

SOAR Intervention Checklist

GRADES
1 to 3


Number and Operations in Base Ten:
Place Value

Category I: Understanding, Reasoning with, and Using Numbers Within a Hundred

Category I	Recognizes Numbers and Understands Magnitude of Number		Recognizes Patterns and Relationships																																										
		1. Tell me about the number you see below. <p style="text-align: center;">27</p>	2. Tell me what you know about these numbers. <p style="text-align: center;">43 34</p>	3. Study how the numbers are organized in the table below. <table border="1" style="margin-left: auto; margin-right: auto;"> <tr><td>20</td><td>21</td><td>22</td><td>23</td><td>24</td><td>25</td><td>26</td><td>27</td><td>28</td><td>29</td></tr> <tr><td>30</td><td>31</td><td>32</td><td>33</td><td>34</td><td>35</td><td>36</td><td>37</td><td>38</td><td>39</td></tr> <tr><td>40</td><td>41</td><td>42</td><td>43</td><td>44</td><td>45</td><td>46</td><td>47</td><td>48</td><td>49</td></tr> <tr><td>50</td><td>51</td><td>52</td><td>53</td><td>54</td><td>55</td><td>56</td><td>57</td><td>58</td><td>59</td></tr> </table>	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	4. Study the numbers below and tell me what you notice. <p style="text-align: center;">33, 43, 53, 63</p>
20	21	22	23	24	25	26	27	28	29																																				
30	31	32	33	34	35	36	37	38	39																																				
40	41	42	43	44	45	46	47	48	49																																				
50	51	52	53	54	55	56	57	58	59																																				
Recognizes and Makes Use of Structure of Number	<input type="checkbox"/> Recognizes and reads number(s) accurately. <input type="checkbox"/> Represents the number accurately using place value (shows 2 tens and 7 ones). <input type="checkbox"/> Represents the number accurately but without using place value (shows 27 using all ones).	<input type="checkbox"/> Recognizes and reads number(s) accurately. <input type="checkbox"/> Identifies in which number a common digit has a greater magnitude (4 in 43 is greater than the 4 in 34).	<input type="checkbox"/> References number(s) accurately. <input type="checkbox"/> Identifies the 0-9 pattern in the ones place. <input type="checkbox"/> Identifies the 0-9 pattern in the tens. <input type="checkbox"/> Identifies a pattern that is not related to place value. (e.g., <i>The ones place stays the same in each column, or both the tens and the ones change by 1 as you move diagonally.</i>) _____ _____	<input type="checkbox"/> References number(s) accurately. <input type="checkbox"/> Identifies and explains the 0-9 pattern in the tens. <input type="checkbox"/> Extends the -10 pattern. <input type="checkbox"/> Extends the +10 pattern.	<input type="checkbox"/> References number(s) accurately. <input type="checkbox"/> Indicates 10 units of ones. <input type="checkbox"/> Indicates 10 units of tens. <input type="checkbox"/> Indicates 10 ones is 10. <input type="checkbox"/> Indicates 10 tens is 100.																																								
Provides Explanation	<input type="checkbox"/> States the magnitude of the digits in the number by place value position (2 in 23 is 20 and the 3 in 23 is 3).	<input type="checkbox"/> States the magnitude of a common digit in two different numbers (4 in 43 is 40 and 4 in 34 is 4).	<input type="checkbox"/> States the digit in the ones place is increasing by 1 or it is like counting by ones. <input type="checkbox"/> States the digit in the tens place is increasing by 1 ten or it is like counting by tens.	<input type="checkbox"/> Explains the digit in the tens place changes because it is increasing by 1 ten or +10. <input type="checkbox"/> Explains the digit in the tens place increases by 1, does not reference 1 ten. <input type="checkbox"/> Explains how and why the number extends the +10 pattern (e.g., <i>73 is 10 more than 63 or that they added 10 to 63 to arrive at 73</i>). <input type="checkbox"/> Explains how and why the number extends the -10 pattern (e.g., <i>23 is 10 less than 33 or that they took 10 away from 33 to arrive at 23</i>).	<input type="checkbox"/> Explains that the number of ones and the number of tens is the same, there are 10 ones and 10 tens.																																								

To look across all 10 items of Category I, affix page 2 of the Category I checklist here.

Category I: Understanding, Reasoning with, and Using Numbers Within a Hundred (continued)

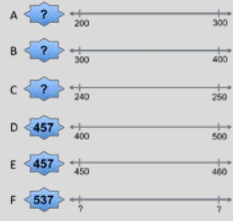
Category I		Reasoning About Place Value and Magnitude of Numbers			
Recognizes and Makes Use of Structure of Number	<p>6. We are going to be using the diagrams on this page to answer several questions about numbers.</p> 	<p>7. Put the numbers below in order from least to greatest.</p> <p style="text-align: center;">75, 45, 8, 72</p>	<p>8. Solve each equation in your head.</p> <p style="text-align: center;">25 + 9 = _____ 32 + 60 = _____ 21 + 49 = _____</p>	<p>9. Solve each equation in your head.</p> <p style="text-align: center;">70 - 10 = _____ 50 - 20 = _____ 80 - 50 = _____</p>	<p>Note: Student explanations will reveal if an understanding of the structure of number and/or magnitude of number was used or not used to calculate solutions; therefore there are no specific indicators listed in the <i>Provides Explanations</i> section of the checklist.</p>
	Provides Explanation	<ul style="list-style-type: none"> ___ Identifies a number that comes between two benchmark numbers (Items A-B). ___ Identifies the relative magnitude of a number in comparison to two benchmark numbers (Items C-D). ___ Determines the two nearest benchmark tens (40 and 50) for the given number (Item E). ___ Determines two numbers that are not the nearest tens for the given number (e.g., says 46 and 47) (Item E). ___ Determines “benchmarks” that 10 more and 10 less than the given number (e.g., says 35 and 55) (Item E). 	<ul style="list-style-type: none"> ___ Determines the order of all of the numbers. ___ Compares some numbers but does not order all of the numbers. <ul style="list-style-type: none"> ___ Identifies the number that is greatest. ___ Identifies the number that is least. 	<ul style="list-style-type: none"> ___ Determines sums accurately. ___ Uses a strategy based on the structure of number (check all that apply). <ul style="list-style-type: none"> ___ Counts on by tens and/or ones. ___ Decomposes the addends into tens and ones, adds the tens and ones separately, and then combines the amounts. ___ Moves an amount from one addend to another to make it easier to work with the number and then adds. ___ Increases or decreases an addend to make it easier to work with the number, adds the amounts, and then compensates for the original increase or decrease (compensation). ___ Other _____ ___ Uses a standard algorithm for addition on paper or mentally (a CCSS Grade 3 expectation) and <ul style="list-style-type: none"> ___ references place value while working or in explanation. ___ does not reference place value while working or in explanation. 	<ul style="list-style-type: none"> ___ Determines differences accurately. ___ Uses a strategy based on the structure of number (check all that apply). <ul style="list-style-type: none"> ___ Counts on by tens. ___ Counts back by tens. ___ Uses a known fact and references place value (e.g., 50 - 20 is like 5 tens - 2 tens = 3 tens, or 30, because I know 5 - 2 = 3). ___ Uses a known fact but does not reference place value (e.g., 50 - 20 is like 5 - 2 = 3, with a zero, so 30). ___ Other _____ ___ Uses a standard algorithm for addition on paper or mentally (a CCSS Grade 3 expectation) and <ul style="list-style-type: none"> ___ references place value while working or in explanation. ___ does not reference place value while working or in explanation.

Category II: Understanding, Reasoning with, and Using Numbers within a Thousand

Category II	Recognize Number and Magnitude of Number		Recognize Pattern and Relationship																																									
	10. What is this number? 145	11. Tell me what you know about these numbers. 435 543 354	12. Study the table. Tell me what you notice about how the numbers are organized in this table. <table border="1" style="margin-left: auto; margin-right: auto;"> <tr><td>270</td><td>271</td><td>272</td><td>273</td><td>274</td><td>275</td><td>276</td><td>277</td><td>278</td><td>279</td></tr> <tr><td>280</td><td>281</td><td>282</td><td>283</td><td>284</td><td>285</td><td>286</td><td>287</td><td>288</td><td>289</td></tr> <tr><td>290</td><td>291</td><td>292</td><td>293</td><td>294</td><td>295</td><td>296</td><td>297</td><td>298</td><td>299</td></tr> <tr><td>300</td><td>301</td><td>302</td><td>303</td><td>304</td><td>305</td><td>306</td><td>307</td><td>308</td><td>309</td></tr> </table>	270	271	272	273	274	275	276	277	278	279	280	281	282	283	284	285	286	287	288	289	290	291	292	293	294	295	296	297	298	299	300	301	302	303	304	305	306	307	308	309	13. There are two sets of numbers below. We are going to talk about each set of numbers. Study the first set of numbers. A. 233, 243, 253, 263 B. 342, 442, 542, 642
270	271	272	273	274	275	276	277	278	279																																			
280	281	282	283	284	285	286	287	288	289																																			
290	291	292	293	294	295	296	297	298	299																																			
300	301	302	303	304	305	306	307	308	309																																			
Recognizes and Makes Use of Structure of Number	<ul style="list-style-type: none"> ___ Recognizes and reads number(s) accurately. ___ Represents the number accurately using place value (<i>shows 1 hundred, 4 tens, and 5 ones</i>). ___ Represents the number accurately but without tending to place value (<i>shows 14 tens and 5 ones, or 145 ones</i>). 	<ul style="list-style-type: none"> ___ Recognizes and reads number(s) accurately. ___ Identifies the number that is greatest by comparing the digits in the hundreds place (<i>5 is greater than 4 or 3, so 5 hundreds is greater than 4 hundreds or 3 hundreds</i>). 	<ul style="list-style-type: none"> ___ References number(s) accurately. ___ Identifies the 0-9 pattern in the ones place. ___ Identifies the 0-9 pattern in the tens place. ___ Identifies the change in the hundreds place. ___ Indicates that there would be a 0-9 pattern in the hundreds place if the table continued. ___ Identifies a pattern but does not relate pattern and place value _____. 	<ul style="list-style-type: none"> ___ References number(s) accurately. ___ Identifies the 0-9 pattern in the tens place (Item A). ___ Extends the -10 pattern (Item A). ___ Extends the +10 pattern (Item A). ___ Identifies the 0-9 pattern in the hundreds place (Item B). ___ Extends the -100 pattern (Item B). ___ Extends the +100 pattern (Item B). 	<ul style="list-style-type: none"> ___ References number(s) accurately. ___ Indicates meaning of 1 as 1 one, 1 ten, and 1 hundred. 																																							
Provides Explanation	<ul style="list-style-type: none"> ___ States the magnitude of the digits in the number by place value position (<i>1 is 100, 4 is 40, and 5 is 5</i>). ___ Relates the model (diagram or blocks) to the place value of the digits in the number. 	<ul style="list-style-type: none"> ___ States the changing magnitude of a common digit in three different numbers (<i>3 tells us 30 in 435, 3 in 543, and 300 in 354</i>). 	<ul style="list-style-type: none"> ___ States the digit in the ones place is increasing by 1 or it is like counting by ones. ___ States the digit in the tens place is increasing by 1 ten or it is like counting by tens. 	<ul style="list-style-type: none"> ___ Explains the digit in the tens place changes because it is increasing by 1 ten or +10. ___ Explains the digit in the tens place increases by 1, does not reference 1 ten. ___ Explains the extension of the +10 pattern. ___ Explains the extension of the -10 pattern. ___ Explains the digit in the hundreds place changes because it is increasing by 1 hundred or +100. ___ Explains the digit in the hundreds place increases by 1, does not reference 1 hundred. ___ Explains the extension of the +100 pattern. ___ Explains the extension of the -100 pattern. 	<ul style="list-style-type: none"> ___ Explains that 10 ones are needed for a ten. ___ Explains that 10 tens are needed for a hundred. 																																							

To look across all 12 items of Category II, affix page 2 of the Category II checklist here.

Category II: Understanding, Reasoning with, and Using Numbers within a Thousand (continued)

Category II		Reasoning with Place Value (Compare, Order, Operate)			
Recognizes and Makes Use of Structure of Number	<p>15. We are going to be using the diagrams on this page to answer several questions about numbers.</p> 	<p>16. Put the numbers below in order from least to greatest.</p> <p style="font-size: 1.2em; font-weight: bold;">827, 943, 95, 842, 845</p>	<p>17. Solve the equations as quickly as you can and explain how you arrived at the solutions.</p> <p>240 + 45 = _____</p> <p>420 + 170 = _____</p> <p>380 + 550 = _____</p>	<p>18. Solve the equations as quickly as you can and explain how you arrived at the solutions.</p> <p>459 - 28 = _____</p> <p>652 - 210 = _____</p> <p>478 - 80 = _____</p> <p>587 - 490 = _____</p>	
	<p>Note: Student explanations will reveal if an understanding of the structure of number and/or magnitude of number was used or not used to calculate solutions; therefore there are no specific indicators listed in the <i>Provides Explanations</i> section of the checklist.</p>				
Provides Explanation	<ul style="list-style-type: none"> ___ Identifies a number that comes between two benchmark numbers. (Items A-C) ___ Identifies the relative magnitude of a number in comparison to two benchmark numbers. (Items D-E) ___ Determines the two nearest benchmark hundreds (500 and 600) for the given number. (Item F) ___ Determines the two nearest benchmark tens (540 and 560) for the given number. (Item F) ___ Determines two numbers that are not the nearest hundreds and/or tens for the given number. (Item E) ___ Determines “benchmarks” that are 100 more and less or 10 more and less (e.g., says 527 and 547 are 10 less and 10 more). (Item E) 	<ul style="list-style-type: none"> ___ Determines the order of all of the numbers. ___ Compares some numbers but does not order all of the numbers. <ul style="list-style-type: none"> ___ Identifies the number that is greatest. ___ Identifies the number that is least. 	<ul style="list-style-type: none"> ___ Determines sums accurately. ___ Uses a strategy based on the structure of number (check all that apply). <ul style="list-style-type: none"> ___ Counts on by hundreds, tens and/or ones. ___ Decomposes the addends into hundreds, tens, and ones, adds amounts separately, and then combines the amounts. ___ Moves an amount from one addend to another to make it easier to work with the number and then adds. ___ Increases or decreases an addend to make it easier to work with the number, adds the amounts, and then compensates for the original increase or decrease (compensation). ___ Other _____ ___ Uses a standard algorithm for addition on paper or mentally (a CCSS Grade 3 expectations) and <ul style="list-style-type: none"> ___ references place value while working or in explanation. ___ does not reference place value while working or in explanation. 	<ul style="list-style-type: none"> ___ Determines differences accurately. ___ Uses a strategy based on the structure of number (check all that apply). <ul style="list-style-type: none"> ___ Counts on by hundreds, tens, and/or ones. ___ Counts back by hundreds, tens, and/or ones. ___ Decomposes the subtrahend and subtracts in steps, may or may not decompose by place value (e.g., decompose by place value 652 - 210; 652 - 200 = 452, 452 - 21 = 432, 432 - 1 = 431; decompose without place value 478 - 80; 80 is 78 and 2; 478 - 78 = 400, 400 - 2 = 398). ___ Increases or decrease the subtrahend, subtracts, and then adjusts the result to compensate (e.g., 587 - 49; 587 - 50 = 537, 537 + 1 = 538) (compensation). ___ Other _____ ___ Uses a standard algorithm for addition on paper or mentally (a CCSS Grade 3 standard) and <ul style="list-style-type: none"> ___ references place value while working or in explanation. ___ does not reference place value while working or in explanation. 	
	<ul style="list-style-type: none"> ___ Expresses reasoning about the magnitude of the benchmark numbers to identify a number (e.g., says 221 is 21 more than 200 and a lot less than 300, or says 241 is just 1 more than 240 and 9 less than 250). ___ Expresses reasoning about the magnitude of each of the numbers (e.g., says 457 is closer to 460 than 450 because it is only 3 counts away from 460 and it is 7 counts away from 450). ___ Expresses reasoning about hundreds and tens to explain the benchmark numbers (e.g., 537 is between 530 and 540 because it is 7 more than 530 and 3 less than 540). 	<ul style="list-style-type: none"> ___ Expresses reasoning about hundreds, tens, and ones to compare and/or order the numbers. ___ Expresses reasoning about the number sequence (may reference number lines or a number coming before or after another number). 			

To look across all 12 items of Category II, affix page 3 of the Category II checklist here.

Category II: Understanding, Reasoning with, and Using Numbers within a Thousand (continued)

Reasoning with Place Value (Compare, Order, Operate) (continued)			
<i>Only ask if the student is in Grade 3 or higher, if student is in Grade 2 end the survey before asking 19.</i>			
Category II	19. Estimate the sum for the equation, and then calculate to figure out the exact sum. $532 + 349 = \underline{\hspace{2cm}}$	20. Estimate the difference for the equation, and then calculate to figure out the exact difference. $792 - 349 = \underline{\hspace{2cm}}$	
21. Solve the equations below in your head. $2 \times 40 = \underline{\hspace{2cm}}$ $60 \times 3 = \underline{\hspace{2cm}}$ $9 \times 70 = \underline{\hspace{2cm}}$			
Note: Student explanations will reveal if an understanding of the structure of number and/or magnitude of number was used or not used to calculate solutions; therefore there are no specific indicators listed in the <i>Provides Explanations</i> section of the checklist.			
Recognizes and Makes Use of Structure of Number	<input type="checkbox"/> Identifies a reasonable estimate for the sum of two three-digit numbers. <input type="checkbox"/> Uses accurate reasoning about place value and magnitude when determining an estimate. <input type="checkbox"/> Determines sums accurately. <input type="checkbox"/> Uses a strategy based on the structure of number (check all that apply). <input type="checkbox"/> Counts on by hundreds, tens and/or ones. <input type="checkbox"/> Decomposes the addends into hundreds, tens, and ones, adds amounts separately, and then combines the amounts. <input type="checkbox"/> Moves an amount from one addend to another to make it easier to work with the number and then adds. <input type="checkbox"/> Increases or decreases an addend to make an easier to work with number, adds the amounts, and then compensates for the original increase or decrease (e.g., $532 + 349$; $532 + 350 = 882$, $882 - 1 = 881$) (compensation). <input type="checkbox"/> Other _____	<input type="checkbox"/> Identifies a reasonable estimate for the difference of two three-digit numbers. <input type="checkbox"/> Uses accurate reasoning about place value and magnitude when determining an estimate. <input type="checkbox"/> Determines differences accurately. <input type="checkbox"/> Uses a strategy based on the structure of number (check all that apply). <input type="checkbox"/> Counts on by hundreds, tens, and/or ones. <input type="checkbox"/> Counts back by hundreds, tens, and/or ones. <input type="checkbox"/> Decomposes the subtrahend and subtracts in steps, may or may not decompose by place value (e.g., decompose by place value $792 - 349$; $792 - 300 = 492$; $492 - 40 = 452$; $452 - 9 = 443$; decompose without place value $792 - 349$; 349 as 342 and 7 ; $792 - 342 = 450$; $450 - 7 = 443$). <input type="checkbox"/> Increases or decrease the subtrahend, subtracts, and then adjusts the result to compensate (e.g., $587 - 49$; $587 - 50 = 537$, $537 + 1 = 538$) (compensation). <input type="checkbox"/> Other _____	<input type="checkbox"/> Determines products accurately. <input type="checkbox"/> Uses a related operation: addition or repeated addition. <input type="checkbox"/> Uses a strategy based on the structure of number (check all that apply). <input type="checkbox"/> Counts by tens. <input type="checkbox"/> Uses a known fact and references place value (e.g., 2×40 is like $2 \times 4 = 8$, so 2×4 tens = 8 tens, 80). <input type="checkbox"/> Uses a known fact but does not reference place value (e.g., 2×40 is like $2 \times 4 = 8$ but with a zero, so it is 80). <input type="checkbox"/> Other _____
Provides Explanation	<input type="checkbox"/> Uses a standard algorithm for addition on paper or mentally (a CCSS Grade 3 expectation) and <input type="checkbox"/> references place value while working or in explanation. <input type="checkbox"/> does not reference place value while working or in explanation.	<input type="checkbox"/> Uses a standard algorithm for addition on paper or mentally (a CCSS Grade 3 expectation) and <input type="checkbox"/> references place value while working or in explanation. <input type="checkbox"/> does not reference place value while working or in explanation.	<input type="checkbox"/> Uses standard algorithm for multiplication on paper or mentally (a CCSS Grade 5 expectation) and <input type="checkbox"/> references place value while working or in explanation. <input type="checkbox"/> does not reference place value while working or in explanation.