton Beach 12-Cu... \$42.99 Home Depot ★★★★★ (36)	 Mainstays 5 Cup Black... \$9.88 Walmart ★★★★★ (993)
 Brentwood 4- Cup Blue... \$17.99 Home Depot ★★★★★ (90)	 Hamilton Beach 12-Cu... \$24.99 Kohl's ★★★★★ (1k+)	 Hamilton Beach 49976... \$99.00 Webstaurant... ★★★★★ (4k+)	 Premium 4- Cup Coffee... \$19.99 Wayfair ★★★★★ (6)	

- Your learner can click on each of the results to find the information needed for the chart.
- After the chart is completed you can have the learner practice different mathematical concepts such as addition, subtraction, multiplication, percentages, etc.
- In addition to practicing mathematical concepts, a follow-up activity might include discussing with your learner which product is worth purchasing.

- *Create a money chart.* Work with your learner to create a currency chart that includes a picture of the coin or bill, denomination, amount written in decimal form, equivalencies, etc. The chart can be created by hand using hand drawn or printed images or on the computer. Here is a partial example.

Penny	Front Back	1¢	\$0.01	One Cent	
Nickel	Front Back	5¢	\$0.05	Five Cents	Equal to five pennies

- *Highlight key vocabulary in word problems.* If working on word problems highlight key words or unknown words to create a vocabulary list.
- *Play Money Set.* Using play money ask your learner to count out different monetary amounts or ask your learner count out change for a hypothetical purchase. Ask literacy program staff if they could purchase a play money set.
- *Play online interactive games.* Playing interactive games is great for independent practice. *Practical Money Skills* includes an interactive game to practice identifying and counting money called Peter Pigs Money Counter. The website [Arithmetic Game](#) includes speed drills for basic math concepts (addition, subtraction, multiplication, and division).
- *Plan a party on a budget.* Provide your learner with a budget and ask them to plan a party. Discuss with your learner how many people will be at the part and what kind of items they will need to purchase. After creating a list of what is needed for the party, your learner can go to a store or go online shopping to find the items. The goal will be to stay within budget. This activity can also be done in reverse in which your learner tries to figure out how much it would cost to host a party for a specific number of people.
- *Play Yahtzee.* Play a game of Yahtzee with your learner to practice addition and multiplication. Ask literacy program staff if they could purchase the game.

GUIDEPOST IV: What Worked, What Didn't, What Can You Use?

- “Let’s think about what we learned today and how you can use it on your own as you work toward your goal. Which tutoring activities worked well today, and which did not work so well. We can then plan what we’d like to work on in our next session.”

Document Achievement

Remember to keep track of your learner’s work that indicates growth and progress toward the goal.

- In conversation with your learner, select specific evidence, or indicators of achievement. This can help you understand if the instructional plan is working.

- Discuss and encourage the use of a *Learner Portfolio* as a tool to keep evidence of successful work leading to the long-term goal. Set aside time in the tutoring session for your learner to select examples of the work which they are most proud of.
- You can use the *Roles and Goals Form for Collecting Evidence and Indicators of Achievement* sheet to keep track of goal-related progress.
<https://libraryliteracy.org/for-coordinators/roles-and-goals/>. This information will be useful when you and your learner take time to reflect on what's been accomplished, and when Roles and Goals reporting time comes around.
- Look for the *Milestones* that reflect important steps along the way to goal achievement. Make note of this progress for future discussion and reporting.

Initial Effort – The ultimate goal has been broken down into smaller components and your learner understands the skills needed to achieve the final goal. You and your learner have discussed where to start.

- In discussion with your learner, choose evidence that reflects your learner's initial effort to include in the learner portfolio. This can be a paragraph or two written by your learner about their anxiety around math or a short writing on a positive and negative experience they had with math in the past.

Making Progress – You and your learner have recognized indicators of progress and put aside specific physical and anecdotal evidence that shows improved abilities.

- Specific physical and anecdotal evidence might be a chart or budget your learner created, a completed writing assignment, a math worksheet your learner is particular proud of completing.
- Ask your learner to write a short self-reflection on the progress they have made. Possible prompts include:
 - Describe a new math word you learned recently and what it means.
 - Describe a particularly difficult math problem you came across and the steps you took to find a solution to that problem.
 - What have you learned about [a specific math concept] so far, and what do you still want to learn?

Goal Accomplished – Your learner can independently solve basic math problems or understands a specific mathematical concept.

- Ask your learner to write a short self-reflection to include in the learner portfolio.
Possible prompts include:
 - Have your feelings about math changed since starting your lessons? If so, how have they changed?
 - What changes have you noticed about yourself since achieving this goal?
 - How do you plan to apply your new math skills in your everyday life?

Additional Resources:

Mathematics Resources for Parents and Guardians

(<https://www.cde.ca.gov/re/cc/mathinfoparents.asp>) – Information and resources for parents and guardians to explain mathematics instructions used today (Common Core Math).

Teaching Strategies: Math Activities for ESL/ELL Learners

([ProLiteracy Conference 2019 Presentation](#)) – Strategies and activities for teaching math to English language learners.