
NUMBERLESS
word problems

WHAT ARE NUMBERLESS WORD PROBLEMS

Anyone who has spent time teaching math has experienced assigning students a word problem and watching them all "solve" the problem without even thinking about which operation(s) to use or why they should use that operation. Teaching key words is one strategy frequently utilized to combat this problem. However, one potential downfall is that when students memorize key words, they may not understand what they were doing as they solved problems and were not able to transfer their understanding to various situations. The key words are simply rules to be followed.

In numberless word problems, all numbers are removed temporarily while students process what the situation is and determine what information is needed to solve the problem. Then, numbers are revealed until a solution is reached. Numberless word problems are especially beneficial for struggling students, because they are nonthreatening problems. This allows students to build mathematical confidence.

These problems allow students to spend time focusing on the context of the problem. Too often, students try to solve the operation with the operation they are most familiar with. Removing the numbers prevents students from trying to solve a problem without fully understanding the problem. As I gradually add in numbers, students are able to rely on the reasonableness as a part of their problem solving strategy.

It is important to use numberless word problems with teacher guidance, in either a whole group or small group setting. Begin by reading the first part of the problem (this is the one without any numbers). Have students discuss what is happening in the problem and what they know. Have students select reasonable numbers that could be used in the word problem. Then read aloud the next phase of the same problem. In this stage, you will add one or two pieces of numeric information. The information should NOT be enough for students to solve the problem, or even know what the problem is. In the next step, add additional numeric information. At this time, all of the information needed to solve the problem should be available. However, students are still not presented with the actual question. The last step is when students are presented with the actual question and complete problem.

HOW TO IMPLEMENT THIS RESOURCE

I try to be very intentional in how I select the type of word problems I want my students to focus on. I teach one type of word problem each week. After I've taught a particular type of word problem, I regularly review that to ensure students for better retention. I review through independent practice sheets, task cards, and our daily warm-up lessons. You may also use the Types of Word Problems Booklets that have students WRITE their own word problems.

When beginning this strategy, one of my greatest concerns was how I would implement this AND number talks. After considerable planning, I decided that I would incorporate these numberless word problems and number talks into one lesson. Hopefully, this planning will save you HOURS of time! If you don't utilize number talks, don't worry! You can simply omit that portion of the lesson.

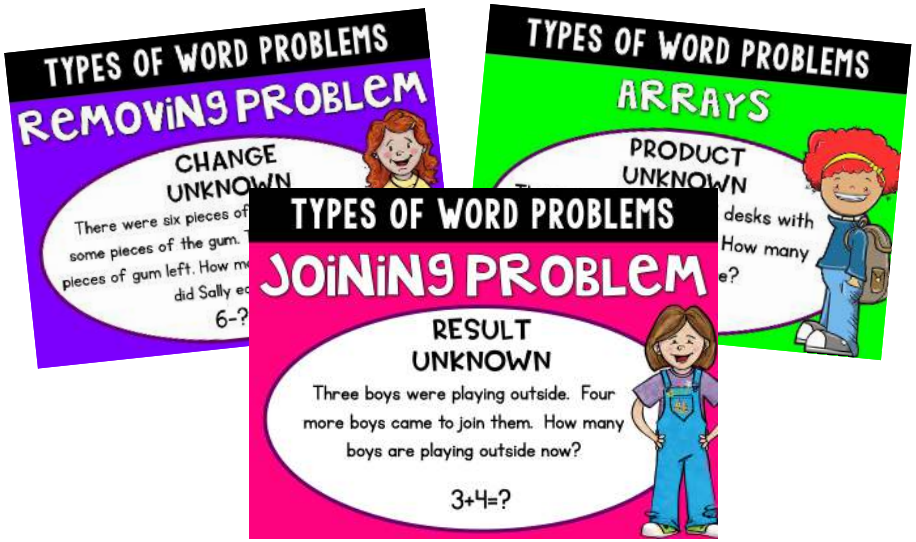
Each week students focus on one type of word problem and one number talk strategy. You can see the table on the following page for the general plan. The numbers I have selected for the word problem will lend themselves to a number talk using that particular strategy. I have also included additional numbers for extended computation practice. I like to have students solve the problem with the algorithm and their number talk strategy, so they can see how the two relate to each other.

This resource is best used as a whole group or small group warm-up. Use the digital version on your projector to display the slides to students. View the presentation in slide-show mode. Each time you press the right arrow, a new portion of the problem will be presented to students. After each transition, spend a bit of time discussing the changes to the slide and how it impacts the problem. Work your way through each portion of the slide until students have answered the question. It is completely up to you on whether or not you want your students to use a number talk strategy to solve the problem. I wanted to include it in this resource, but I find that combining multiple forms of instruction saves me so much time! Since I use this as a daily warm-up, we only complete one slide a day.

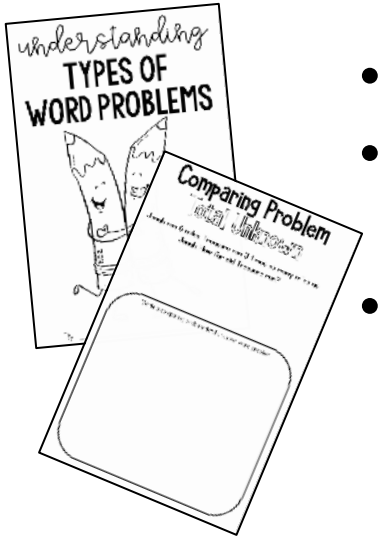
For additional practice, students may complete any of the independent practice sheets. You can also make your own numberless word problems! I know my students love seeing their names in our word problems. If you use the Types of Word Problems booklet, be sure to print them front and back.

WHAT'S INCLUDED

Types of Word Problem Posters

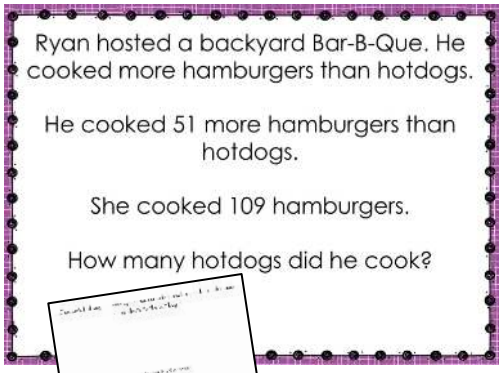


Types of Word Problems Booklet



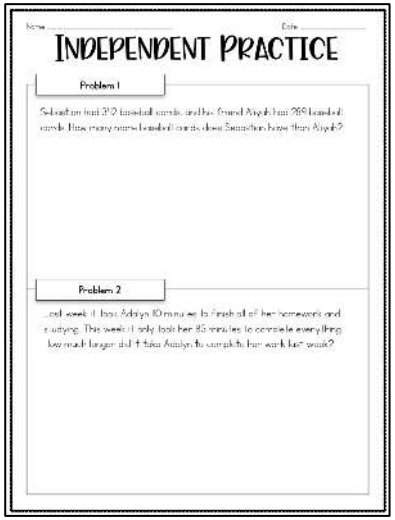
- prints 2-sided
- students solve one problem
- students write an example problem

100 Numberless Word Problems



- digital and paper version
- gradually release information to students
- editable

Independent Practice Problems



- 21 pages of independent practice
- editable

PLANNING GUIDE

	Type of Word Problem	Number Talk Strategy
Week 1	Joining Problem Result Unknown	Friendly Numbers Category 1
Week 2	Joining Problem Change Unknown	Adding Up Category 1 & 2
Week 3	Joining Problem Start Unknown	Adding Up Category 3
Week 4	Removing Problem Result Unknown	Removal Category 1 & 2
Week 5	Removing Problem Change Unknown	Removal Category 3
Week 6	Removing Problem Start Unknown	Friendly Numbers Category 2
Week 7	Parts & Wholes Whole Unknown	Friendly Numbers Category 3
Week 8	Parts & Wholes Addend Unknown	Adjusting 1 Number Category 1 & 2
Week 9	Comparing Problems Difference Unknown	Adjusting 1 Number Category 3
Week 10	Comparing Problems Smaller Unknown	Keeping a Constant Difference Category 1 & 2

	Type of Word Problem	Number Talk Strategy
Week 11	Comparing Problems Bigger Unknown	Place Value Category 2 & 3
Week 12	Equal Groups Product Unknown	Basic Facts
Week 13	Equal Groups Group Size Unknown	Basic Facts
Week 14	Equal Groups Number of Groups Unknown	Basic Facts
Week 15	Array Problems Product Unknown	Friendly Numbers Category 1
Week 16	Array Problems Group Size Unknown	Partial Quotients Category 1
Week 17	Array Problems Number of Groups Unknown	Partial Quotients Category 2
Week 18	Comparing Problems Product Unknown	Friendly Numbers Category 2
Week 19	Comparing Problems Group Size Unknown	Basic Facts
Week 20	Comparing Problems Number of Groups Unknown	Multiplying Up Category 1

TYPES OF WORD PROBLEMS

JOINING PROBLEM

RESULT UNKNOWN

Three boys were playing outside. Four more boys came to join them. How many boys are playing outside now?

3+4=?

TYPES OF WORD PROBLEMS

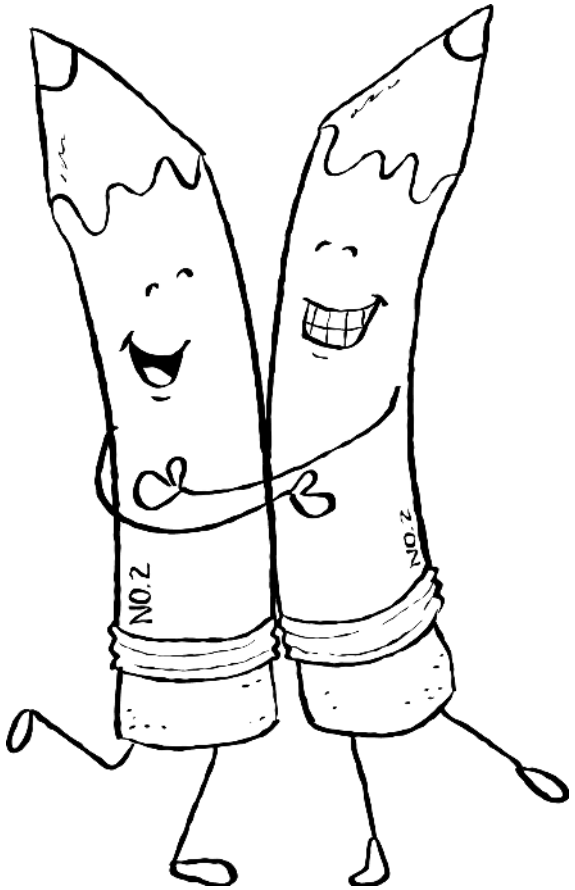
COMPARE

NUMBER OF GROUPS UNKNOWN

Jonah and Treasure ran 12 miles. Jonah ran four miles, and Treasure ran three times as many miles as Jonah. How far did Treasure run?

?x3=12 12÷3=?

understanding TYPES OF WORD PROBLEMS



By: _____

ADDITION & SUBTRACTION

Joining Problems

Result Unknown 3+4=?	Change Unknown 3+?=7	Start Unknown ?+4=7
Three boys were playing outside. Four more boys came to join them. How many boys are playing outside now?	Three boys were playing outside. Some more boys came to join them. Now there are seven boys playing outside. How many boys joined the first three?	Some boys were playing outside. Four more boys came to join them. Now there are seven boys playing outside. How many boys were first outside?

Separating Problems

Result Unknown 6-2=?	Change Unknown 6-?=4	Start Unknown ?-2=4
There were six pieces of gum. Sally ate two pieces of gum. How many pieces of gum were left?	There were six pieces of gum. Sally ate some pieces of the gum. There were four pieces of gum left. How many pieces of gum did Sally eat?	There were some pieces of gum. Sally ate two pieces of the gum. There were four pieces of gum left. How many pieces of gum were there to begin with?

Comparing Problems

Difference Unknown 8-3=? 3+?=8	Quantity Unknown 8-5=? 5+?=8	Referent Unknown 8-3=? ?+3=8
Mark collected 8 rocks. Jen collected three rocks. How many more rocks did Mark collect than Jen?	There are eight rocks. Mark found 5 rocks and Jen found the other rocks. How many rocks did Jen find?	Mark has three more rocks than Jen. Mark has 8 rocks. How many rocks does Jen have?

Comparing Problem
Total Unknown

Jonah ran 6 miles. Treasure ran 3 times as many miles as Jonah. How far did Treasure run?

Write a comparing problem total unknown word problem.

Sophia solved some math problems at school.

She solved some more math problems at home.

Part 1

This is what students will first see.

Sophia solved some math problems at school.

She solved some more math problems at home.

Sophia solved 19 problems at school.

Part 2

Some information is added.
This will appear when you click the arrow.

Sophia solved some math problems at school.

She solved some more math problems at home.

Sophia solved 19 problems at school.

She solved 12 more problems at home.

Part 3

More information is added.
This will appear when you click the arrow.

Sophia solved some math problems at school.

She solved some more math problems at home.

Sophia solved 19 problems at school.

She solved 12 more problems at home.

How many math problems did she solve?

Each part of the word problem is gradually revealed.