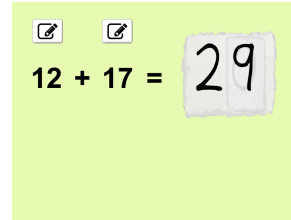
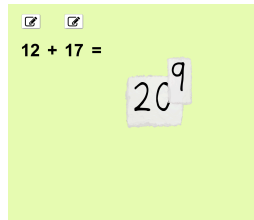
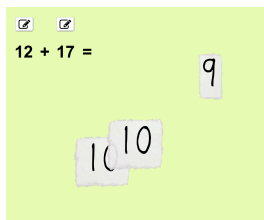
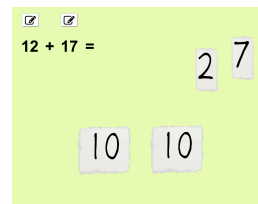
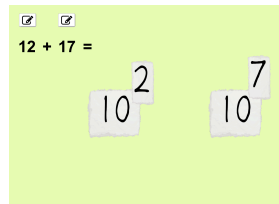
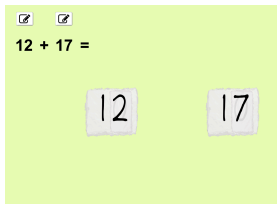


Simple Math Interventions and Targeted Practice with Make a Ten

Make a Ten was designed to let students explore math without having to worry about wrong answers. This makes it ideal for struggling learners. Once students understand the basics of using Make a Ten you can customize activities for them to do on their own or with a parent or helper.

Adding Screen

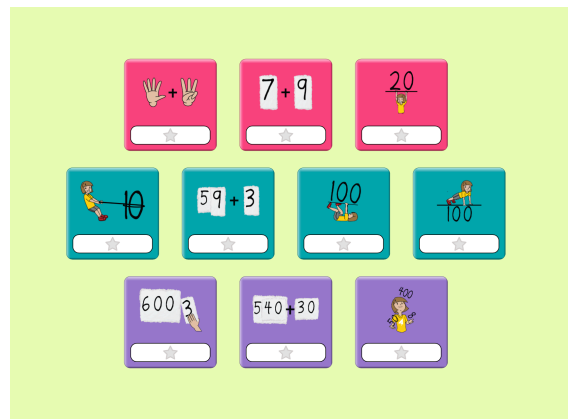
On this screen students enter any addition sum and use **Make a Ten** numbers to check their work or solve. Because **Make a Ten** is similar to using manipulatives, students can't get a wrong answer. It is useful for scaffolding students who cannot solve worksheet problems on their own.



- Allow students to check their work with the adding screen.
- Allow students to use the adding screen to do worksheet problems.
- Ask students to demonstrate how they solved a sum with the **Make a Ten** numbers.
- Ask student to predict the sum, then use **Make a Ten** adding screen to check.

Game Screen

Make a Ten reinforces the adding strategies that use landmark numbers such as 10, 100, and 1000 by making students create those numbers before adding. It causes students to recognize number pairs to 10 and 100 and develops number sense and adding skills. **Make a Ten** is NOT designed to teach a particular algorithm, although it can be used to illustrate the standard algorithm. The challenges all emphasize number sense skills that students need. Watching students use **Make a Ten** is a great way to see how students are thinking about numbers and then you can choose a challenge for them to practice.



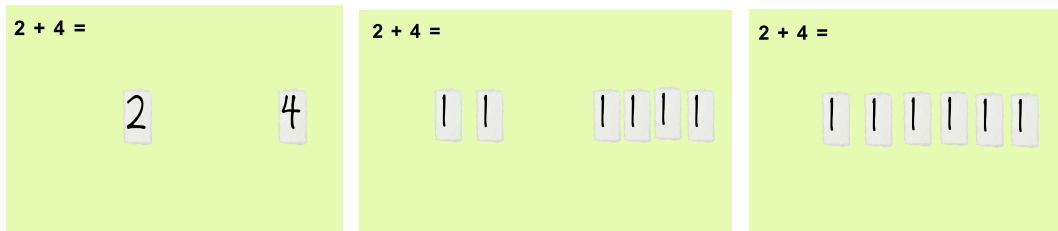
This screen is actually a set of highly targeted adding challenges. You can find a short description of the challenges in the sim by clicking the question mark in the game screen. Also, challenge descriptions appear at the top of the game.



Now, we'll describe the challenge in more depth and you might use them.

Level 1 – Are single digit sums of 10 or less

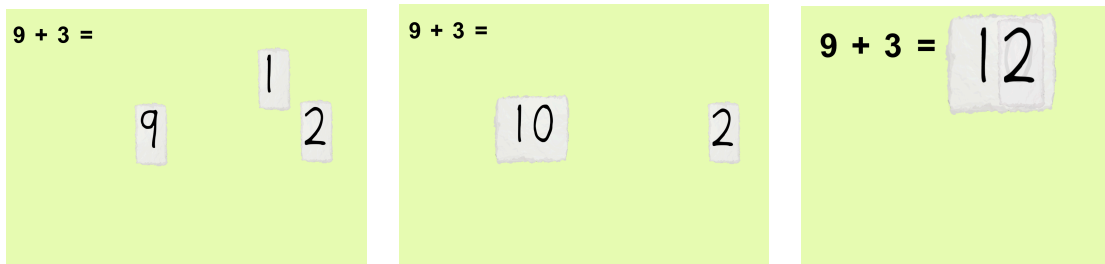
There is very little challenge at this level as the numbers will always add together right away. It is targeted for younger students, students just learning their numbers, or students struggling with the most basic number sense. The focus here can be on understanding what numbers are and what they mean.



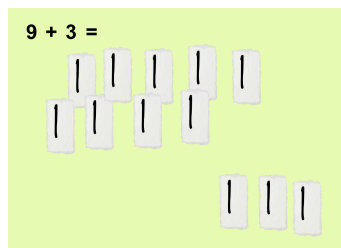
- Ask “what is 4? What is 2? Can you show me?”
- Break the numbers into ones and count.
- If you are using a tablet, you can put chips or blocks right on the tablet under the numbers.

Level 2 - adding over ten with 9

This is an important level for moving on from using fingers, using “counting on” strategies, and trying out mental math. It highlights the feature of **Make a Ten** that requires the user to make ten before adding. All the sums feature a nine and require the student to make a ten before adding. Often students playing independently with this level will discover the “trick” to adding with 9 after about 10 minutes of free play. Some students will still want to break up the numbers into ones to check their answer.



- Give students a chance to explore and discover how to add with 9 themselves.
- Ask students to predict their answer.
- Often, they will say they discovered a “trick,” let them explain how they figured it out.
- Watch how students manipulate the numbers to get insight into their thought process.
- Some students will still want to break the numbers into ones. This can tell you something about how the student is thinking. It may be helpful for this student to use manipulatives in class.

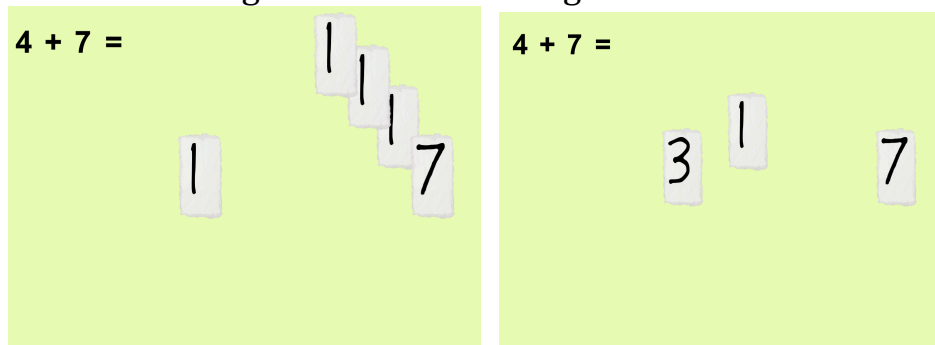


- Encourage students to find more than one way to find the sum, you can keep playing with the numbers even after you have the answer.
- Ask, is one way faster than the others?

Level 3 – single digit sums under 20

Once students have mastered the way to add over ten with nine, they are ready to expand what they have learned to adding with any single digit numbers.

- As students explore this level, ask “How is this like adding with 9s? How is it different?”
- Play prediction games again – “What will need to do to make a ten?”
- For some examples, students may just bring “ones” over one at a time - encourage them to find a single number to make a ten.



- Watch how students are solving, are they recognizing pairs of number that makes tens, or using a consistent strategy?

Levels 4 – 7 are helpful as students transition to adding double digit numbers. Often this transition is difficult even when student understand the basic concepts. Level 4 – 7 let student work on the individual specific skills they need.

Level 4 – Adding over 100 with decades

All of the sums in this set add over 100, BUT all the numbers are decade numbers, 10, 20, 30 etc... Student may know how to add 20 and 30, and know that 8 plus 4 is 12, but putting that together to understand that 80 plus 40 is 120, can seem like a whole new idea rather than a pattern they already understand. **Make a Ten** requires users to “Make a 100” to add over 100, emphasizing the pattern and the important milestone that 100 is.

This level can be especially helpful when kids are struggling with place value as they move to adding double digits.

50 + 70 =

50 50 20

or

50 + 70 =

20 30 70 ?

- Ask students to predict their answers
- Ask if they see a pattern for adding over 100? Is it familiar?
 - How many ways can they “get” to 100?

Level 5 - *add digits over the decade*

Adding a single digit over a decade number can seem like a whole new challenge to some students. This level allows students find the same pattern they used in level 2 and 3 – Making tens to add over ten.

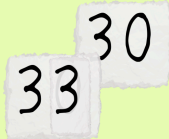
$6 + 48 =$

- Help students recognize that making a ten is a skill they already have, and now they can use it to add over any number.

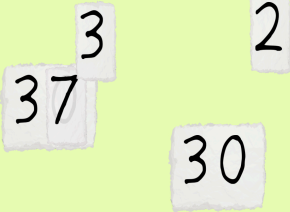
Level 6 – adding double digits with sums under 100

While students on this level will not need to add over 100, there are basically two kinds of sums. Some sums will add with almost no work, like 21 and 34, it can be simple to see the answer is 55. Other sums will cross the decades, like 37 and 35, there's more to do on this type. I like to call these sums **simple** and **complex** (rather than *easy* and *hard*.) Recognizing that similar problems will require different skills is an important idea.

$33 + 30 =$

The image shows the equation 33 + 30 = on a light green background. The numbers 33 and 30 are written on small white rectangular pieces of paper. The 33 is on the left and the 30 is on the right, slightly overlapping the 33.

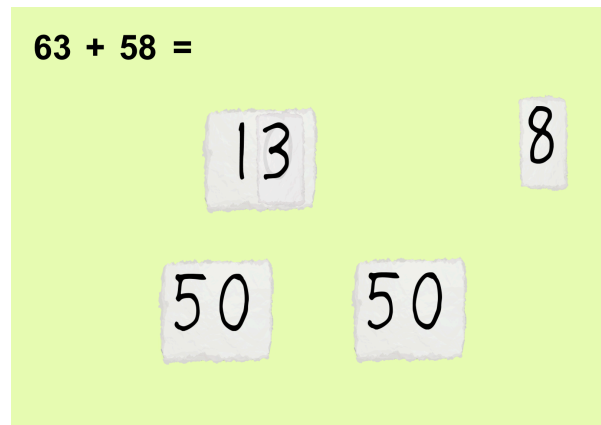
$37 + 35 =$

The image shows the equation 37 + 35 = on a light green background. The numbers 37, 3, 2, and 30 are written on small white rectangular pieces of paper. The 37 is on the left. The 3 is written above the 7. The 2 is written to the right of the 3. The 30 is written below the 37 and 3.

- Ask if students are finding some sums simple and some complex?
- How can they tell if a sum is complex and will take a little more time?
- Look at the different way to solve. Do students always break up the ones? Or do they always try to make decade number?

Level 7 – adding over 100 with double digit

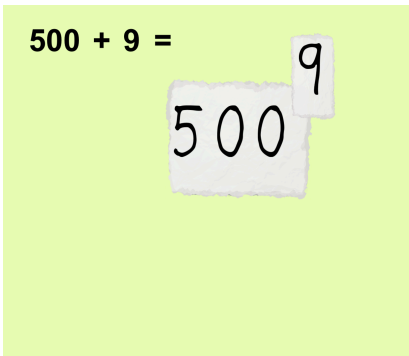
On this level all the sums will be over 100. It's time to practice the skills they have learned. It's helpful to think about all the different skills we use to add 2 digit numbers. Why is 100 so important? Why is 10 so important? If a student is struggling with this level (being inefficient or unable to explain their strategy,) try to follow what they are doing and see if you can find the missing skill, then go a back to an earlier level to practice.



- Because we are not using the standard algorithm, there are lots of patterns and short cuts student might want to try. For example, a student might want to get to 100 by making two 50s.
- Some of these sums can be quite challenging. Even so, try predicting the answer ahead of time.
- Since the answers are often not obvious, it is also a good time to “estimate” your answer before touching the screen.

Level 8 - adding single digit to triple digit numbers

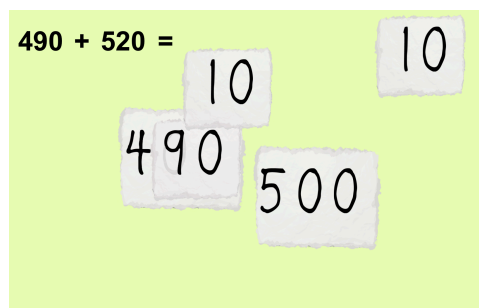
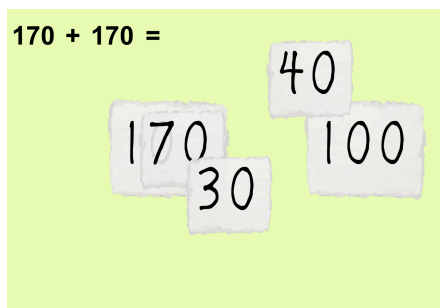
This level was included specifically for intervention. Sometime even when students have most of the skills they need, some element of place value might not be making sense. If students are getting tangled up in rules they can lose track of adding single digits to triple digits.



Level 9 - adding hundreds and multiplies of ten.

Like level 8, this level is all about reinforcing the concepts of place value as students move to adding triple digits. By focusing exclusively on multiples of ten, students can see patterns from adding with single digits.

And, once again, **Make a Ten** will require students to “Make a 1000” if they need to add over 1000.



Level 10 - add triple digits

This is it – add ANY kind of triple digits. Do you have all your skills? If not what do you need to go back and practice?