

Measuring Capacity

Adult Guidance with Question Prompts



Check that children understand that to measure the capacity of a container, each unit of measure should be full and counted until the container shows full capacity. Children select a container, then measure the capacity with spoonfuls of sand or water. They then choose a different unit to use, such as a lid or yogurt pot. Children compare the number of units used and consider why there is a difference. They then decide which unit would be more suitable to find the capacity of smaller and larger containers.

Children will need sand or water, spoons, smaller vessels to use as measuring units and larger containers.

How many spoonfuls fill the bowl?

Which container will you choose to fill?

How many spoonfuls do you think it will hold?

Can you show me how to find out? What else could you use to measure its capacity?

Do you think your container will hold more, less or the same number as the spoonfuls? Why?

Would a spoon or bowl be better to measure the capacity of a cup?

Can you explain why?

Why would a bowl not be very useful?

Would a spoon or cup be better to measure the capacity of a cup?

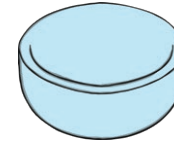
How come?

What else could you use to measure the capacity of a cup or bucket?

Measuring Capacity



The bowl has a capacity of spoonfuls.



Choose a container.

How many spoonfuls does it hold?

The has a capacity of spoonfuls.

Choose something new to measure the capacity of your container with. Did you use the same number as the spoonfuls?

The spoon holds the .

more than

less than

the same as

Would a spoon or bowl be better to measure the capacity of a cup?

Would a spoon or cup be better to measure the capacity of a bucket?

Measuring Capacity

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Children understand that to measure the capacity of a container, each unit of measure should be full. They also apply their reasoning skills to compare the capacity of containers filled with different units.

For the additional challenge, children will need sand or water, spoons, smaller vessels to use as measuring units and larger containers.

How many glasses can you see?

Are they all full?

Who do you agree with?

Can you explain why?

What do you know about the spoons?

How many metal spoons have the same capacity as one wooden spoon?

How many wooden spoonfuls filled Nazia's bowl?

How many metal spoonfuls filled Isla's bowl?

What can you do to work out if it is the same amount or different?

Is there a number pattern that could help?

Make a capacity challenge for a friend to solve.

Choose a unit to measure the capacity of a container.

Then use a different unit to measure the same container.

Tell your friend the number of units used (one true and one false).

Can your friend decide which statement is true and which is false?

Can they explain why? Can they prove it?

Measuring Capacity



The carton of juice was full.

Ted and Eli poured it all into the glasses.

The carton has a capacity of 4 glasses.



I think it holds less.

Who do you agree with? Explain your answer.

I used 5 spoonfuls of cereal to fill my bowl.



I used 10 spoonfuls.



The bowls have capacities.

the same

different

Measuring Capacity

Adult Guidance with Question Prompts



Children understand how to use non-standard units to measure the capacity of containers. They apply their problem-solving skills to work out how many units would fill different quantities of containers. Children then use this information to complete a capacity challenge with more than one step.

For the additional challenge, children will need sand or water, spoons, smaller vessels to use as measuring units and larger containers.

Which has the greatest capacity, the carton or the jug?

How do you know?

If two cartons fill one jug, how many will fill two jugs?

Is there a number pattern that can help you?

What can you do to find out how many jugs ten cartons will fill?

Can you show me?

How many glasses does one jug fill?

If one jug fills ten glasses, how many will two jugs fill?

Can you continue the pattern?

How can you find out how many jugs will fill 50 glasses?

What can you do to check?

What do we know about the cartons?

What do we know about the glasses?

What could be your first step to solve this challenge?

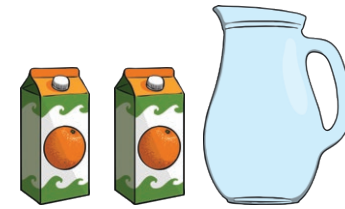
What could you do next?

What could you do to check?

Measuring Capacity



2 cartons fill 1 jug.



How many cartons will fill 2 jugs?

Can you continue the pattern?

cartons fill 3 jugs. cartons fill 4 jugs.

How many jugs would 10 cartons fill?



What if 1 jug fills 10 glasses?



How many glasses would 2 jugs fill?

Can you continue the pattern?

How many jugs would fill 50 glasses?

How many cartons would fill 30 glasses?



The bowl has a capacity of three spoonfuls.

Answers will vary according to the units used.

Children use fewer units with greater capacities than units with smaller capacities to fill the same container.

Children should identify that the spoon is better to measure the capacity of a cup as the bowl would overflow it.

Children should identify that although the spoon could be used to measure the capacity of the bucket, the cup would be better as it wouldn't take as long but it would still be accurate.

Eli is correct.



The glasses aren't full, so the carton held less than four glasses of juice.

The bowls have the same capacity. One wooden spoon has the same capacity as two metal spoons, so five wooden spoonfuls have the same capacity as ten metal spoonfuls.

2 cartons fill 1 jug



4 cartons

6 cartons fill 3 jugs.

8 cartons fill 4 jugs.

1 jug fills 10 glasses

20 glasses

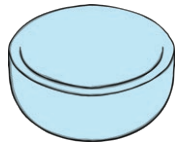
5 jugs fill 50 glasses.

6 cartons fill 30 glasses.

Measuring Capacity



The bowl has a capacity of spoonfuls.



Choose a container.

How many spoonfuls does it hold?

The has a capacity of spoonfuls.

Choose something new to measure the capacity of your container with. Did you use the same number as the spoonfuls?

The spoon holds the .

more than

less than

the same as

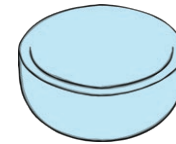
Would a spoon or bowl be better to measure the capacity of a cup?

Would a spoon or cup be better to measure the capacity of a bucket?

Measuring Capacity



The bowl has a capacity of spoonfuls.



Choose a container.

How many spoonfuls does it hold?

The has a capacity of spoonfuls.

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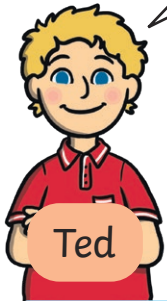
Would a spoon or cup be better to measure the capacity of a bucket?

Measuring Capacity



The carton of juice was full.
Ted and Eli poured it all into the glasses.

The carton has a capacity of 4 glasses.



Ted



Eli

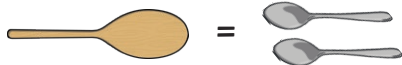
I think it holds less.

Who do you agree with? Explain your answer.

I used 5 spoonfuls of cereal to fill my bowl.



Nazia



I used 10 spoonfuls.



Isla



The bowls have capacities.

the same

different

Measuring Capacity



The carton of juice was full.
Ted and Eli poured it all into the glasses.

The carton has a capacity of 4 glasses.



Ted



Eli

I think it holds less.

Who do you agree with? Explain your answer.

I used 5 spoonfuls of cereal to fill my bowl.



Nazia



I used 10 spoonfuls.



Isla



The bowls have capacities.

the same

different

Measuring Capacity



2 cartons fill 1 jug.



How many cartons will fill 2 jugs?

Can you continue the pattern?

cartons fill 3 jugs. cartons fill 4 jugs.

How many jugs would 10 cartons fill?



What if 1 jug fills 10 glasses?



How many glasses would 2 jugs fill?

Can you continue the pattern?

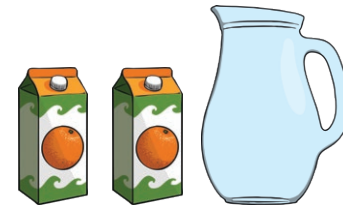
How many jugs would fill 50 glasses?

How many cartons would fill 30 glasses?

Measuring Capacity



2 cartons fill 1 jug.



How many cartons will fill 2 jugs?

Can you continue the pattern?

cartons fill 3 jugs. cartons fill 4 jugs.

How many jugs would 10 cartons fill?



What if 1 jug fills 10 glasses?



How many glasses would 2 jugs fill?

Can you continue the pattern?

How many jugs would fill 50 glasses?

How many cartons would fill 30 glasses?

Measuring Capacity



To measure capacity.



You will need water or sand, cups, spoons and different containers to fill.



How many cupfuls will each container hold?

Container	bowl 	bucket 			
Number of Cupfuls					

Which container holds the **most** cupfuls?

The holds the most cupfuls.



Which container holds the **fewest** cupfuls?

The holds the fewest cupfuls.



How many spoonfuls will each container hold?



Container	bowl 	bucket 			
Number of Spoonfuls					

Which container holds the **most** spoonfuls?

The holds the most spoonfuls.

Which container holds the **fewest** spoonfuls?

The holds the fewest spoonfuls.

What's the same about your answers?

The holds the most spoonfuls and cupfuls.

The holds the fewest spoonfuls and cupfuls.

Measuring Capacity



To measure capacity.



You will need water or sand, a cup and a spoon to use as units to measure with, plus different containers to fill.





How many cupfuls fill each container?

Container	bowl 	bucket 	Which container holds the most cupfuls? _____
Number of Cupfuls			Which container holds the fewest cupfuls? _____



How many spoonfuls fill each container?

Container	bowl 	bucket 	Which container holds the most spoonfuls? _____
Number of Spoonfuls			Which container holds the fewest spoonfuls? _____

Did you use more **cupfuls** or **spoonfuls**?

Why did you use more of these? Use the words to help you fill in the blanks.

The holds than the .

It has a capacity.

smaller cup spoon more less greater

Measuring Capacity

To measure capacity.





You will need water or sand, a cup and a spoon to use as units to measure with, plus different containers to fill.

Pick a small container to fill.

Draw your container here.



Use different units to measure the capacity of your container.

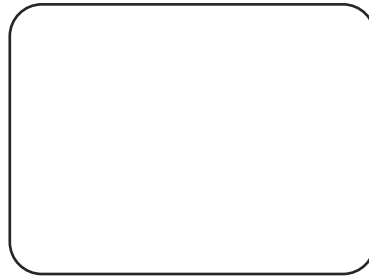
Unit	spoon 	cup 			
Number of Units					

What was the best unit to measure the capacity of a small container?



Why?

Pick a larger container to fill.

Draw your container here.



Use different units to measure the capacity of your container.

Unit	spoon 	cup 			
Number of Units					

What was the best unit to measure the capacity of the larger container?

Why?

Measuring Capacity Answers

★

Answers will depend on the containers and units available.

The most cupfuls or spoonfuls will be required to fill containers with the greatest capacity. The fewest cupfuls or spoonfuls will be required to fill containers with the smallest capacity.

★★

Answers will depend on the containers and units available. More smaller units will be required to fill a container because they have a smaller capacity.

★★★

Answers will depend on the containers and units available.

Units such as spoons would be suitable for containers with a smaller capacity. Larger units may overflow the smaller containers. Smaller units are not always suitable to measure the capacity of larger containers, as there would be too many units required to count reliably.