

Problem Solving with Bar Models

PART 1 OF A LIVE CO-OP COURSE TO SOLVE WORD PROBLEMS FOR GRADES 2-3

JESSICA KAMINSKI, M.ED.



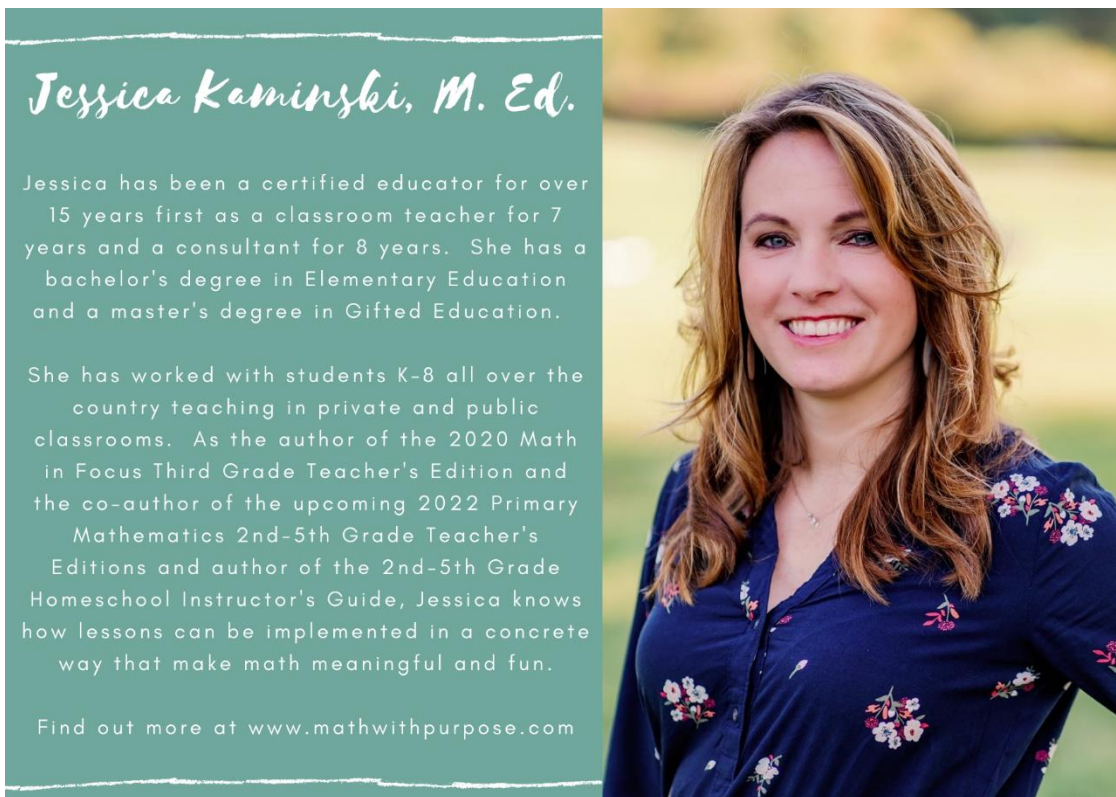
Dear Prospective Families and Students,

This 3-week live learning experience is designed to provide your student with an opportunity to work with a certified teacher while making friends all over the world to engage in meaningful mathematics. Students will meet once a week to participate in a live class and then be given opportunities to continue the learning at home with provided resources and materials specific to standards and their textbook. Parents also will have the opportunity to ask their own questions about the course and content at both the beginning and end of the course.

Each family will be expected to take part in the course with the provided course contract. This must be signed and returned before beginning the course. Please take a moment to look through the information to see what all is included and be prepared to ask questions at the Parent Support Session held LIVE on Wednesday, March 2 at 1:30-2:00 PM EST.

Thank you for considering! I look forward to working with you!

Your Teacher,
Jessica Kaminski



Problem Solving with Bar Models Course Weekly Syllabus

*Due to the beta nature of this course, the resources provided will be added each week as content is created.

Meeting Date	Topic and Goals	Resources Printable, Digital, Video
Parent Info Session	Parent Support Session <ul style="list-style-type: none"> • Expectations and Goals • How you can support your child at home • How can I support your child's learning? 	Printable Resources <ul style="list-style-type: none"> • Course Syllabus • Student Contract (needs to be returned and signed)
Session 1	The Meaning of Sum and Difference <ul style="list-style-type: none"> • Use concrete experiences to model the sum and difference • Show how these can be written with addition and subtraction equations 	Printable Resources: <ul style="list-style-type: none"> • The Problem Solving Handbook: Solving Addition and Subtraction Word Problems Using Bar Models • Sum or Difference Card Game Digital Resources: <ul style="list-style-type: none"> • Lesson Work Mat via Google Slides <ul style="list-style-type: none"> • Understanding Sum and Difference: Explore how these words are modeled for addition and subtraction.
Session 2	Part-Part-Whole <ul style="list-style-type: none"> • Learn about the part-part-whole form of addition and subtraction • Relate addition and subtraction to number bonds • Model basic forms of word problems using bar models and number bonds 	Printable Teaching Resources: <ul style="list-style-type: none"> • The Problem Solving Handbook: Solving Addition and Subtraction Word Problems Using Bar Models • Weekly Lesson Plan ideas • Bar Model Posters • Number Bond Flash Cards • Number Bond Work Mat Digital Teaching Resources: <ul style="list-style-type: none"> • Lesson Work Mat via Google Slides Video Resources: <ul style="list-style-type: none"> • Number Bonds: Learn how number bonds can help to solve addition and subtraction problems. • Add To: Result Unknown Parts 1-3: These three videos show how addition can be shown with the action of adding to a quantity. • Take From: Result Unknown Parts 1-3: These three videos show how subtraction can be shown as the action of taking away from a quantity. • Put Together/Take Apart: Total Unknown Parts 1-3: These three videos show how quantities can have two parts. These can be found by adding the parts together or subtracting a part.

<p>Session 3</p>	<p>Part-Part-Whole and Beyond</p> <ul style="list-style-type: none"> • Solve change unknown, start unknown, put together, and take apart addition and subtraction situations • Understand the relationship to the inverse operations of addition and subtraction using number bonds 	<p>Printable Resources:</p> <ul style="list-style-type: none"> • The Problem Solving Handbook: Solving Addition and Subtraction Word Problems Using Bar Models • Weekly Lesson Plan ideas • Fact Family Resources • Bar Model Posters <p>Digital Resources:</p> <ul style="list-style-type: none"> • Lesson Work Mat via Google Slides <p>Video Resources:</p> <ul style="list-style-type: none"> • Bar Models: Part-Whole Models: This video shows an example of solving word problems with the part-whole bar model. • Part-Whole Model Understanding: This video explains how to move from concrete to the bar model. • Add To: Change Unknown Parts 1-3: These three videos show how solve addition problems that have a change unknown. • Add To: Start Unknown Parts 1-3: These three videos model using inverse operations to solve an addition problem with the start is unknown. • Take From: Change Unknown Parts 1-3: These three videos model how to use part-whole understanding when the change is unknown. • Take From: Start Unknown Parts 1-3: These student videos show how inverse operations can be used when the start is unknown. • Put Together/Take Apart: Addend Unknown Parts 1-3: These three videos explore the part-whole relationship of a number of objects.
<p>Session 4</p>	<p>Additive Comparison Situations</p> <ul style="list-style-type: none"> • Understand the meaning of more, less, and fewer when comparing quantities • Understand when to add or subtract based on models and not key words • Relate models to show that numbers are composed of other numbers 	<p>Printable Resources:</p> <ul style="list-style-type: none"> • The Problem Solving Handbook: Solving Addition and Subtraction Word Problems Using Bar Models • Lesson Plan Resources • Reading Comprehension Resources • Bar Model Posters <p>Digital Resources:</p> <ul style="list-style-type: none"> • Lesson Plan Mat via Google Slides <p>Video Resources:</p> <ul style="list-style-type: none"> • Compare Using More: Difference Unknown Parts 1-3: These student videos explore comparison problems when the word more is used. • Compare Using Fewer: Difference Unknown Parts 1-3: These three videos help students compare quantities when using the word fewer or less. • Compare Using More: Bigger Unknown Parts 1-3: These three videos explore finding the bigger quantity using the word more.

		<ul style="list-style-type: none"> • Compare Using Fewer/Less: Bigger Unknown Parts 1-3: These three videos help students find the bigger quantity when fewer or less is used. • Compare Using More: Smaller Unknown Parts 1-3: These three videos explore finding the smaller quantity when using more to compare. • Compare Using Fewer/Less: Smaller Unknown Parts 1-3: These three videos help compare quantities to find the smaller quantity when fewer or less is used.
Session 5	Multi-Step Problems <ul style="list-style-type: none"> • Solve two-part problems involving both part-whole and comparison problems • Solve two-step problems using both addition and subtraction 	Printable Resources: <ul style="list-style-type: none"> • The Problem Solving Handbook: Solving Addition and Subtraction Word Problems Using Bar Models • Problem Solving Work Mat • Printable Word Problem Match • School Trip Performance Task • Weekly Lesson Plan Ideas Digital Resources: <ul style="list-style-type: none"> • Lesson Work Mat via Google Slides Video Resources: <ul style="list-style-type: none"> • Use the Part 3 of any of the previous videos modeling the different word problems.
During Sessions 4-6	Optional Parent Coaching Sessions <ul style="list-style-type: none"> • 15-minute Zoom to discuss student progress • Next steps for each student 	
Session 6	Putting It All Together <ul style="list-style-type: none"> • Solve real-world problems involving both addition and subtraction • Apply bar models to solving problems involving money and measurement 	Printable Resources: <ul style="list-style-type: none"> • School Trip Performance Task • Course Objective Checklist Digital Resources <ul style="list-style-type: none"> • Review Game Template

Problem Solving Part I Course Q & A

»» What are the goals of the course?

This course will help students understand the meaning of all 15 addition and subtraction word problem scenarios when solving word problems. Students will learn comprehension strategies to make sense of word problems in the class while practicing using their own copies of The Problem Solving Handbook for Addition and Subtraction with extra video lessons. Students will learn how bar models can help make sense of the problem and show the operation by solving multi-step problems involving addition and subtraction. The course will end with a culminating activity where students are able to try out the different strategies to learn how to solve real-world problems.

»» What grade levels are best suited for the course?

This course is best designed for students in Grades 2-3 who have already learned to work with basic operations. These word problems will require students to add and subtract with and without renaming up to 4-digit numbers. Students do not need to have a bar modeling background and will learn more about the skill throughout the course. This is Part 1 of a series of courses addressing bar models. This will lay the foundation for the other courses.

»» How many students are going to be part of the course?

The course will be held weekly via a Zoom call using video and audio. To keep the course engaging and provide scaffolded instruction, there will be a limit of 12 students to each course. There will be a waiting list provided. In the event that there are more than 20 students who sign up, the possibility of other courses will be considered due to available time/instructors.

»» How will the course be conducted?

The course will be held weekly using a Zoom room with video and audio. Students will interact during the class using Google slides and other digital technology. Materials for the course will be placed in the Teachable course format. Zoom sessions will be recorded (with parent consent) and placed in the Module for review. Recordings will only be available during the length of the course in the Teachable format and will be deleted once the course is finished. However, the printable content will be available for life.

»» What will be expected of my student?

Each student will be expected to attend each week at the specific time and be a good classmate. Students should be an active participant in the class while maintaining a respectful attitude towards others. Students will be asked to answer questions and show his or her thinking during the class while using audio, video and the provided technology tools.

»» What will be expected of the parents?

Parents will be expected to attend the first meet and greet session to discuss the course held on March 2, 2022 to discuss expectations and requirements. Parents will be asked to be available to your student during each weekly session to help your student with any issues especially during the first session. Parents are encouraged to use the provided weekly materials to continue the content throughout the week so that your student can work towards proficiency for the following lessons.

»» What learning materials will be provided?

Each week, lesson plans that are tied directly to the session will be provided with printable and digital resources. These lesson plans will address ways to practice. Video lessons from Jessica's learning library will also be shared as a way for students to continue the learning throughout the week. Students are encouraged to practice and share their learning via the message boards that will be created during the course. Materials and course information will be available for lifetime access. More information can be found by referencing the weekly syllabus and will be added as the course is in session.

»» What materials will we need for the course?

Connecting cubes, construction paper, dry erase markers, page protectors and a whiteboard will be used for the live classes. Students should have access to print out the given materials prior to attending the live class.

»» How much is the course?

This course is \$179. This fee includes 1 parent introduction session, six 30-minute live student sessions, and one optional 15-minute private parent summary session with a certified teacher and author of two best-selling Singapore textbook series. This also includes all the printable materials and videos in the video library found at www.mathwithpurpose.com during the length of the course and lifetime access to the course videos and materials. Printable materials will be mailed to you.

»» Is the course refundable if we decide it is not a good fit?

This course will be refundable after the first lesson only (by March 8, 2022). To cancel the course and materials, the parent must email Jessica at info@mathwithpurpose.com to receive a full refund. After 3/8/2022, no refunds will be available.

»» How do I sign up?

Sign up by purchasing the course at www.mathwithpurpose.com/shop. Once you have signed up, you will receive a confirmation email within 24 hours with your Zoom link for the Parent Support Session and a link for a Google form to tell more about your student. Materials for the first session will be sent by Sunday, March 6, 2022 including a link to join the course from Teachable.