






# GO Solve™ Word Problems


## Aligns to 21<sup>st</sup> Century Community Learning Centers Criteria


The purpose of the 21<sup>st</sup> Century Community Learning Centers (21<sup>st</sup> CCLC) program is to create community learning centers that provide academic enrichment opportunities for children, particularly students who attend high-poverty and low-performing schools, to meet State and local student standards in core academic subjects, to offer students a broad array of enrichment activities that can complement their regular academic programs, and to offer literacy and other educational services to the families of participating children. The following chart details how *GO Solve™ Word Problems* can support the development of a 21<sup>st</sup> CCLC program. The criteria are drawn from the federal *21st Century Community Learning Centers Non-Regulatory Guidance*.


Key Criteria for 21 <sup>st</sup> CCLC Programs	 <i>GO Solve™ Word Problems</i>
1. Activities that provide remedial education and academic enrichment to improve academic achievement	<p><i>GO Solve Word Problems</i> positions students for success in algebra by laying a foundation of conceptual understanding and problem-solving skills. This engaging, research-based software program is aligned to State and National Standards in Mathematics. Students master problem solving through step-by-step instruction and practice, at their own pace and at a level automatically adapted to each student.</p> <p><i>Go Solve Word Problems</i> teaches students to recognize mathematical situations in word problems, comprehend problems with the aid of graphic organizers, and plan solutions with addition, subtraction, multiplication, and division. The instructional focus of the program is on problem solving, numbers and operations, and communication and representation. Self-paced, interactive tutorials introduce graphic organizers to map out mathematical situations. <i>Go Solve</i> is available as three separate titles:</p> <ul style="list-style-type: none"> <li>▪ Addition and Subtraction: Parts-and-Total, Change, Comparison</li> <li>▪ Multiplication and Division: Equal Parts, Area and Array</li> <li>▪ Advanced Multiplication and Division: Part/Whole, Comparison, Proportion</li> </ul>
2. Activities for limited English proficient students that emphasize language skills and academic achievement	<p>The <i>GO Solve</i> adaptive leveling system assures differentiation for students at all levels. When a student has reached a new milestone or is having trouble using the program, the Message Center automatically alerts the teacher. He/she can use these performance alerts to increase a student's success by:</p> <ul style="list-style-type: none"> <li>▪ Examining reports to see if the student's performance was low across every skill or shows particular difficulty with selected skills</li> </ul> <p style="text-align: right;">(Continued)</p>

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<p>Activities for limited English proficient students that emphasize language skills and academic achievement Continued</p>	<ul style="list-style-type: none"> <li>▪ Directing the student to review the tutorial instead of learning new material</li> <li>▪ Sitting with the student and observing the areas of difficulty</li> <li>▪ Enabling all the software learning supports, including the hints, calculator, and notebook</li> <li>▪ Evaluating whether the student has performed poorly on just one tutorial or most tutorials</li> </ul> <p><u>English-Language Learners</u></p> <p>Teachers can customize the <i>GO Solve</i> software settings to support English-Language learners. Strategies include:</p> <ul style="list-style-type: none"> <li>▪ Setting the text-to-speech setting on and using it throughout the program when the audio button appears</li> <li>▪ Using the animation controls to pause and rewind animations</li> <li>▪ Using the <i>Repeat Movie and Replay Audio</i> features during the tutorial activities</li> </ul> <p><u>Students with disabilities</u></p> <p><i>GO Solve</i> contains Universal Design features that accommodate students with disabilities or different learning styles. These include:</p> <ul style="list-style-type: none"> <li>▪ Keyboard focus and navigation</li> <li>▪ Text-to-speech with a choice of natural and synthesized voices</li> <li>▪ Voice speed and pitch for synthesized speech</li> <li>▪ Text captioning during the tutorial animations</li> <li>▪ Compatibility with screen readers</li> <li>▪ Variable font sizes</li> <li>▪ High-contrast settings</li> </ul>
<p>3. Activities involving telecommunications and technology education programs</p>	<p><i>GO Solve</i> teaches students to recognize mathematical situations in arithmetic word problems, comprehend word problems with the aid of graphic organizers, and plan solutions. Students master problem solving through step-by-step instruction and practice, at their own pace and at a level automatically adapted to each student.</p> <p><i>GO Solve</i> can be used for students in Grades 3-6 for on-grade level students, as well as remediation for students in Grades 7-8. The program offers three modules:</p> <ol style="list-style-type: none"> <li>1. Addition and Subtraction</li> <li>2. Multiplication and Division</li> <li>3. Advanced Multiplication and Division</li> </ol> <p style="text-align: right;"><i>(Continued)</i></p>

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<p>Activities involving telecommunications and technology education programs Continued</p>	<p>GO Solve includes more than 1,500 practice word problems deliberately composed with different numeric, linguistic, and problem characteristics. The program adapts to each student's ability to ensure appropriate levels of challenge for all students. GO Solve includes:</p> <ul style="list-style-type: none"> <li>▪ Self-paced, interactive tutorials that introduce graphic organizers to map out mathematical situations</li> <li>▪ Adaptive leveling to assure differentiation for students at all levels</li> <li>▪ Software supports that include hints, calculator, notebook, and text-to-speech</li> <li>▪ Customization of word problems to engage students in problem solving</li> <li>▪ Reporting tools to monitor student or class progress and usage</li> </ul>
<p>4. Activities to promote parental involvement and family literacy</p>	<p>Teachers can share students' performance and progress reports with their parents during conference times. The Student Progress Report displays a student's performance over time, including overall practice, tutorials completed, and the proportion of problems answered correctly on the first attempt. The Tutorial Summary Report shows a summary of the student's performance on all tutorial activities, across all modules.</p>
<p>5. Programs that provide assistance to students who have been truant, suspended, or expelled to allow the students to improve their academic achievement</p>	<p>In addition to helping students recognize and build a model of the problem situation presented in word problems, GO Solve includes a research-validated technique to enhance motivation and access to problem context. The program prompts students to personalize word problems. GO Solve might ask the student to identify a person, such as the name of a friend, family member, or even fictional character. The program will also occasionally prompt for the name of a location or a thing, like a silly prize or the name of a roller coaster. The student's response is immediately incorporated into the next word problem—the problems become about people, places, and things familiar to students. According to research, personalization increases student engagement and comprehension and facilitates connecting the problem to known schema.</p>

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<p>6. Programs and activities that follow <i>principles of effectiveness</i> by being based on:</p> <ul style="list-style-type: none"> <li>▪ Assessment of objective data regarding need for before- and after-school programs</li> <li>▪ Established set of performance measures aimed at ensuring the availability of high-quality academic enrichment opportunities</li> <li>▪ If appropriate, scientifically based research that provides evidence that the program or activity will help students meet state and local achievement standards</li> </ul>	<p>GO Solve Word Problems incorporates five research-validated tenets that have been shown to produce good problem-solving habits.</p> <ol style="list-style-type: none"> <li>1. <b>Schema-based instruction helps develop the ability to generalize problem solving.</b>  GO Solve introduces students to the most common types of arithmetical situations reflected in word problems. Students learn to think about categories of problems rather than attacking each problem as a new and separate task.</li> <li>2. <b>Drawings and diagrams effectively support the creation of mental models.</b>  GO Solve presents a different graphic organizer for each problem situation. Using these diagrams to represent the problem, students gain and retain word problem solving skills.</li> <li>3. <b>Animated anchors teach students how to transfer their understanding.</b>  GO Solve offers multiple visual examples for each mathematical situation. Students learn to connect the abstract organizers to a range of problem contexts.</li> <li>4. <b>Breaking the problem-solving process down into sub-tasks improves mastery of learning.</b>  Students first parse a mathematical situation into the organizer. Next, students identify known and missing information, and finally students compute the answer.</li> <li>5. <b>Personalizing problems enhances motivation and access to problem context.</b>  To make the word problems more relevant and motivating for the students, GO Solve allows students to personalize their word problems.</li> </ol>
<p>6. The eligible entity has experience or promise of success in providing educational and related activities that will complement and enhance the academic performance, achievement, and positive youth development of the students.</p>	<p>Go Solve incorporates research-validated methods that have been shown to produce good problem-solving habits and improved performance. Specifically, the program explicitly introduces students to the most common types of arithmetical situations reflected in word problems. GO Solve uses graphic organizers to help students construct concrete mental models of the situations and relationships among the information in each problem. The program applies a proven instructional approach built around anchored instruction and worked examples.</p>

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7. To sustain a quality program, staff delivering academic support and enrichment services should be provided ongoing training and learning opportunities.	<p>Scholastic provides a variety of on-site, customized <i>GO Solve</i> training to ensure successful use of the program. In the <i>GO Solve</i> Implementation Training, participants learn to:</p> <ul style="list-style-type: none"> <li>▪ Implement <i>Go Solve</i> effectively to provide instruction and practice on solving word problems</li> <li>▪ Integrate <i>Go Solve</i> into the existing mathematics curriculum</li> <li>▪ Assess student progress using the program's management and reporting system</li> <li>▪ Develop an implementation plan that works with their existing curriculum and resources</li> <li>▪ Weave research-based elements of the program, such as graphic organizers, into their teaching</li> </ul>
8. Academic activities are aligned with the school's curriculum in the core subject areas.	<p><i>GO Solve Word Problems</i> follows the research-based <i>schema-based</i> instructional model which suggests the use of drawings and diagrams to reflect mathematical situations. As the research suggests, <i>GO Solve</i> presents a different diagram, or graphic organizer, for each problem situation. In addition, the organizers used in the program incorporate differentially sized boxes for additive compare problems. The mathematical relationships that are represented by graphic organizers include:</p> <p><u>Addition &amp; Subtraction</u></p> <ul style="list-style-type: none"> <li>▪ Parts and Total</li> <li>▪ Change</li> <li>▪ Comparison</li> </ul> <p><u>Multiplication &amp; Division</u></p> <ul style="list-style-type: none"> <li>▪ Equal parts (with remainders)</li> <li>▪ Area and Array</li> <li>▪ Part to Whole</li> <li>▪ Comparison</li> <li>▪ Proportion</li> </ul>
9. Program was developed and will be carried out in active collaboration with the schools the students attend.	<p><i>GO Solve Word Problems</i> mixes whole class instruction and individualized student practice. Animated tutorials introduce concepts to the entire class and help students build the connection between mathematical situations and the actual word problems they represent. Students practice using the organizers in adaptive sessions that adjust the difficulty of the problems based on each student's performance. The problems can also be personalized about people, places, and objects students know to engage students in the problems.</p>

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10. The program includes a plan for how the community learning center will continue after funding under this part ends.	<p>GO Solve™ Word Problems can be integrated with funds and money from state, local, private and other sources. The federal funding programs for which it qualifies include:</p> <ul style="list-style-type: none"> <li>▪ Title IA—Improving Basic Programs</li> <li>▪ Title I—Supplemental Educational Services</li> <li>▪ Title IID—Enhancing Education through Technology</li> <li>▪ 21<sup>st</sup> Century Community Learning Centers</li> <li>▪ Enhancing Education through Technology</li> <li>▪ GEAR Up</li> <li>▪ IDEA, Part B</li> <li>▪ IDEA, <i>Response to Intervention</i></li> </ul>
11. The program or activity shall undergo a periodic evaluation to assess its progress toward achieving its goal of providing high-quality opportunities for academic enrichment.	<p>GO Solve Word Problems includes various student assessment features. Interactive activities check for student understanding after each instructional animation. Word problem performance is measured by success on the first try, number of problems solved, and adaptive levels. Detailed performance reports capture data on word problem performance, use of learning supports, and time on task. Performance data can be analyzed by word problem situation, number form, and other characteristics.</p>