

Board Games for Early Mathematics: Pre-game assessment

Use this conversational assessment with an individual to figure out where to start.

For more info, visit ReckonMath.com.

Learner's name: _____

Learner's age: _____

Date of assessment: _____

Materials to have with you during this assessment:

A printed copy of the assessment

A pencil or pen

Ten frame and double ten frame cards

You can use this script to introduce the assessment to a new learner:

"We're going to be playing games. They're going to help you get better at the math you need to learn. I don't want to waste your time giving you stuff you already know. So I need to find out where your skills are now. To help me find that out, I want to ask you a bunch of questions. We don't have to do this every time. It's just because it's the first day, so I can see where you are now. Is that OK?"

Useful information about a learner	Games and activities to start with if the learner needs to review content	Use this space to write down a learner's responses during a conversational interview
<p>Can the learner say how many objects are in a group?</p>	<p>Pre-game activities in Counting.</p>	
<p>Can the learner identify numbers in ten frames without having to count the dots one by one? For example, a learner might subtract empty squares from the number ten, or recognize the whole number visually without having to think at all. Start by showing a ten frame representation of the number 9 and say "How many dots on this card?" Repeat for at least two more numbers, perhaps 7 and 14.</p>	<p>"Recognize [number] and [number]", "[Number] is the magic number", "Name ten frame numbers", "How many dots?", "How many squares are empty", and "See a numeral, find the frame", all in Number Properties.</p>	
<p>When you say two single-digit numbers, does the learner know which one is larger? What about 2-digit numbers? How confident is the learner?</p>	<p>"Which is more?", "Which is less?", "Find a larger number", and "Find a smaller number" in Number Properties, and "Which is more? 2-digit numbers" and "Which is less? 2-digit numbers" in Place Value.</p>	

Useful information about a learner	Games and activities to start with if the learner needs to review content	Use this space to write down a learner's responses during a conversational interview
<p>Can the learner add single-digit numbers without having to count? To get this information, ask “What’s 2 plus 2? OK, how did you figure it out?” “What’s 3 plus 4? How did you figure it out?” “What’s 8 plus 5? OK, 9 plus 7?” Those problems will probably tell you what you need to know. Counting strategies are good for younger children who are still starting to get comfortable with addition. Once learners are about 8 years old, if they are still counting it is a good idea to go over addition.</p>	<p>The addition games and activities, but only after the learner feels confident about all of the material in Number Properties and Mathematical Symbols. It may be helpful to start with “Think about place value”, “Which is more? 2-digit numbers” and “Which is less? 2-digit numbers”, all in Place Value.</p>	
<p>Say “I’m going to write something. You tell me if it is true or false” and write “$3 = 3$”. The correct answer is <i>true</i> because the equals sign means that the amount on the left is the same as the amount on the right. Does the learner answer correctly? How confident is the learner? Note: Some learners think this question is odd because to them the correct answer seems obvious. If this happens, you can respond “Just checking. Some people think no plus sign means it’s wrong. But you’re correct, it’s true.”</p>	<p>“Is the same as”, “Equals sign”, and “Inequality sign”, all in Mathematical Symbols.</p>	
<p>When you say single-digit numbers, does the learner know whether they are even or odd? What about 2-digit numbers? How confident is the learner?</p>	<p>“Identify odds and evens” in Number Properties, and “Identify odd and even 2-digit numbers” in Place Value.</p>	

Useful information about a learner	Games and activities to start with if the learner needs to review content	Use this space to write down a learner's responses during a conversational interview
<p>Can the learner count backwards starting and ending at numbers you give them? Some learners can recite the word list “ten, nine, eight” and so on down to 1, but still need to learn to count backwards starting at numbers that are not 10 and ending at numbers that are not 1.</p>	<p>“Travel on a number path backwards, 15-6”, “Count back from different numbers, 1-10”, and “Count back from different numbers, 11-19” in Number Properties.</p>	
<p>Can the learner count by twos from 0 to 20? Can the learner count by twos from 1 to 21 (in other words, state the odd numbers from 1 to 21 in ascending order)?</p>	<p>“Travel on a number line/path by twos, evens”, “Count by twos to 20 starting on 0”, “Count by twos from different numbers, evens”, “Travel on a number line/path by twos, odds”, “Count by twos to 21 starting on 1”, “Count by twos from different numbers, odds”, all in Number Properties.</p>	
<p>Can the learner count by fives, tens, and hundreds, starting and ending at numbers you give them? For example, can the learner count by fives starting at 25 and ending at 45? Some learners can recite the word list “five, ten, fifteen” and so on to 100, but still need to learn to count by fives starting at numbers that are not 5 and ending at numbers that are not 100.</p>	<p>“Travel on a number line/path by __”, “Count by __ to __”, “Count by __ from different numbers”, all in Number Properties.</p>	

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<p>Can the learner find the ones and tens places of 2-digit numbers? What about other places in larger numbers?</p>	<p>Place Value games and activities.</p>	
<p>Does the learner know the value of the digits in different places (for example, that a 3 in the tens place means thirty)? It is good to check whether they understand how much a 3 in the tens place means AND whether they know the word "value". You can ask like this: "In the number 32, what is the value of the 3?" Then if they don't know, ask in a different way: "I mean, in the number 32, how much is that 3 worth?"</p>	<p>Place Value games and activities.</p>	
<p>Can the learner round 2-digit numbers to the nearest ten?</p>	<p>Rounding games and activity.</p>	

Useful information about a learner	Games and activities to start with if the learner needs to review content	Use this space to write down a learner's responses during a conversational interview
<p>Does the learner understand what multiplication is conceptually? For example, say "If someone asks you what 6×7 is, you might not know that the answer is 42, but do you know what they mean when they say 6 times 7? What does it mean to say 6 times 7?" This wording lets learners know what you mean without giving away the answer. Answers like "It means six, seven times" or "It's six groups of seven" indicate understanding.</p>	<p>The first five activities and games in the Multiplication section.</p>	
<p>Can the learner find answers to multiplication facts without having to skip count? To get this information, ask "What's 2 times 4? OK, how did you figure it out?" "What's 3 times 7? How did you figure it out?" "How about 5 times 9? OK, 6 times 8?" Those problems will probably tell you what you need to know. Skip counting is when a learner has to think "5, 10, 15, 20, 25, 30, 35, 40, 45" before they can say what 5×9 is. If a learner is figuring out 5×9 by thinking "I know 5×8 is 40, and 5 more is 45" that is not skip counting.</p>	<p>The multiplication games and activities, but only after the learner feels confident about all of the material in Addition, Subtraction, and Place Value.</p>	
<p>Can the learner find the answers to some multiplication facts without having to skip count, but not others? One way to find the specific facts they still need to learn is to have them do the Multiplication activity "Identify multiplication facts you can learn better". Or, just ask them: "So tell me, which multiplication facts do you still need to learn better? Not just facts you can't figure out, but also the facts you have to skip count to get."</p>	<p>Go through the activities and games in the Multiplication section in order. For each one, ask the learner one or two example problems. Skip ahead to the next game or activity if the learner responds confidently and correctly.</p>	

Useful information about a learner	Games and activities to start with if the learner needs to review content	Use this space to write down a learner's responses during a conversational interview
<p>Does the learner understand what division means conceptually? For example, say “If someone asks you what $12 \div 3$ is, you might not know that the answer is 4, but do you know what they mean when they say 12 divided by 3? What does it mean to say 12 divided by 3?” This wording lets learners know what you mean without giving away the answer. Answers like “Three people get twelve things, how many each” or “Three for each person, twelve things, how many people” indicate understanding.</p>	<p>The first five activities and games in the Division section.</p>	
<p>Can the learner find answers to division facts without having to skip count? To get this information, ask “What’s 12 divided by 4? OK, how did you figure it out?” “What’s 54 divided by 9? How did you figure it out?” and so on.</p>	<p>If the learner still needs to learn some multiplication facts, work on those first. Then go through the activities and games in the Division section in order. For each one, ask the learner one or two example problems. Skip ahead to the next game or activity if the learner responds confidently and correctly.</p>	