

# VOLUME

Special Ed



PRINT AND DIGITAL





*This unit was created with this guy in mind. He has autism and an intellectual disability. He is a non-reader, can count to 20, but still struggles with measurement. With some support he is able to do this unit and enjoys the challenge. He is my tester!!*



## Table of Contents

Pages	Activity
4-37	About how much does it hold (book 1)
38-54	Calculating volume (book 2)
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*Also included with this unit is a power point show that is narrated and has automatic advancement of slides. Let me know in the feedback if this was helpful 😊*

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*This unit contains over 150 pages of material that focus on measuring volume and using the correct units. There is a detailed lesson plan included to help you make the most of this material.*

*This unit also digital activities.*



# Volume Lesson Plan

## Preparation

- Print out a vocabulary board for each student to use throughout unit
  - Laminate or place in page protector
- Print out flash cards onto cardstock and laminate
  - Gather pictures of various objects to use with flashcards
- Books
  - Print out, laminate, and bind

## Preassessment (do day 1 before starting lesson)

- Use the fact sheet to assess what your students may already know
- I cannot emphasize enough how important this step is. If you want to see growth, this preassessment is so important!!

## Teaching Tips

1. *Color Coding:* this is a really easy way to add more structure to a matching activity. Outline or color in an empty box or sorting label. Outline or color in the corresponding picture symbols the same colors. Becomes a color matching task.
  - a. For more info, read more here:  
<https://specialneedsforspecialkids.org/2015/09/05/using-color-coding-for-differentiation/>
  - b. I also have a blog post on differentiating one activity 3 ways:  
<https://specialneedsforspecialkids.org/2018/10/22/differentiating-1-activity-3-ways-easily-and-effectively/>
2. *Make you own copies of the activities:* Every day I review the activity we did yesterday. For that reason:
  - a. I often complete the activity myself and often laminated it for easy review that I could use year after year.
  - b. My copies were also helpful as either a model for students who needed more support or as a way for more advanced students to self-check their work.
3. *Worksheets:* There are more worksheets included in the unit than you may need. Use them for extra practice or homework.
4. *Options for Use:* Turn any activity into a reusable file folder activity by laminating and adding Velcro.

The lesson plans contain:

Overall tips for teaching students with significant needs and who may lack some pre-requisite skills.



## Quick Look

Day	Activity	Day	Activity
1	<ul style="list-style-type: none"><li>• Book</li><li>• Intro vocab cards</li><li>• Circle map</li></ul>	10	<ul style="list-style-type: none"><li>• Book</li><li>• Group activity #1</li><li>• Gallon Man</li></ul>
2	<ul style="list-style-type: none"><li>• Book</li><li>• Vocab card activity</li><li>• Circle map</li></ul>	11	<ul style="list-style-type: none"><li>• Book</li><li>• Group activity #1</li><li>• Equivalent Amounts</li></ul>
3	<ul style="list-style-type: none"><li>• Book</li><li>• Vocab card activity</li><li>• Circle map</li></ul>	12	<ul style="list-style-type: none"><li>• Book</li><li>• Group activity #1</li><li>• Equivalent Amounts</li></ul>
4	<ul style="list-style-type: none"><li>• Book</li><li>• Vocab card activity</li><li>• Circle map</li></ul>	13	<ul style="list-style-type: none"><li>• Book</li><li>• Group activity #2</li><li>• Circle best unit</li></ul>
5	<ul style="list-style-type: none"><li>• Book</li><li>• Vocab card activity</li><li>• Circle map</li></ul>	14	<ul style="list-style-type: none"><li>• Book</li><li>• Group activity #2</li><li>• Calculating volume</li></ul>
6	<ul style="list-style-type: none"><li>• Book</li><li>• Vocab card activity</li><li>• Sorting activity</li></ul>	15	<ul style="list-style-type: none"><li>• Book</li><li>• Group activity #2</li><li>• Calculating volume</li></ul>
7	<ul style="list-style-type: none"><li>• Book</li><li>• Vocab card activity</li><li>• Sorting activity</li></ul>	16	<ul style="list-style-type: none"><li>• Book</li><li>• Group activity #2</li><li>• Calculating volume</li></ul>
8	<ul style="list-style-type: none"><li>• Book</li><li>• Group activity #1</li><li>• Ordering activity</li></ul>	17	<ul style="list-style-type: none"><li>• Book</li><li>• Group activity #2</li><li>• Calculating volume</li></ul>
9	<ul style="list-style-type: none"><li>• Book</li><li>• Group activity #1</li><li>• Ordering activity</li></ul>	18	<ul style="list-style-type: none"><li>• Quiz</li></ul>

*The lesson plans contain:*

*A quick look at what you will do each day.*



## Day 5

Activity	Notes	Materials
Read the book: <b>About How much does it hold?</b>  (10 minutes)	<ul style="list-style-type: none"><li>• Read through the story, asking lots of questions</li><li>• Continue to make connections between book and vocabulary board</li></ul>	<ul style="list-style-type: none"><li>• Book</li><li>• Vocabulary board</li></ul>
Vocabulary cards <b>Scavenger Hunt</b> (10 minutes)	<ul style="list-style-type: none"><li>• Place one set of the vocabulary cards around the room before lesson</li><li>• Students walk around and find them, bring them back and matching them to their own set of cards</li></ul>	<ul style="list-style-type: none"><li>• Vocabulary cards (extra sets)</li><li>•</li></ul>
Circle map review (5 minutes)	<ul style="list-style-type: none"><li>• Review the circle map completed yesterday</li></ul>	<ul style="list-style-type: none"><li>• Circle map completed yesterday</li></ul>
Circle Map (10 minutes)	<ul style="list-style-type: none"><li>• Do the circle map on things measured in gallons<ul style="list-style-type: none"><li>◦ Choose the best version (errorless or not) depending on the learning level of your students</li><li>◦ Students cut out symbols and place in circle map.</li></ul></li><li>• Make connections to the book as necessary</li></ul>	<ul style="list-style-type: none"><li>• Circle map</li><li>• Scissors</li><li>• Glue</li></ul>
Sharing (10 minutes)	<ul style="list-style-type: none"><li>• Each student shares their finished activity with the group using the communication method of their choice</li></ul>	<ul style="list-style-type: none"><li>• Completed worksheet</li><li>• Communication devices</li></ul>

The lesson plans contain:

Detailed instructions on how that day's lesson should run including group and individual activities.



But, whether large or small, we can measure how much liquid there is in the container.

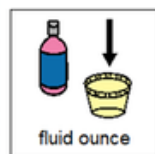


Christa Joy, Special Needs for Special Kids



There are 2 books in this unit. This one is 33 pages long and talks about the different units of volume and which one to use in different situations.

The smallest measurement is a **fluid ounce**. One fluid ounce is about how much liquid would fit in a medicine cup.



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The book also comes as a recorded PowerPoint show or mp4 movie file that you can play rather than print out.



We use **in<sup>3</sup>** in place of inches when we are calculating the volume.

**in x in x in**



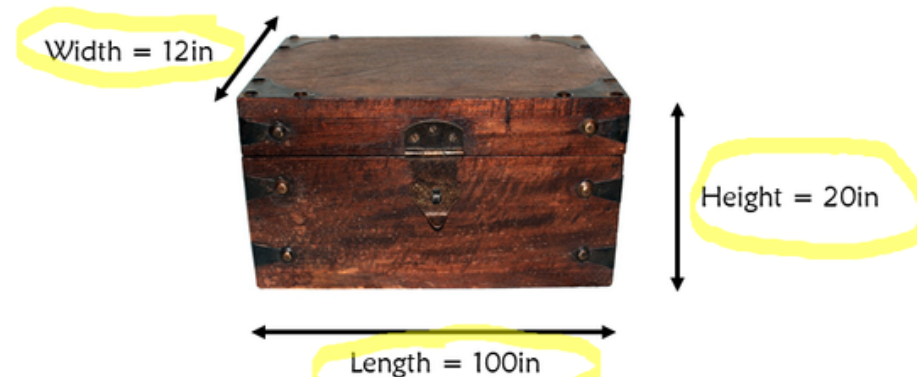
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This book is 16 pages and talks about how to calculate volume when you know the length, width, and height.

The book also comes as a recorded PowerPoint show or mp4 movie file that you can play rather than print out.

Here is the first container:




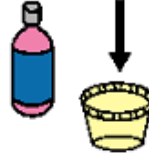













**Volume = 100in x 12in x 20in**

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 volume	 capacity	 liquid	 fluid ounce	fl. oz.
 cup	 pint	pt.	 quart	qt.
 gallon	gal.	 more	 less	= same
 repeat that	 I like that	 I don't like that	 I don't know	 I need a break

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This unit comes with a vocabulary board.

Vocabulary boards are great for ALL students to assist with participation and engagement in group discussions.

Tips on how to use in the unit!!



### volume

The total amount of space a liquid takes up in a container.



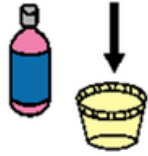
### capacity

The maximum amount a container can hold.



### fluid ounce

How much liquid fits in a medicine cup.



### fl. oz.

Abbreviation for fluid ounce.

### fl. oz.

### cup

About the amount of liquid in a juice box. Equals 8 fluid ounces.



### pint

About the amount of liquid in a small ice cream container. Equals 2 cups.



### pt.

Abbreviation for pint.

### pt.

### quart

About the amount of liquid in a container of orange juice. Equals 2 pints. Equals 4 cups.



*This unit also comes with 11 vocabulary cards. These are used in group activities during the first week of instruction.*

1  
CUP  
250  
ml



# Group Activities



- Activity 1
  - Make a set of volume flash cards for each student in the group
  - Show students a picture of an object and have them hold up the measurement card they would use
- Activity 2
  - Make as many copies of the recording sheet as you need
  - You will need measuring cups with milliliters listed on the side
  - Have students choose various liquids to measure
  - It is important for them to estimate the volume first to build a better conceptual understanding of how much volume relative liquids take up
- Activity 3
  - Students will need measuring tapes or rulers and a calculator
  - Gather a variety of containers
  - Have students first estimate the volume
  - Measure the length, width, and height of the container
  - Use a calculator to figure out the volume
  - Check answer against the estimation (students should not better the mo

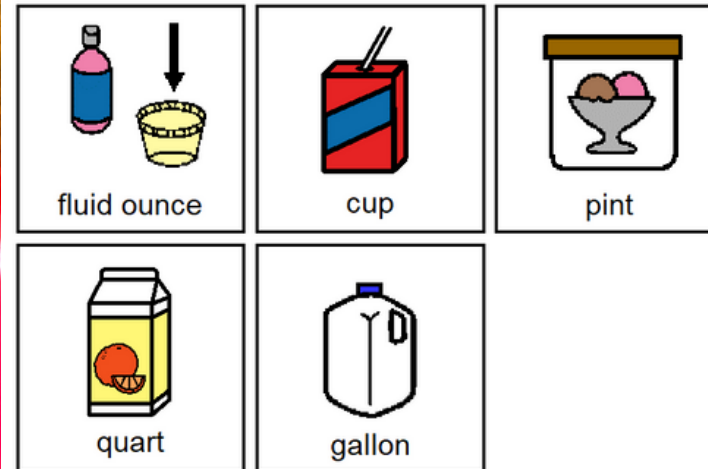
The Picture Comm  
Worldwide, Us

Name: \_\_\_\_\_

Item	Estimate Volume	Actual Volume

## Activity 1

Flashcards: Print a set (either as a strip or cut apart) for each student on cardstock. Laminate for longer durability.



## Activity 2

Name: \_\_\_\_\_

$$V = l \times w \times h$$

Item	Estimate Volume	length	width	height	Actual Volume

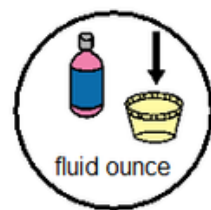
## Activity 3

There are group activities you can do each day. It includes flashcards in color and black and white. One activity has students practice using the correct unit of measurement and one has students practice estimating and calculating volume.



Errorless version

Place the images below in the circle map on the previous page that show examples of fluid ounces.



Place the images below in the circle map on the previous page **ONLY IF** they relate to fluid ounces.



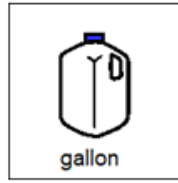
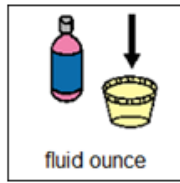
There are 5 circle maps in this unit.

- fluid ounce
- cup
- pint
- quart
- gallon

Circle maps are a great way for students to see the concept at a glance. There are 2 versions:

- One is errorless
- One has wrong answers mixed in students will have to set aside











fl oz	gasoline	nail polish	eye drops	keg
paint	soda	milk	gal	Kool-Aid
bucket of water	lotion	perfume	soy sauce	laundry soap
pool	medicine	mouth wash	pitcher of lemonade	vanilla

There are 2 sorting activities looking at the various units of volume. Suggestions for differentiation are included.








 fluid ounce				 gallon
 fluid ounce				 gallon
 fluid ounce				 gallon

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 milk	 nail polish	 soda
 Kool-Aid	 eye drops	 pool
 vanilla	 gasoline	 pitcher of lemonade

Students will put objects in order depending on relative capacity.

 fluid ounce		 pint		 gallon
	 cup		 quart	

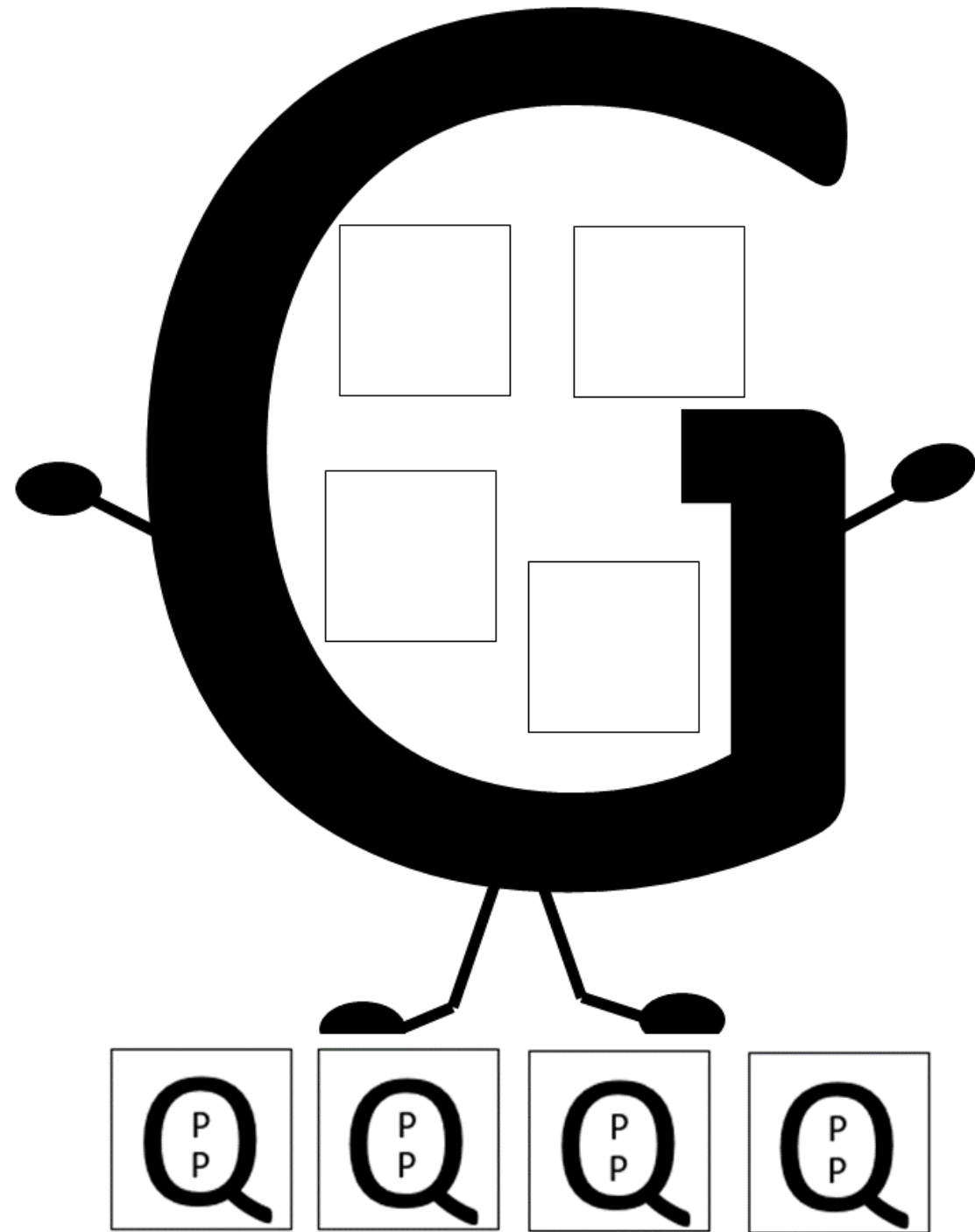
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Ordering volume amounts.

 cup	 quart			
 fluid ounce	 gallon	 pint		
 fluid ounce	 gallon	 pint	 quart	 cup

The second activity has students fill in the missing measurements.





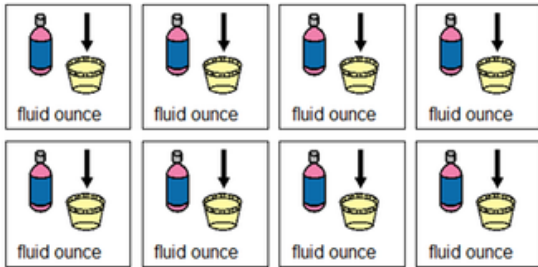
*There is a simplified version of gallon man for students to complete and use as a reference throughout the unit.*



Look at each unit of measurement below and fill in the boxes.

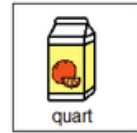


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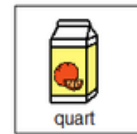
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Look at each unit of measurement below and fill in the boxes.



=

--	--



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There are several activities where students illustrate equivalent volumes.

↑  
CUP  
250  
ml



Name: \_\_\_\_\_

version 1

Circle the **best unit** to determine the volume following containers or objects.

 fluid ounce    quart    gallon	 fluid ounce    pint    quart	 cup    quart    gallon
 cup    quart    gallon	 fluid ounce    quart    gallon	 fluid ounce    pint    gallon
 fluid ounce    quart    gallon	 fluid ounce    pint    gallon	 fluid ounce    pint    quart

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Name: \_\_\_\_\_

version 2

Circle the **best unit** to determine the volume following containers or objects.

 fluid ounce    cup    gallon	 fluid ounce    quart    gallon	 fluid ounce    pint    gallon
 fluid ounce    quart    gallon	 fluid ounce    cup    quart	 fluid ounce    quart    gallon
 fluid ounce    quart    gallon	 fluid ounce    pint    gallon	 cup    quart    gallon

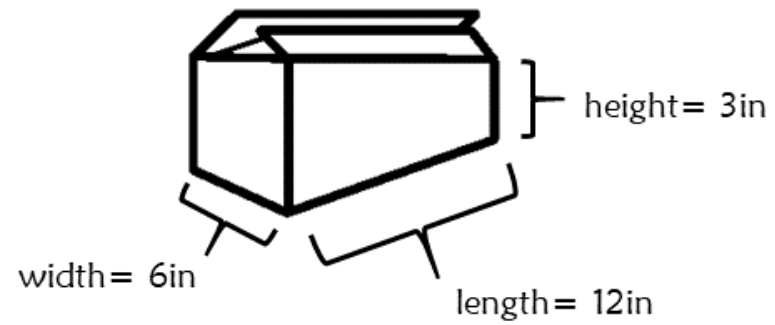
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There are 2 worksheets where students will look at an object and circle the best unit of measure depending on its size. They are in color and black and white.

1  
CUP  
250  
ml



Calculate the volume by filling in the missing information.



**volume = length x width x height**

**volume = length x width x height**

**volume =**  x  x

**volume =**   **in<sup>3</sup>**

There are 2 sets of worksheets where students will calculate volume. Set one (shown here) has step-by-step directions for students to follow.





Using a calculator, determine the volume for each of the containers below. Remember  $\text{in} \times \text{in} \times \text{in} = \text{in}^3$



Length = 10in  
Width = 10in  
Height = 30in

Volume =



Length = 15in  
Width = 10in  
Height = 40in

Volume =



Length = 4in  
Width = 4in  
Height = 8in

Volume =



Length = 10in  
Width = 10in  
Height = 20in

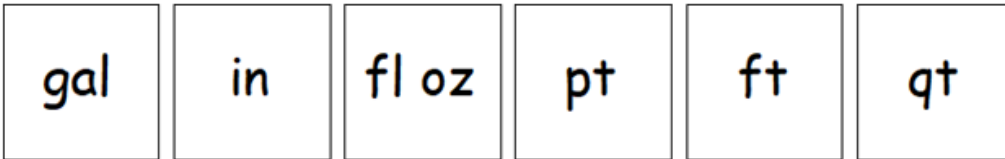
Volume =

Set 2 gives students the information they need, but they must go through the steps themselves.

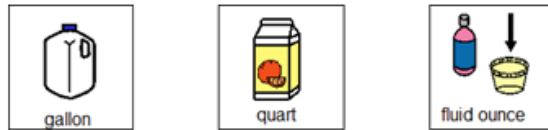




1. Circle the all the measurements used for volume:



2. When measuring **small** amounts use:



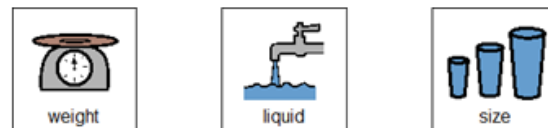
3. When measuring **larger** amounts use:



4. How many pints are in one quart?



5. Volume is a way to measure the amount of:



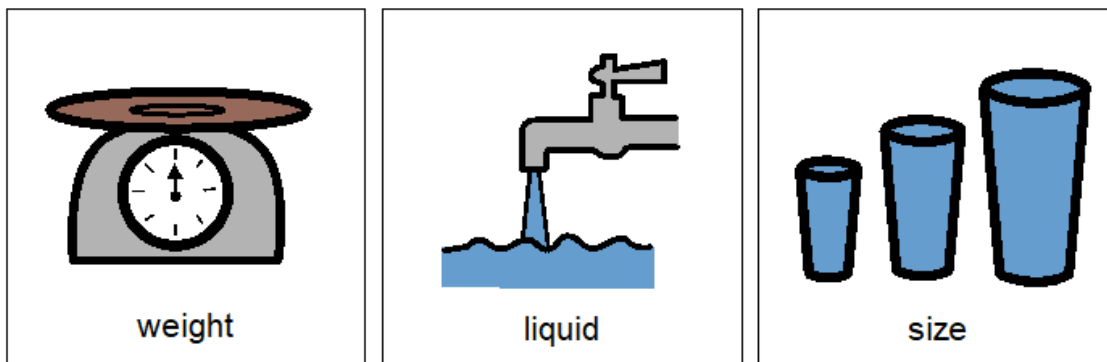
FINALLY the assessment!!  
There are 3 versions. This version has 10 questions with 3 picture choices for each question.

Answer key included.

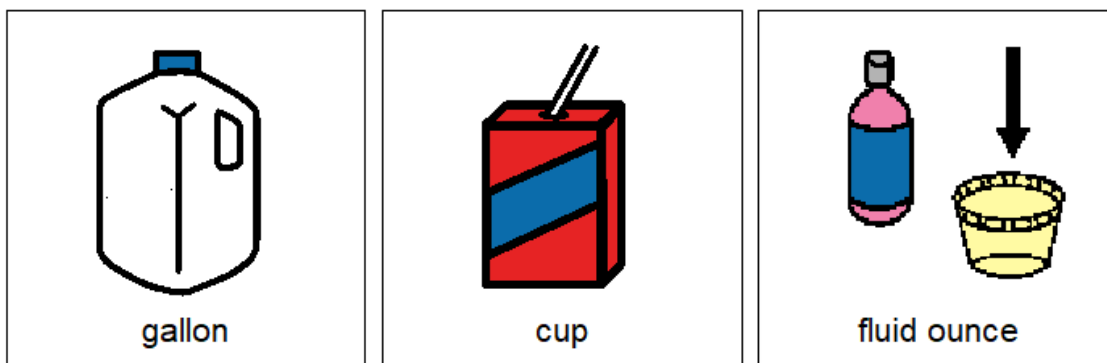


Print onto cardstock or mount on index cards. Cut pictures apart and show student answer choices for each question.

Q 5



Q 6



With this version, you cut out the answer choices and glue them on index cards. Ask the student the question, and they point to the correct answer.



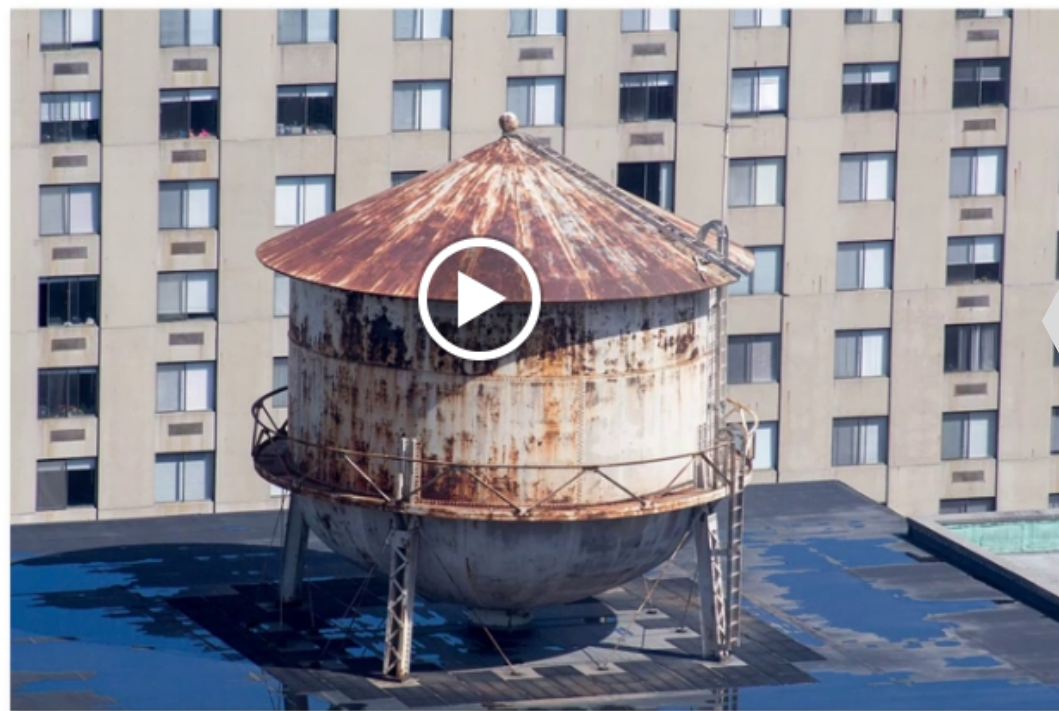
1. Circle the all the measurements used for volume:
  - A. gal
  - B. in
  - C. fl oz
  - D. pt
  - E. ft
  - F. qt
2. When measuring small amounts use:
  - A. gallon
  - B. quart
  - C. fluid ounce
3. When measuring larger amounts use:
  - A. cup
  - B. gallon
  - C. fluid ounce
4. How many pints are in one quart?
  - A. 2
  - B. 10
  - C. 12
5. Volume is a way to measure the:
  - A. weight
  - B. amount of liquid
  - C. size
6. We usually buy milk in what size at the store?
  - A. gallon
  - B. cup
  - C. fluid ounce

*Then, there is a standard multiple choice format which you can also use as a recording sheet when giving assessments 1:1.*



Listen to  
the book  
read aloud

Some containers can hold a lot of liquid.

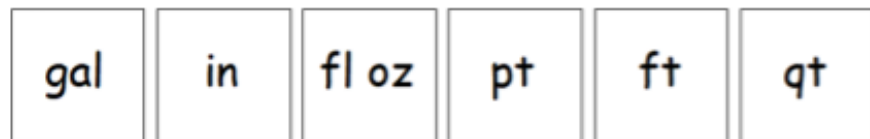


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*This unit also has  
digital activities.  
There is a movie  
version of the  
books students  
can listen to read  
aloud.*



1. Circle the all the measurements used for volume:



2. When measuring **small** amounts use:



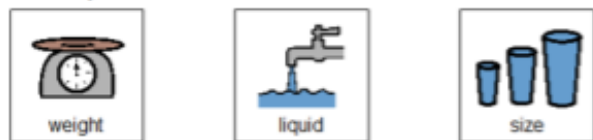
3. When measuring **larger** amounts use:



4. How many pints are in one quart?

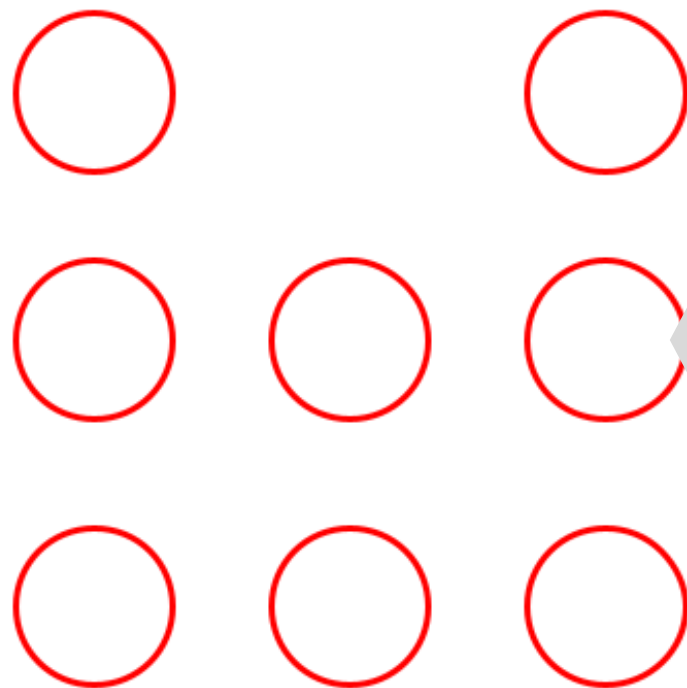


5. Volume is a way to measure the amount of:



### VOLUME ASSESSMENT

Move the circles over the correct answers.

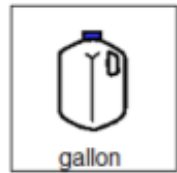
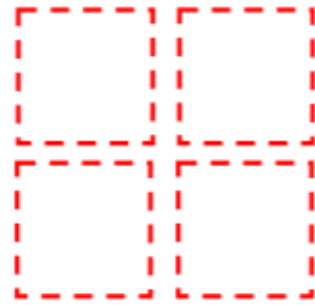


The digital activities have students click and drag their answers.

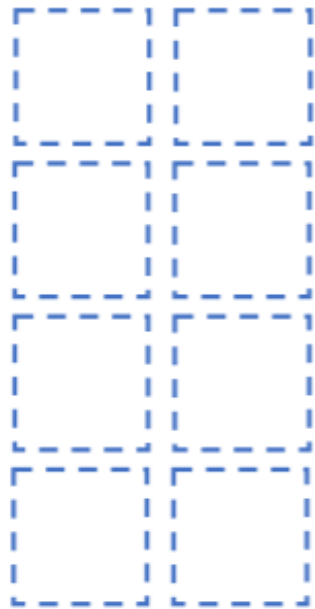




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differentiated

### VOLUME EQUATIONS

- 1- Place enough quarts in the squares to make up a gallon.
- 2- Place enough pints in the squares to make up a gallon.



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There are 2 sets of slides. One set has color-coding for more support.

These make great independent work centers.





I realize there will be some students out there unable to do cutting activities. I have a blog post with ways to complete activities without a pair of scissors!!

[Click Here to read more!!](#)