

Addition/Subtraction Daily Practices

Kindergarten – Starting with what makes a five using objects, drawings, dominoes, ten frames and progresses to numbers.

Their counting is 1 to 1 correspondence building to counting on.

Having any number from 0-9 and be able to find how many more they need to make ten. Start from that number and if the number is below 5 ask “how many more until you get to 5?” and then how many to 10 by counting on using fingers or unifix cubes. Eventually to understand that once they reach that 5 more equals 10.

Subtraction should be looked at through the lens of addition by

1. counting up from the number being subtracted or
2. counting down by removing manipulatives, or
3. crossing out drawings, or
4. using fingers by extending fingers according to the number or
5. folding over the amount being taken away.

Ex.) $5 - 3 = \longrightarrow 3 + ? = 5$

*They need lots of counting experiences.

* Lots of subitizing (the ability to 'see' a small amount of objects and know how many there are without counting) experiences.

*Lots of visualizing experiences (to be able to see problem actions in their head)

*Add/Subtract within 5

First Grade – Start with **subitizing** (the ability to 'see' a small amount of objects and know how many there are without counting) experiences.

Mastering **addition to 10 s/b 20** using objects, drawings, dominoes, ten frames, number lines and numbers.

Count by **5's** and **10's every day to 100.**

Introduce them to **strategies** using **mental math**:

$$8 + \underline{\quad} = 10$$

Sample dialogue:

Have them close their eyes, you might have them visualize several familiar items first and ask different students to describe something about that person, place, or thing. Next ask them if I asked you to see a number in your head and I wanted you to solve a problem with it, how might you see that number? As objects such as cubes? Or as a ten frame or domino? Tell me.

Afterwards have them visualize eight (have them see a domino face, ten frame, or the number whatever will help them with the value of the number.) Can everyone see eight? Keep your eyes closed, I will take a quiet hand for someone to tell me what their 8 looks like in their head. (Have several children share).

Now let's say it (eight), and then tell them:

Open your eyes, in a minute I am going to ask you a question and I want you to think about your answer. I don't want you to blurt out the answer. Put it on your fingers and hold your hand(s) in front of you, like this (demonstrate hand(s) at chest height).

Now, close your eyes again and

Then ask "If you have 8 cubes how many more do you need to make ten?" Think (wait 10 seconds). Now show your answer on your fingers.

Have several students explain how they got their answer.

Repeat this with numbers from 0-9 daily practicing making a ten in their head until they can do it easily.

Pair them up and give them two problems. Have them each explain how they would do the problem mentally. Then have them switch problems and do it again.

Then adding a double digit to a single digit to twenty using "what makes a ten."

Ex.) $14 + 8$ Use unifix cubes to show these.

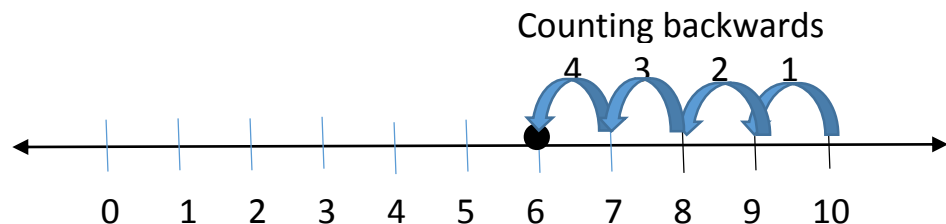
$= (10 + 4) + (6 + 2)$	decomposition	or	$= 14 + (1 + 7)$
$= 10 + (4 + 6) + 2$	assoc. prop.		$= (14 + 1) + 7$
$= 10 + 10 + 2$			$= 15 + 7$
$= 20 + 2$			$= 15 + (5 + 2)$
$= 22$			$= (15 + 5) + 2$
			$= 20 + 2$
			$= 22$

Pair them up and give them two problems. Have them each explain how they would do the problem mentally. Then have them switch problems and do it again.

Subtraction should be looked at through the lens of addition and counting down using manipulatives, drawings and number lines. Teach a lesson using these methods and then review subtracting a number from 10 for at least 2 weeks in a warm up. Then moving on to 15 and 20.

Ex.) $10 - 4 =$

using a number line



*Make sure they notice that the space between 10 and 9, 9 and 8, etc., is what is being counted not the numbers. Constantly reinforce that when working with subtraction.

10-4

$$\begin{aligned} &= (4 + 6) - 4 \text{ assoc. prop.} \\ &= 6 + 4 - 4 \text{ comm. prop.} \\ &= 6 + 0 \\ &= 6 \end{aligned}$$

Second Grade – Sixth Grade

Introduce them to **strategies** using **mental math**:

$$8 + \underline{\quad} = 10$$

Sample dialogue:

Have them close their eyes, you might have them visualize several familiar items first and ask different students to describe something about that person, place, or thing. Next ask them if I asked you to see a number in your head and I wanted you to solve a problem with it, how might you see that number? As objects such as cubes? Or as a ten frame or domino? Tell me.

Afterwards have them visualize eight (have them see a domino face, ten frame, objects, or the number whatever will help them with the value of the number.) Can everyone see eight? Keep your eyes closed, I will take a quiet hand for someone to tell me what their 8 looks like in their head. (Have several children share).

Now let's say it (eight), and then tell them:

Open your eyes, in a minute I am going to ask you a question and I want you to think about your answer. I don't want you to blurt out the answer. Put it on your fingers and hold your hand(s) in front of you, like this (demonstrate hand(s) at chest height).

Now, close your eyes again and

Then ask "If you have 8 cubes how many more do you need to make ten?" Think (wait 10 seconds). Now show your answer on your fingers.

Have several students explain how they got their answer.

Repeat this with numbers from 0-9 daily practicing making a ten in their head until they can do it easily.

Pair them up and give them two problems. Have them each explain how they would do the problem mentally. Then have them switch problems and do it again.

Then **addition** of a **double digit to a single digit** up to twenty using “what makes a ten.”

Ex.) $14 + 8$

$$= (10 + 4) + (6 + 2)$$

or

$$= 14 + (1 + 7)$$

Use unifix cubes to

$$= 10 + (4 + 6) + 2$$

$$= (14 + 1) + 7$$

show these problems.

$$= 10 + 10 + 2$$

$$= 15 + 7$$

then show them using

$$= 20 + 2$$

$$= 15 + (5 + 2)$$

a hundred chart.

$$= 22$$

$$= (15 + 5) + 2$$

$$= 20 + 2$$

$$= 22$$

Pair them up and give them two problems. Have them each explain how they would do the problem mentally. Then have them switch problems and do it again.

Do addition problems to twenty mentally.

Two digit number plus a two digit number

Using add the tens

Ex.) $24 + 35$

or

$28 + 46$

use unifix cubes

$$= (20 + 4) + (30 + 5)$$

$$= (20 + 8) + (40 + 6)$$

to show these

$$= (20 + 30) + (4 + 5)$$

$$= (20 + 40) + (8 + 6)$$

problems. Then

$$= 50 + 9$$

$$= 60 + 14$$

show these

$$= 59$$

$$= 60 + (10 + 4)$$

using a hundred

$$= (60 + 10) + 4$$

chart.

$$= 70 + 4$$

$$= 74$$

Pair them up and give them two problems. Have them each explain how they would do the problem using either the unifix cubes or the hundred chart. Then have them switch problems and do it again. Have each of the problems shared by a different student.

Two digit number subtract a two digit number

Using subtract the tens

$$25 - 17$$

$$= (20 + 5) - 10 - 7$$

$$= (20 - 10) + 5 - 7$$

$$= 10 + 5 - 7$$

$$= 10 - 7 + 5$$

$$= 3 + 5$$

$$= 8$$

Use unifix cubes to show these problems. Then show these using 100 charts.

$$10 - 4$$

and

$$28 - 17$$

$$= (4 + 6) - 4$$

$$= 6 + 4 - 4$$

$$= 6 + 0$$

$$= 6$$

$$= (10 + 10 + 8) - (10 - 7)$$

$$= 10 + 10 - 10 + 8 - 7$$

$$= 10 + 0 + 8 - 7$$

$$= 18 - 7$$

$$= (11 + 7) - 7$$

$$= 11 + (7 - 7)$$

$$= 11$$

$$94 - 57$$

and

$$234 - 168$$

$$= (50 + 40 + 4) - 50 - 7$$

$$= 50 - 50 + 40 + 4 - 7$$

$$= 0 + 40 + 4 - 4 - 3$$

$$= 40 + 0 - 3$$

$$= 30 - 2$$

$$= 33$$

$$= (200 + 30 + 4) - 100 - 60 - 8$$

$$= 200 - 100 + 30 - 60 + 4 - 8$$

$$= 100 + 30 - 60 + 4 - 8$$

$$= 100 - 60 + 30 + 4 - 8$$

$$= 40 + 30 + 4 - 8$$

$$= 40 + (20 + 10) + 4 - 8$$

$$= 40 + 20 + 10 - 8 + 4$$

$$= 60 + 10 - 8 + 4$$

$$= 60 + 2 + 4$$

$$= 62 + 4$$

$$= 66$$