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I.   Introduction

Education is the engine of a country's development since it is in charge of training its citizens and enabling them to participate effectively and efficiently in today's society and that of the future. It is increasingly necessary to possess mathematical and scientific knowledge to make well-informed decisions in the face of social changes and technological advances.

In the subject of Mathematics, children are expected to develop and use a set of mental and operational skills to obtain a result. At the same time to investigate and interpret the information and apply it, adopt certain attitudes to solve problematic situations.

This methodological guide (MG) is part of the materials developed within the framework of the Project for the Improvement of Learning in Mathematics in Basic and Secondary Education ESMATE. Prepared and implemented by the Ministry of Education; to support teachers in their classroom practices during each of the Textbook classes, thus achieving active learning.

This methodological guide has the following purposes:

❶ Guide the class planning based on the achievement indicators and the content didactic proposal.

❷ Offer concrete and pertinent methodological suggestions to the student to promote a better understanding of the contents.

❸ Contribute to the professional development of teachers as part of their ongoing training.

Using this methodological guide will allow each teacher to acknowledge the approach proposed for developing content and achieve the indicators effectively and efficiently to make the most of the Textbook (TB). This document comes with material designed for students: a Textbook to work in the classroom and at home.

The (MG) should be assumed as a flexible and improvable proposal; in this sense, the teacher can make the necessary adjustments and support children's learning according to their individual needs.

The MG belongs to the educational center; therefore, its care and return at the end of the school year are a must.

II. ESMATE Learning Strategy

The learning of mathematics is a fundamental pillar, for develop skills for everyday life such as reasoning, logical and critical thinking, and substantiated argumentation; this allows the citizen to resolve situations in his environment more effectively.

The proposed strategy seeks to obtain better results in mathematics; learning, guaranteeing an adequate process, and envisioning three fundamental factors: quality educational materials, active learning time, and assistance in the learning process.

Technical strategy for learning improvement

It is a strategy focused on student learning through a permanent experience of collaboration and individual reflection. It promotes students' skills of search, analysis, and synthesis of information and active participation in problem solving.

Quality educational materials

Textbook	For the use of the students, presenting the contents to be developed in each class and whose characteristics are: • Didactic sequence for the different contents. • One achievement indicator per class. • Correspondence of the first item and the achievement indicator • In general, classes are display on a single page. • Exclusive spaces for the student to solve problems directly in the Textbook. • Exercises and problems for students to solve outside the classroom to practice the content developed in class. This list of exercises and problems is exhibit in the section called homework.

Active learning

This type of learning involves changing students' mental structures by analyzing, understanding, elaborating, and assimilating the various situations and information proposed in the lessons. In this approach, the student does not constitute a passive agent limited to listening to the class, taking notes, and occasionally asking questions.

Active learning is evidenced by:
❶ Solve and analyze exercises individually (individual learning).
❷ Exchange the solution in pairs, explain it to another or other partners (interactive learning).

It is recommended to do the individual work first and then the interactive work. This fundamental aspect of the strategy considers ensuring each class has at least 20 minutes of active learning using the TB and an additional 20 minutes at home to work on the section Homework. On the other hand, for a curricular load according to the reality of schools, the strategy proposes the effective development of 210 class hours (of 280 scheduled for the school year). Therefore, the TB is designed for 210 classes annually, and hopefully, the other 70 hours of class will be used for evaluation, reinforcement, recovery, and other school activities.

Learning process assistance

In the context of improving student learning, the role of the teacher is quite significant. Therefore, it is necessary to assist the student; that is, to be the **facilitator of the learning process**, in charge of guiding the processes of finding solutions to the situations raised, guiding the development of knowledge, and providing the spaces for the student to be the main actor of their learning.

Under this approach, an aspect to highlight is the self-assessment of the teacher, based on the results evidenced in the learning of their students and not in the teaching processes carried out.

• Assistance in the learning process is evident when:
• It raises the instruction concisely (indicates the work to be done in pairs or in a group).
• It guarantees active learning time in the students.
• It observes and guides the learning process.
• It motivates its students to solve the different situations presented by them.
• It forms self-correction habits in its students.

III. Textbook Structure

Elements of a textbook lesson

Indicates the lesson number .

Indicates the lesson number

The student must think of a solution for a problem, allowing the introduction of the content to be developed.

During the second phase of the class, the Textbook proposes one or more ways to solve the proposed problem.

The content is consolidated. Here the initial problem and the solution are related to explain the purpose of the class with mathematical.

Items are presented to the student to practice what they have learned..

Items similar to those in the class are presented for the student to practice at home.

A space for parents or a relative to sign as proof that the task has been done and reviewed.

Indicates the unit to which the class corresponds.

2.2 Formemos el 5

Analyze

There are 5 candies in each jar.
How many candies of each flavor are in each jar?

Solution

a. b. c. d.

Unit 2
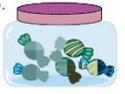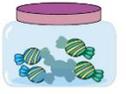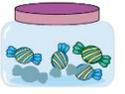
Counting

a. 1 plus [ ] b. [ ] plus [ ] c. [ ] plus [ ] d. [ ] plus [ ] Ana

Understanding

5 is obtained from:

○○○○○ 1 and 4   ○○○○○ 2 and 3   ○○○○○ 3 and 2   ○○○○○ 4 and 1

Solve

Complete:

○○○○○ [ ] and [ ] make [ ].   ○○○○○ [ ] and [ ] make [ ].

○○○○○ [ ] and [ ] make [ ].   ○○○○○ [ ] and [ ] make [ ].

Homework

Complete:

a. b. c.

[ ] and [ ] make [ ].   [ ] and [ ] make [ ].   [ ] and [ ] make [ ].

d. ★★★★★ e. ★★★★★ f. ★★★★★

[ ] and [ ] make [ ].   [ ] and [ ] make [ ].   [ ] and [ ] make [ ].

Relative's signature: _____

Thirty-nine   39

Special sections

Remember

Content related to the Analyze from previous units or grades.

What if?

Problem-related to the Analyze section that presents a variant, it may be a different case or a case with greater difficulty.

✦ Self-challenge

Mathematical challenges to creatively apply the knowledge obtained in class; it is an optional section depending on the time and scope of each student.

If you are done,This section proposes exercises on basic operations; the purpose is to solve them when the class finishes sooner than 45 minutes.

Let's practice what we have learned

These classes might have two functions:

1. Fixation: Items corresponding to classes from a lesson or unit; to fix the contents and identify students' difficulties. Are located end of a lesson or unit.

2. Review: items corresponding to the other units or previous years, in preparation for new content, are usually found at the beginning of a lesson or unit.

Our companions

Children present their solutions to the problems raised in the Analyze section. The intention is for students to identify with these companions in their reasoning and solutions.

In addition, four characters represent the fauna of El Salvador, which provide clues, recommendations, and additional information to solve the proposed exercises.

Joseph   Charles   Anthony   Mario

Julia   Carmen   Anna   Beatrice

Fungible books

The Textbook has spaces for students to complete their solutions, write down processes, and answer problems. Sometimes texts are presented in gray and larger font, indicating the student to repaint.

1 plus ☐

$7 + 3 = 10$

A: __10__ mangoes.

Cut-out material

Each student textbook contains a series of cut-out materials at the end, which are according to the materials shown in some classes. The intention is that students have these materials when developing a class; a box indicates which pages to cut from their Textbook.

Cut-out the addition cards 1, from pages 177 - 179.

In this sense, it is essential to instill responsibility and good care of the materials since they will be used frequently throughout the school year. Parental or family support is critical, and it is advisable to talk and informed them about it.

As a recommendation, cut out the materials as they are used and not all at once. In addition, each student can keep them in an envelope to avoid losing pieces and store them at the school to ensure their availability at the time of use.

The methodological guide also presents a series of cut-out materials for the teacher to use during class. These materials are more significant in size than the student version, considering they should be used in front of the classroom and be visually accessible to all students. The indications for cutting these materials are specified in the introductory pages of each unit, when applicable.

Learning steps

According to the strategy presented, the student is the main actor in the learning process, being who builds his knowledge and develops procedures from a didactic or problematic situation.

Thus, the teacher's primary role is to facilitate or assist the students' learning process, guaranteeing between the Solution and Solve sections at least 20 minutes of active learning.

The following is the learning assistance process a teacher can follow:

❶

❷

❸

❹

❺

Student	Teacher

❶ Analyze (3 - 7 minutes)

The main problem serves as the basis for the development of the class.

Student	Teacher
-Read and analyze the problem posed. -Understand and extract the information needed for the solution. -Develop a solution plan.	- It guides the student to read the initial problem from the TB by verifying the level of understanding on it. - Write in summary form on the board the problem posed in the Analyze. - Indicates to work individually on solving the problem.

❷ Solution (3 - 15 minutes)

Solution or solutions of the Analyze problem.

Student	Teacher
- Solves the problem individually by executing the elaborate plan. - Compares the solution with another partner or TB. - Share the solution with the class or in a group .	- It emphasizes and reinforces those aspects in which the students show difficulty when resolving. - Explain it to the class if you consider it necessary after assessing the group's level of understanding.

❸ Understanding (3 - 5 minutes)

Conclusion of the most important aspects of the class.

Student	Teacher
- Read and underline relevant information. - Identify new concepts. - If possible, associate with the work done in class.	- It emphasizes the crucial points of the Understanding by relating them to the steps of the solution.

❹ Solve (15 - 20 minutes)

Items to solve in class.

Student	Teacher
- At least the first item is made; based on the work done in class, it can rely on the Understanding section - Check the response with the one shared in the classroom.	- Assists in the solution process. - Guides in case of difficulty. - Directs the consolidation of items responses. - Assign homework

Homework (20 minutes)

❺ Exercises and problems to solve at home.

Student	Teacher
- Perform the proposed exercises. - Redo, again, the exercises marked with ✘ by the teacher.	- Reviews the task periodically, marking ✔ as correct and ✘ as incorrect.

Example using the multigrade Textbook

Time	4.°	5.°	6.°
From 0 to 15 min.	Indicate the Analyze.	Homework review among students, redoing the wrong answers.	Homework review among students, redoing the wrong answers.
	The student tries to solve the Analyze individually.	Indicate the Analyze.	The student tries to solve the Analyze individually.
		The student tries to solve the Analyze individually.	Aclaración de dudas sobre la solución del Analiza.
From 15 to 30 min.	Socialization of the solution and the Understanding.		The student tries to solve the Analyze individually.
	Students work on the Solve section.	Socialization of the solution and the Understanding.	
		Students work on the Solve section.	Socialization of the solution and the Understanding.
From 30 to 45 min.	Verification of the correct answer.		Students work on the Solve section.
	Students re-perform the problems they were wrong.	Verification of the correct answer.	
	Homework review among students, redoing the wrong answers.	Students re-perform the problems they were wrong.	Verification of the correct answer.

Aspects to consider in multigrade:

- In case of being a single teacher, take advantage of initiatives from the training practitioners, university social services, parents, among others.
- The combination of first and second grade is not recommended, as more individualized attention is required
- Creation of flexible schedules according to the contents, including combining the Mathematics class of one grade with other subjects in other grades.
- Collaboration from students who finish first, supporting their peers.
- Taking advantage of the MG's answers to verify the correct answer with the students.
- Creation learning habits such as analyzing and solving class problems before teacher's guidance

IV. Methodological Guide Structure

Each Methodological guide (MG) contains:

- **Unit Competencies:** They describe the skills that students must acquire at the end of the unit.
- **Sequence and Scope:** Shows the relationship of the contents to be developed with those of the previous and next grade.
- **Unit Plan:** It presents the distribution of the contents in lessons and classes.
- **Essential Points of each Lesson:** Summarizes the contents of the lesson, highlighting the essential aspects.
- **Class Methodological Proposal:** Establishes the achievement indicator, the purpose of the class, and relevant key points; in some cases, methodological proposals are presented to implement in the classroom; and on the whiteboard plan.
- **Unit Test:** The items in this proposal are based on the unit's main achievement indicators.

Lesson number, the name is found only in the first lesson class.

Textbook page.

Class achievement indicator, the number corresponds to the class number.

Purpose of the class.

Lesson 2

Achievement Indicator:
2.2 Decompose and compose the number 5

Objective: Establish the decompositions of the number 5 by counting elements of two sets with similar characteristics.

Key Points: The idea of introducing the decomposition of 5 is the same as that used in the previous class. On this occasion, the number 5 has one more decay than the number 4.
The conclusion is fundamental, so it is prudent to take it back to the whiteboard. You can use paper circles to set the decompositions as shown in the whiteboard plan
The problems in the Solve and Homework sections are similar to those in the previous class and require figure counting. However, it is significant to note that cases 1 and 4, 4, and 1 are distinct, as are 2 and 3, 3 and 2.

Notes:

Unit 2

Date: **Class: 2.2**
Ⓐ How many candies of each flavor are in each one? Ⓡ

Ⓢ Counting:
a. 1 plus 4 b. 2 plus 3 c. 3 plu 2 d. 4 plus 1

we can form 5 with :

1 y 4
2 y 3
3 y 2
4 y 1

a. 1 Plus 4 make 5 .
b. 2 Plus 3 make 5 .

Homework: Page 39

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22

23

Solving the TB the problems.

It proposes the essentials to be copied on the board and the distribution of the content of the class.

In some classes, other sections are used as methodological and material suggestions.

Preparing a class

The MG provides the tools and necessary resources for the development of each class in the classroom. Therefore it is not required to develop another plan (class script or didactic letter).

For the development of each class, the following steps are recommended:
- Read the lesson beforehand to identify the content flow and the essential aspects of each class.
- Analyze each class's proposal, solve all the problems, and identify the possible difficulties that the students could encounter.
- Consider some questions that can guide individual student work. .
- Determine the time that could be allocated to each section.
- Revise the whiteboard plan checking its correspondence with the sections of the Textbook.

During the development of each class (45 minutes), the whiteboard plays a fundamental role since it is a common notebook between the teacher and the students; in it, the process of class learning must be ordered. The Whiteboard Plan completes as the class unfolds. This guide proposes to use the following structure on the board, according to the math learning process.
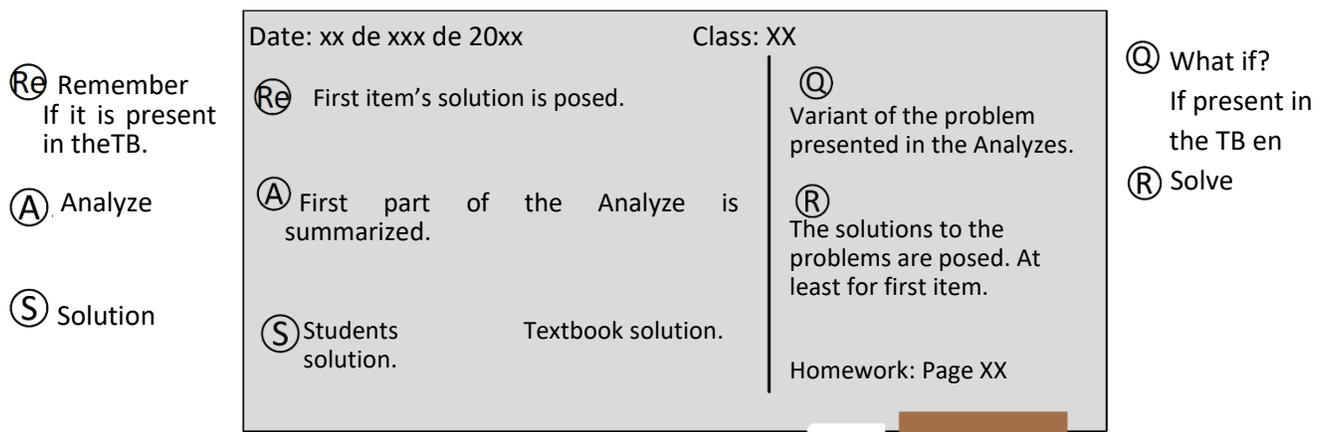
The **Remember** and **What if?** sections appear in some classes according to the need and approaches of each. Please note that the Understand section does not take part in the Whiteboard Plan; this section is to be read aloud, and students can revisit it in their TB as many times as necessary.

In the section, Ⓡ it is suggested to present the complete solution for the first item; a student can do it. Furthermore, write the answers for all other items for the students to verify the problems.

Unit, quarterly and final test

This methodological guide considers three types of tests whose objective is to obtain the necessary information to make decisions aimed at reorienting students' learning processes.

Unit test:	The items of this proposal are based on the main achievement indicators of the unit to accomplish the expected competencies.
Quarterly test:	It responds to the main indicators of achievement of the contents developed in each unit that make up the quarter.
Final test	The items are related to the main indicators that respond to the achievement of the grade competencies.

The items of these tests are constructed in a descriptive way, similar to the problems developed in the Textbook, and correspond to three cognitive levels: knowledge (Kn), application (Ap), and reasoning (Re). The unit tests include ten items, and the quarterly and final tests around ten to fifteen items, whose application is estimated to last one class hour, depending on the number of items in the test and the complexity of the contents to be evaluated.

The tests are designed so the content in which students need to improve can be identified; for this, it is indicated in each of the test items, the class, and the lesson to which they correspond, so that students can practice the content problems they have difficulty. It is recommended to apply the corresponding test at the end of each unit, quarter, and end of the academic year.

In addition, based on the results of each test, the teacher can self-assess their performance and take steps to improve their practices in the classroom, and design strategies for feedback.

Evaluation method:
The evaluation scale is considered as total points, partial points, and zero (0), with the following criteria:

- Total points: performs all the processes correctly and poses the answer correctly. If the test has more than ten items, the weighting of each item is calculated by dividing ten by the total number of items in the test.
- Partial points**:** performs some of the processes correctly; in this case, the weighting is considered as half of the value assigned to each item.
- Zero: No solution of the item is provided or the processes presented are not correct

V. Guidelines for the development of a class

According to the Mathematics Study Program, a class hour **lasts 45 minutes,** and the annual hourly load is **280 class hours**. Developing a class in 45 minutes is not a simple task; for this reason, the following guidelines are provided.

How to organize students' desks

This arrangement may vary depending on the class purpose; however, in the Math class, it is advised they be placed in rows, all facing towards the board, for the following reasons:
1. It allows the teacher to move among the students and verify their work.
2. It facilitates interactive learning between peers.
3. It provides comfort in the posture of students to look at the whiteboard.

Set guidelines for the start of the class

It is vital, in addition to the existing rules of conduct in the classroom; students prepare in advance the necessary materials to start each class, such as TB, notebook, pencil, and eraser.

Time for reminder or review (Remember)

When difficulties are detected in the Reminder section, and more time is required to guarantee the knowledge, use the remaining hours from the 210 considered in the Textbook to reinforce the contents.

Time for individual solution of the initial problem (Analyze)

Often, even when suggestions or clues are provided to solve the initial problem, students do not know what to do and let time pass waiting for the resolution by a third party and copy the solution. In this case, it is better to change the assistance and direct it towards interactive learning by inviting them to consult with their peers and to resolve in pairs

Assistance according to the level of difficulty

Occasionally, during the resolution of problems, the teacher focuses on guiding a student who shows difficulties, and the time is not enough to provide timely support to the rest of the classroom who also have doubts; for this reason, it is necessary to make a prior evaluation allowing identifying the difficulties and frequency. Therefore if the number of students with difficulties is less than 5, individual assistance can be given, and otherwise, it can be explained in groups or to the whole classroom, as it deems appropriate.

Collaboration of students who finish quickly

A classroom is usually heterogeneous, so there will always be individual differences, especially in problem-solving skills. Consequently, the teacher can request support from the students with greater skills, allowing those with difficulties to receive timely guidance, and those assisting can internalize their learning by explaining to their peers. On the other hand, the teacher can prepare another series of problems to consolidate the content or other types of problems as a challenge so that students who finish first can develop their abilities.

Revisión de los ejercicios resueltos con respuestas correctas

An alternative is forming habits in students such as self-correction and re-performing problems where they were wrong.
Verifying the correct answers verbally or writing them on the board allows consolidating these habits; it can also exchange notebooks between peers to correct each other. To unify reviewing the problems it is suggested:

- If the solution is correct, mark it with ✔.
- If the solution has an error, mark with ✘ leaving the error and performing the problem again.

When time is not enough to finish the contents of a class

When the time does not reach, and problems remain unresolved, the teacher can decide to reserve these exercises (without solving them) and use them for reinforcement before the tests or when extra time is available in the school (part of the 70 hours). It is not advisable to resume these exercises for the next class because that implies creating gaps in the journey.

When the class takes finishes before 45 minutes

Some of the classes may finish before **45 minutes**; in these cases, take advantage of the remaining time in some of the following activities:
- Work on the homework.
- Verify with the classroom the tasks answers.
- Reinforce basic operations such as additions or subtractions.
- Work on issues in the Resolve section not finished in previous classes.
- Reinforce some content in which students present difficulties.

VI. Annual Plan

Quarter	Month	Unit (Hours of class)	Lessons
First	January	U1: Let's know the basics of mathematics (12)	• Let's identify and form collections. • Let's compare and identify objects. • Let's recognize the position of objects and time • Let's identify patterns
	February	U2: Let's know the numbers up to 10 and the ordinals up to 10th (22)	• Let's know the number from 0 to 10 • Let's form numbers from 4 to 10 • Let's know the ordinals numbers
	March	U3: Let's add and subtract horizontally with numbers up to 10(26)	• Let's add horizontally. • Let's subtract horizontally. • Let's add and subtract three numbers. horizontally.
	April	U4: Let's know the numbers up to 20. (11)	• Let's know the numbers from 11 to 20. • Let's sort and place the numbers on the number line. • Counting in groups
End of first quarter			
Second	May	U5: Let's add and subtract horizontally with numbers up to 20. (36)	• Adding 10 to a number. • Let's add a 2-digit number. • Let's subtract from a 2-digit number. • Let's subtract a number less than or equal to 10. • Let's add and subtract three numbers horizontally.
	June	U6: Let's know the numbers up to 100(25)	• Let's know the numbers up to 99. • Let's form the numbers up to 100. • Let's place the numbers on the number line. • Let's compare numbers.
	July	U7: Let's add and subtract vertically (15)	• Let's add up vertically. • Let's subtract vertically.
End of second quarter			

Quarter	Month	Unit (Hours of class)	Lessons
Third	August	U8: Let's know the lines and shapes in the environment (11)	• Let's know lines by their shape and position. • Let's identify the triangle, rectangle, square and circle shapes.
		U9: Let's add and subtract using the circle graph (13)	• Adding and subtracting ordinal numbers. • Adding and subtracting.
	September	U10: Let's apply Mathematics (15)	• Let us compare lengths and surfaces. • Let us compare capacity. • Let us compare weights. • Let us use currencies and their equivalents. • Let us know the clock, time and minutes.
	October	U11: Let's apply what we learned (24)	• Let's count in groups. • Let us add the same number several times • Let's practice addition and subtraction
End of third quarter				

Unit 5

Let's add and subtract horizontally with numbers up to 20

1 Unit Competencies
- Accurately raise and solve additions with the sense of grouping and adding, with totals no greater than 20, to solve real-life problems.
- Raise and solve with precision subtractions with minuend less than or equal to 20, from situations of the environment with the sense of removing, complementing, differentiating, to provide solutions to problematic situations

2 Sequence and Scope

1.º	2.º

Unit 3: Let's add and subtract horizontally with numbers up to 10
- Let's add horizontally
- Let's subtract horizontally
- Let's add and subtract three numbers. horizontally

Unit 5: Let's add and subtract horizontally with numbers up to 20
- Add a number to 10
- Let's add a two-digit number
- Let's subtract from a two-digit number
- Let's subtract a number less than or equal to 10
- Let's add and subtract three numbers horizontally.

Unit 7: Let's add and subtract vertically
- Let's add up vertically
- Let's subtract vertically

Unit 9: Let's add and subtract using the circle graph
- Adding and subtracting ordinal numbers.
- Adding and subtracting

Unit 2: Let's learn more about the addition
- Let's remember how to add
- Let's add up to two-digit numbers and carryover
- Let's recognize characteristics of the addition
- Let's add up to three-digit numbers with and without carrying over.

Unit 4: Let's learn more about subtraction
- Let's remember how to subtract
- Let's subtract up to two-digit numbers borrowing.
- Subtract numbers up to three-digits without borrowing and borrowing only once.
- Subtract numbers up to three-digits by borrowing two or three times
- Let's perform additions and subtractions by relating them to a tape graph

Lesson	Class	Title
1 **Let's add 10 to a number**	1	Let's practice what we learned
	2	Adding a number to 10
	3	Adding 10 to a number
2 **Add a number of up to 2 digits**	1	Let's add a 2-digit number and a 1-digit number
	2	Let's add a number to 9
	3	Let's add a number to 8
	4	Let's add a number to 7 or 6
	5	Let's practice what we learned
	6	Let's add 9 to another number
	7	Let's add 8 to another number
	8	Let's add 7 or 6 to another number
	9	Let's add up 3 numbers
	10	Let's practice what we learned
	11	Let's find the missing number, part 1
	12	Let's find the missing number, part 2
	13	Let's find patterns using addition cards
	14	Let's have some fun
	15	Let's practice what we learned

Lesson	Class	Title
	1	Unit test 1
3 Let's subtract from a 2-digit number	1	Let's subtract from a 2-digit number, part 1
	2	Let's subtract from a 2-digit number, part 2
	3	Let's practice what we learned
4 Let's subtract a number less than or equal to 10	1	Let's subtract 9 from a number less than 20
	2	Let's subtract 8 from a number less than 20
	3	Let's subtract a 1-digit number to a number less than 20
	4	Let's practice what we learned
	5	Let's subtract in another way
	6	Let's find the missing number, part 3
	7	Let's find the missing number, part 4
	8	Let's find patterns using subtraction cards
	9	Let's practice what we learned
	10	Let's practice what we learned
5 Let's add and subtract three numbers horizontally	1	Let's subtract twice
	2	Let's add and subtract
	3	Let's subtract and add

Lesson	Class	Title
	4	Let's practice what we learned
	5	Let's practice what we learned

Lesson	Class	Title
	1	Unit test 2

Total Classes **36**
+ Unit test 1
+ Unit test 2

Lesson 1

Let's add 10 and a number (3 classes)

This lesson intends to form a basis for the additions and subtractions to be taught in the following lessons. Additions using ten and numbers less than ten are calculated by composition. To establish the transition from concrete to abstract the strip of 10 and the caps will be used. The composition of numbers, specifically numbers 11 to 20, is used to define the sums U + 10 and 10 + U. For this unit, it is imperative that the students carry the strip of 10; if possible, keep it at the school to avoid losing it.

Lesson 2

Let's add a number of up to 2-digits (15 classes)

The lesson discusses additions with addend up to 19. It will be worked horizontally, and additions of the type U + U = 1U will not be considered carryover additions but as exceptional cases, which will serve as a basis when numbers of two or more digits are added in future units or grades, when tens, hundreds, Etc, become part of the class.

The totals of the addition developed in this lesson will always be less than 20. The sums you work on in this lesson are of the form 1U + U = 1U, U + 1U = 1U, U + U = 1U. This lesson makes use of the 10-strip and the caps.

The following figure with the strip of 10 shows the addition 9 + 3; the idea is to compose the 10 with the first addend and some other set elements.
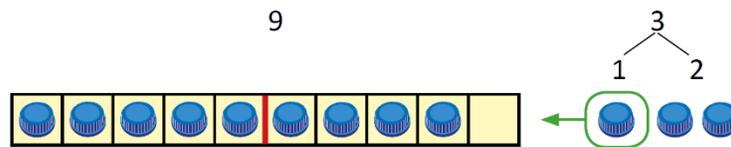
Additions of the type 1U + U and U + 1U are addressed in several cases: 9 + U, 8 + U, 7 + U, 6 + U, U + 9, U + 8, U + 7 and U + 6; these six classes (7 + U, 6 + U and U + 7, U + 6 are developed in the same class) will allow the student to observe the possible ways of decomposing to perform the additions.

The strip of 10 with the caps provides an excellent visual aid, and it is essential to perform the actions that represent each step of the addition; thus, the student will be able to associate the abstract (the process of adding) with something concrete.

For this lesson, students will use add-in cards 2, 3, and 4, located on pages 189 - 201 of the Textbook; there is also a game, located on page 203 of the Textbook and pages 351 - 359 of the Methodological Guide. The game mentioned above is similar to Bingo (Sungo = Sum + Bingo), and the idea is to allow students to practice the mental calculation of sums through a game.

On the other hand, a scheme is used, providing a tool to students to have better control over the additions made; It allows visualizing the strategy to be used. The introduction of such a scheme is detailed later on when used in classes for the first time.

Lesson 3

Let's subtract a 2-digit number (3 classes)

- This lesson addresses three particular cases of subtractions when the minuend is two digits:
- 1U - U, when the number of units of the minuend is equal to the subtrahend,
- 1U - 10,

1U - U, when the number of units of the minuend is greater than the subtrahend.

This lesson's content hopes to form the basis for the next lesson subtractions since the strategy used and the types of subtractions will be a requirement for the form 1U - U when the figure of the units of the minuend is less than the subtrahend..

Lesson 4

Let's subtract a number less than or equal to 10 (10 classes)

This lesson addresses the type of missing subtractions. Class 3.2 of this unit introduced a beneficial scheme for subtraction, and this lesson continues its use; this scheme is a tool for students, which will facilitate the subtraction process and allow better control over operations. A detailed explanation is presented later in the class when it is first used.

The basis for the subtractions made in this lesson is the decomposition of the numbers, so understanding the contents of units 2 and 4 is essential for this unit's sound development..

Let's add and subtract three numbers horizontally (3 classes)

This lesson discusses combined addition and subtraction operations. In unit 3, these operations were worked with numbers of a figure, and this time the same operations are revisited, but a first element is a two-figure number.

The strategy for performing these operations is the same as that used in unit 3, so it will be more natural for students. On the other hand, the schematics introduced in Lessons 2 and 4 of this unit will be helpful.

 For this unit, some cut-out materials are available, which are detailed below:
• SUNGO cards are available on pages 351 - 359. Purple cards correspond to sums from Lesson 2, while pink cards belong to subtractions from Lesson 4.
• The strip of 10 and the caps were cut out when starting unit 4.

Lesson 1 Let's add 10 and a number

1.1 Let's practice what we learned

Mention the missing number to make 10.

Two.

Homework

1. Complete:

a. 4 plus [4] make 8.

b. 3 plus [3] make 6.

c. 2 plus [8] make 10.

d. [2] Plus 7 make 9.

e. [3] plus 5 make 8.

f. [3] plus 2 make 5.

g. 2 plus 7 make [9]

h. 3 plus 4 make [7]

i. 1 plus 5 make [6]

2. Complete to make the number.

a. 5 [5]
10

b. 7 [2]
9

c. 2 [3]
5

d. 4 [2]
6

e. [5] 3
8

f. [2] 8
10

g. [4] 1
5

h. [3] 4
7

i. 3 1
[4]

j. 6 3
[9]

k. 7 2
[9]

Don't forget your strip of 10 for the next class!

Relative's signature: _____

220

1

14

14

10 + 2 = 12

12

10 + 5 = 15

15

3. Perform:

a. $10 + 7 = \boxed{17}$ b. $10 + 1 = 11$ c. $10 + 4 = 14$ d. $10 + 9 = 19$

4. Mario has 10 mangoes and Peter has 6.
Between the two, how many mangoes do they have?

$10 + 6 = 16$

A: __16__ mangoes.

Homework

1. How many cakes are there ?

$10 + 3 = 13$

A: __13__ cakes.

2. How many stars are there?
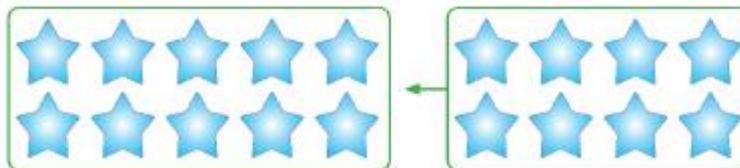
$10 + 8 = 18$

A: __18__ stars.

3. Perform:

a. $10 + 3 = \boxed{13}$ b. $10 + 6 = 16$ c. $10 + 2 = 12$ d. $10 + 8 = 18$

e. $10 + 5 = 15$ f. $10 + 4 = 14$ g. $10 + 9 = 19$ h. $10 + 1 = 11$

4. Carmen had 10 cakes and her aunt gave her 7.
How many cakes does she have in total?

Don't forget your strip of 10 for the next class!

$10 + 7 = 17$

A: __17__ cakes.

Relative's signature: _____

Achievement Indicator:

1.2 Horizontally add a one-digit number to 10, using the composition (10 + U = 1U).

Objective: Together with the next one, this class seeks to form the basis to add a two-digit number with one-digit and add two numbers of one-digit since it will always seek to obtain an addition using ten and another number.

In unit 4, the number composition from 11 to 20, using 10 and another digit numbers, was established. These compositions will be helpful.

Class 1.1 provides a space to remember the compositions of 10 and numbers 11 to 20.

Key Points: The Analyze section starts with a problem where the PO has to be identified to respond to the question posed, recalling the addition seen in unit 3. The action indicates grouping; therefore, the operation is an addition.

After establishing the PO; use caps and the strip of 10 to calculate the answer; Since 10 and 4 make 14, we conclude that 10 + 4 = 14.

In unit 4, the strip of 10 was used vertically; in this unit, for reasons of space, they are used horizontally.

Note that this class addresses only additions of type 10 + U, as it seeks to strengthen the process in this type of addition.

❶ The class conclusion precisely emphasizes that adding 10 and another number can be done through composition. This was explained at the beginning of unit 4.

In the problems section, the scheme indicating addition is revisited, enclosing the elements of a set in green; there are problems with direct addition and others associated with a situation.

Materials: The strip of 10 and caps

Date: **Class:** 1.2

Ⓐ ¿Between the two, how many crayons do they have?

PS: 10 + 4

Ⓢ
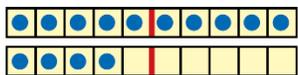
Since 10 and 4 make 14:

    10 + 4 = 14

They have 14 crayons between the two.

Ⓡ

1. How many cars are there?

a.
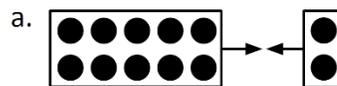
    10 + 2 = 12

A: 12 cars

3. Perform:

a. 10 + 7 = | 17 | b. 10 + 1 = 11

Homework: Page 120

1.3 Adding 10 to a number

Analyze

Maria picks 5 mangoes and her sister picks another 10.
Between the two, how many mangoes do they have?

PS: _____ 5 + 10 _____

Solution

I use caps and the strip of 10:

Mario

Because 5 plus 10 make 15 :

$$5 + 10 = 15$$

They have 15 mangoes between the two.

Understanding

Use the composition to add 10 and a number less than 10.

Solve

a. $6 + 10 =$ 16   b. $2 + 10 = 12$ c. $8 + 10 = 18$ d. $3 + 10 = 13$

Homework

1. Perform:

a. $1 + 10 =$ 11   b. $4 + 10 = 14$ c. $7 + 10 = 17$ d. $9 + 10 = 19$

e. $3 + 10 = 13$ f. $5 + 10 = 15$ g. $6 + 10 = 16$ h. $2 + 10 = 12$

2. A gardener sows eight plants in the morning and ten in the afternoon.
How many plants does he plant in total? $8 + 10 = 18$

> Don't forget your strip of 10 for the next class!

A: __18__ plants.

Relative's signature: _____

Unit 5

One hundred twenty one   121

Achievement Indicator:

1.3   Add 10 to a number horizontally, using composition (U + 10 = 1U).

Key Points:

As in the previous class, in this one, additions of the form U + 10 are developed, considering that the commutative law of numbers has not been seen yet. This type of addition is stated as the composition of a number and 10.

If the students do not remember the compositions of the numbers from 11 to 20, you can go back to some problems such as those of classes 1.1 and 1.2 in unit 4 (pages 104 - 108 of the Textbook).

It is crucial for students to discover that when performing sums of the form U + 10 (or 10 + U) the result will always be of the form 1U; that is, the number of units coincide with the number of a figure involved in the addition.

Materials: The strip of 10 and caps.

Notes:

**Date:**   **Class:** 1.3

(A) Between the two, how many mangoes do they have?

PS: ___5 + 10___

(S)
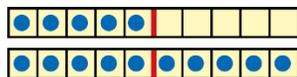
Since 5 and 10 make 15:

___5 + 10 = 15___

They have 15 mangoes between the two.

(R) Perform:

a. 6 + 10 = 16   b. 2 + 10 = 12

c. 8 + 10 = 18   d. 3 + 10 = 13

Homework: Page 121

225

Lesson 2

Let's add a number of up to 2-digits

2.1 Let's add a 2-digit number and a 1-digit number

Analyze

Carmen has twelve stuffed chickens and her sister has three.
Between the two, how many stuffed chickens do they have?

PS: ___ $12 + 3$ ___

Solution

Ana: I decompose 12 into 10 and 2:

10   2

12
10   2

I add 3 caps, 2 plus 3 make 5:

10   2   3

$12 + 3$
10   5   ❶
   2

10 plus 5 make 15:

$12 + 3$
10   5
   2
15 ❷
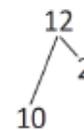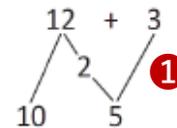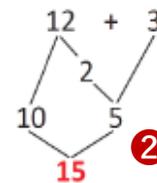
A: ___ 15 ___ stuffed chickens.

Understanding

To add a two-digit number and a one-digit number:

① Decompose the two-digit number into 10 and another number.   Step ①

② Add the different numbers than 10.

③ Add the result to 10.

$12 + 3$
Step ① 2
10   5 Step ②
15 Step ③
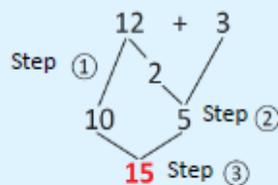
❸ **What if?**

Perform 6 + 13.

① 13 is decomposed into [3] and 10.

② Add the different numbers than 10.

③ Add the result to 10

$6 + 13$
Step ② 3   Step ①
9   10
19 Step ③

Lesson 2
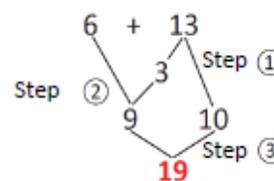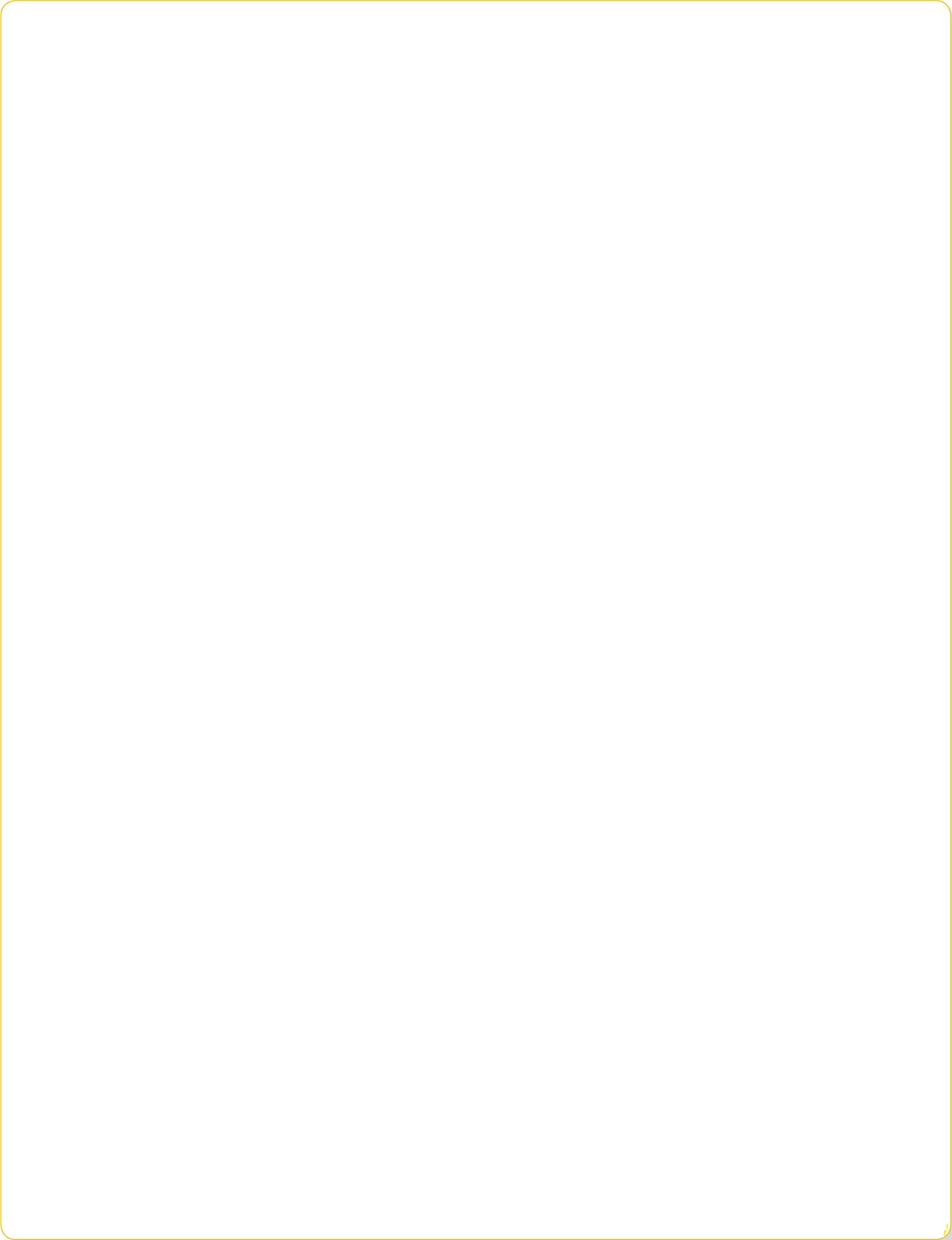
2.1 Horizontally adds a two-digit number and one-digit number (1U + U = 1U and U + 1U = 1U), whose total is less than 20.

Key Points: A new scheme is being introduced from this class, similar to the one used in unit 3.   Although the decomposition is done first, and the composition second. The class development shows the process of addition with the strip of 10, and simultaneously, the calculations representing these processes are written.

Since the first addend is a two-digit number, we will try to decompose it into 10 and another number; that's the first step to perform:

$$12 + 3$$
$$10 \quad 2$$
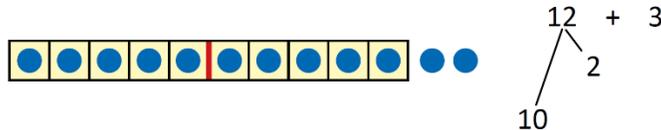
The strip of 10 can help visually understand what it means to decompose the number into 10 and another number.

Being this is the first class in which the scheme and strategy are used to add numbers whose result is greater than 10, it is important to use the visual resource.

❶ The addition made in this step was worked in unit 3, while the addition made in ❷ was worked in class 1.2 of this unit.

In ❸ the case arises when the two-digit number is the second addend. The strategy is the same: decompose the number into two digits, and decompose the second addend.

In the problems section, the first two tasks have already outlined, so they can focus on operations and guide them in their use.

Materials: The strip of 10 and caps.

Date: **Class:** 2.1

(A) Between the two, how many stuffed chicken do they have?

PS: 12 + 3

(S) I decompose 12 into 10 and 2.

I add 3 caps, 2 plus 3 make 5.

10 plus 5 make 15.

$$12 + 3$$
$$10 \quad 2 \quad 5$$
$$\mathbf{15}$$
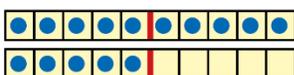
A: 15 stuffed chickens

(Q) Perform: 6 + 13.

$$6 + 13$$
$$3$$
$$9 \quad 10$$
$$\mathbf{19}$$

(R) Perform:

a. 14 + 3 = 17

$$4$$
$$10 \quad 7$$
$$17$$
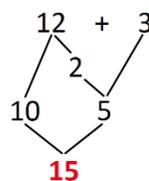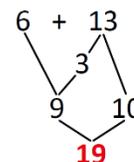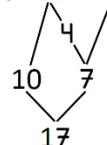
b. 11 + 7 = 18

$$1$$
$$10 \quad 8$$
$$18$$
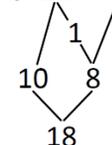
Homework: Page 123

Lesson 2

❶

15

10

9

12

❷

Lesson 2

Solve

Perform:

a. $9 + 6 = 15$

```
        1
   10       5
       15
```

b. $9 + 5 = 14$

```
        1
   10       4
       14
```

c. $9 + 2 = 11$

```
       1
   10     1
       11
```

d. $9 + 8 = 17$

```
       1
   10     7
       17
```

e. $9 + 7 = 16$

```
       1
   10     6
       16
```

f. $9 + 4 = 13$

```
       1
   10     3
       13
```

g. $9 + 9 = 18$

```
       1
   10     8
       18
```

h. $9 + 3 = 12$

```
       1
   10     2
       12
```

Homework

1. Perform:

a. $9 + 7 = 16$

```
       1
   10     6
       16
```

b. $9 + 3 = 12$

```
       1
   10     2
       12
```

c. $9 + 5 = 14$

```
       1
   10     4
       14
```

d. $9 + 4 = 13$

```
       1
   10     3
       13
```

e. $9 + 8 = 17$

```
       1
   10     7
       17
```

f. $9 + 2 = 11$

```
       1
   10     1
       11
```

g. $9 + 6 = 15$

```
       1
   10     5
       15
```

h. $9 + 9 = 18$

```
       1
   10     8
       18
```

2. Julia had 9 tangerines and bought 5 more.
   How many tangerines does she have in total?

$9 + 5 = 14$
_____

A: __14__ tangerines.

```
   9 + 5
       1
   10     4
       14
```

Don't forget your strip of 10 for the next class!

Relative's signature: _____

Achievement Indicator:

2.2 Horizontally adds a one-digit number to 9 by decomposing and forming 10 in the calculation process (9 + U = 1U) and whose total is greater than 10.

Objective: En esta clase se establece la estrategia para sumar un número a 9, la cual se utilizará en las siguientes dos clases, por lo que la comprensión de la idea es importante en este primer encuentro.

Key Points: The main strategy for adding a number to 9 is to form 10 with nine and the other number; to accomplish this; the number other than 9 is decomposed to form 10; as one is missing to complete 10 with 9, the other number must be decomposed down into one and something else. ❶ The Remember section aims to support this idea, allowing space for students to remember the cases that make up the 10.

Problem solving will allow students to strengthen the idea as they solve the additions.

❷ The steps defined in the Understand section refer to decomposing the number other than 9; in the event the two numbers are 9, you can decompose either of them.

At this point, the students have already manipulated the caps to understand the process followed to add up; from here (if you deem it relevant), use a visual resource on the whiteboard without them doing it individually. The latter will allow you to focus on making the sums directly and not so much on handling the material.

Materials: The strip of 10 and caps.

Notes: _____
_____
_____

Date: **Class: 2.2**

(Re) Complete :

    a. 9 plus 1 make 10   b. 2 plus 8 make 10.

(A) How many cookies do they have in total?

    PS: __9 + 3__

(S) I descompose 3 into 1 and 2.

    9 plus 1 make 10.

    10 plus 2 make 12.

$$9 + 3$$
$$1$$
$$10 \quad 2$$
$$12$$

    A: 12 cookies
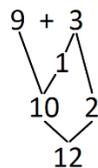
(R) Perform:

    a. $9 + 6 = 15$ b. $9 + 5 = 14$
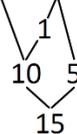
$$1 \qquad\qquad 1$$
$$10 \quad 5 \qquad 10 \quad 4$$
$$15 \qquad\qquad 14$$

Homework: Page 125

Lesson 2

2.3 Let's add a number to 8

Analyze

Charles scored eight goals in the first half of a football match.
In the second half, he scores four more goals.
How many goals did he score in total?

PS: _____ $8 + 4$ ❶

Solution

Beatrice

I decompose 4 into 2 and 2:

8   4 $8 + 4$
                        2
                          2

8 plus 2 make 10:

$8 + 4$
  2
10   2

10 plus 2 make 12:

$8 + 4$
  2
10   2
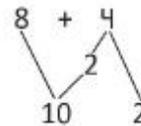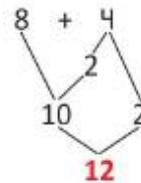
A: ___12___ goals.   **12**

Understanding

To add a number to 8:

① Descompose the second addend into 2 and another number.

② Add to form 10.

③ Add 10 and the remaining number

❷ If both addends are 8, you can decompose either of them.

$8 + 4$
  2   Step ①
Step ② 10   2
        Step ③
      12

Solve

1. Perform:

a. $8 + 6 = 14$
     2
   10   4
     14

b. $8 + 5 = 13$
     2
   10   3
     13

c. $8 + 4 = 12$
     2
   10   2
     12

d. $8 + 3 = 11$
     2
   10   1
     11

8 + 5 = 13

13

8 + 7 = 15

15

2.3 Horizontally adds a number from one digit to 8 by decomposing and forming 10 in the calculation process (8 + U = 1U) and whose total is greater than 10.

Objective: Set the strategy to add a number from one-digit to 8.

Key Points: The strategy for adding a number to 8 is the same as that used in the previous class. That is, we seek to form 10 with 8, so we must decompose the second by adding two and another number. The basic question to make the sum indicated in ❶ should be: how much does it take to make 10 using 8? The students' answer must be "2", and based on their answer, and we proceed: decompose four into two and, what other number?

❷ If the second addend is 8, then any of them can be decomposed; although, because of the way it has been done, it will be more natural for students to decompose the second addend.

It is necessary to remember the first item serves to monitor how much the students have understood the class, so you have to allow them to try it on their own; if you notice that they are unable to resolve it, refer to the Understand section and to follow the steps specified there.

You can continue to use the strip of 10 and the caps, but if you have already understood the strategy, it will be sufficient to be guided by the graph that appears in the Textbook.

Notes:

_____

_____

_____

_____

_____

Date: **Class: 2.**3

Ⓐ How many goals did Charles score in total?

PS: _____8 + 4_____

Ⓢ I decompose 4 into 2 and 2.

8 plus 2 make 10.

10 plus 2 make 12.
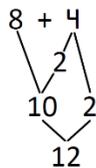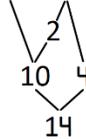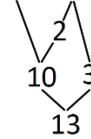
$$8 + 4$$
$$\diagup\diagdown$$
$$2$$
$$10 \quad 2$$
$$\diagdown\diagup$$
$$12$$

● ● ● ● ● | ● ● ● ● ● ● ●

A: 12 goals.

Ⓡ Perform:

a. 8 + 6 = 14
$$\diagdown$$
$$2$$
$$10 \quad 4$$
$$\diagdown\diagup$$
$$14$$

b. 8 + 5 = 13
$$\diagdown$$
$$2$$
$$10 \quad 3$$
$$\diagdown\diagup$$
$$13$$

Homework: Page 127
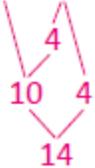
❶

❷

12

11

e. 6 + 6 = 12
4
10   2
12

f. 6 + 8 = 14
4
10   4
14

g. 6 + 7 = 13
4
10   3
13

h. 6 + 5 = 11
4
10   1
11

Homework

1. Perform:

a. 6 + 5 = 11
4
10   1
11

b. 7 + 6 = 13
3
10   3
13

c. 6 + 8 = 14
4
10   4
14

d. 7 + 4 = 11
3
10   1
11

e. 6 + 9 = 12
4
10   5
15

f. 7 + 5 = 14
3
10   2
12

g. 6 + 6 = 12
4
10   2
12

h. 7 + 9 = 14
3
10   6
16
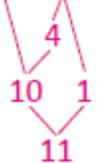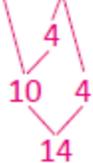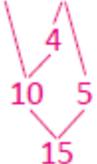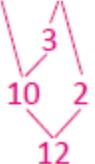
i. 7 + 7 = 14
3
10   4
14

j. 7 + 8 = 15
3
10   5
15

k. 6 + 7 = 13
4
10   3
13
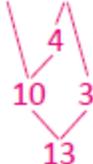
2. 7 cakes are baked, and the next day 9 are baked.
How many cakes are there in total?

7 + 9
3
10   6
16

_____ 7 + 9 = 16 _____

A: ___16___ cakes.

Unit 5

Relative's signature: _____

Achievement Indicator:

2.4 Horizontally adds a number from one digit to 7 or 6 by decomposing and forming 10 in the calculation process (7 + U = 1U and 6 + U = 1U) and whose total is greater than 10.

Objective: Set the strategy to add a number to 7 or 6.

Key Points: The strategy used to add a number to 9 and 8; will also be used this time. While adding a number to 7, the second addend is decomposed into three (3) and another number, since it seeks to form the 10 using 7. Similarly, with 6, it is decomposed into four and another number, the second addend, to form 10 with 6.

Notice in this class the strip of 10 is no longer used as a visual resource, and two cases are developed using the same strategy as in the previous two classes.

Erratum: The addition shown in ❶ and ❷ should be 6 + 5.

Notes:

Date: **Class: 2.4**

(A) Make the following additions:

  a. 7 + 5   b. 6 + 5

(S) a.   b.

$$7 + 5$$
$$3$$
$$10 \quad 2$$
$$12$$

$$6 + 5$$
$$4$$
$$10 \quad 1$$
$$11$$

   7 + 5 = 12   6 + 5 = 11

(R) Perform:

a. 7 + 6 = 13   b. 7 + 9 = 16
$$3$$ $$3$$
$$10 \quad 3$$ $$10 \quad 6$$
$$13$$ $$16$$

e. 6 + 6 = 12   f. 6 + 8 = 14
$$4$$ $$4$$
$$10 \quad 2$$ $$10 \quad 4$$
$$12$$ $$14$$

Homework: Page 129

Achievement Indicator:

2.5 Solve problems corresponding to adding one-digit numbers and two-digit numbers and adding a number to 9, 8, 7, and 6.

2.5 Let's practice what we learned

1. Perform:

a. $12 + 6 = 18$

$10 \quad 8$ (2)

18

b. $10 + 3 = 13$

c. $7 + 10 = 17$

d. $9 + 4 = 13$

$10 \quad 3$ (1)

13

e. $8 + 5 = 13$

$10 \quad 3$ (2)

13

f. $7 + 4 = 11$

$10 \quad 1$ (3)

11

g. $6 + 6 = 12$

$10 \quad 2$ (4)

12

h. $8 + 9 = 17$

$10 \quad 7$ (2)
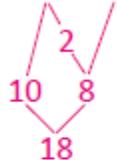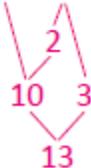
17
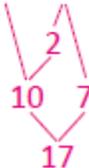
2. There were 8 bees in a hive and 6 more arrived. How many bees are there in total?

$8 + 6$

$10 \quad 4$ (2)

14

$\underline{\qquad 8 + 6 = 14 \qquad}$

A: __14__ bees.

Homework

1. Perform:

a. $6 + 8 = 14$

$10 \quad 4$ (4)

14

b. $9 + 3 = 12$

$10 \quad 2$ (1)

12

c. $8 + 6 = 14$

$10 \quad 4$ (2)

14

d. $13 + 4 = 17$

$10 \quad 7$ (3)

17

e. $2 + 10 = 12$

f. $16 + 1 = 17$

$10 \quad 7$ (6)

17

g. $10 + 5 = 15$

h. $7 + 7 = 14$

$10 \quad 4$ (3)
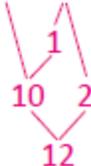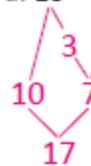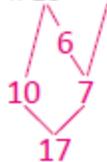
14

2. 11 people enter a room. Later on, another 7 people arrived. How many people are there in total?

$11 + 7$

$10 \quad 8$ (1)

18

$\underline{\qquad 11 + 7 = 18 \qquad}$

A: __18__ people.

Don't forget your strip of 10 for the next class!

Relative's signature: _____

Lesson 2

14

Lesson 2

Solve

Perform:

a. 3 + 9 = 12

1

2   10

12

b. 2 + 9 = 11

1

1   10

11

c. 8 + 9 = 17

1

7   10

17

d. 4 + 9 = 13

1

3   10

13

e. 6 + 9 = 15

1

5   10

15

f. 7 + 9 = 16

1

6   10
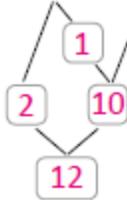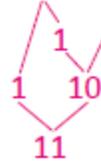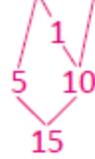
16

Homework

1. Perform:

a. 5 + 9 = 14

1

4   10

14

b. 3 + 9 = 12

1

2   10

12

c. 4 + 9 = 13

1

3   10

13

d. 7 + 9 = 16

1

6   10

16

e. 8 + 9 = 17

1

7   10

17

f. 9 + 9 = 18

1

8   10
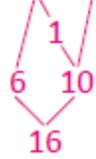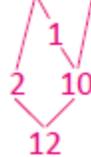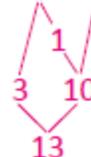
18

2. Michael has 3 balloons and his sister gives him 9. How many balloons does he have in total?

3 + 9

1

2   10

12
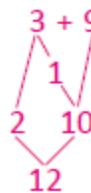
A:_____ balloons.

Don't forget your strip of 10 for the next class!

3. In a garden bloom 6 roses and 9 sunflowers. How many flowers are there in the garden?

6 + 9

1

5   10

15
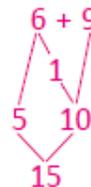
A: _____ flowers.

Relative's signature:_____

Achievement Indicator:

2.6 Add horizontally 9 to a one-digit number by decomposing and forming 10 in the calculation process (U + 9 = 1U) and whose total is greater than 10.

Objective: Set the strategy to add 9 to a number.

Key Points: The strategy to follow is the same; this time, the first addend is decomposed to form 10 with the second addend.

Class 2.2

$$5 + 9$$
$$\diagup^1\diagdown$$
$$4 \quad 10$$
$$\diagdown\diagup$$
$$14$$
Add 9 to
a number

$$9 + 3$$
$$\diagdown^1\diagup$$
$$10 \quad 2$$
$$\diagdown\diagup$$
$$12$$
Add 9 to a
number
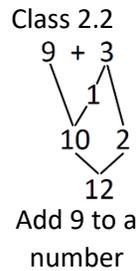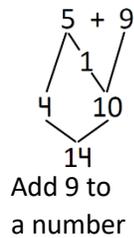
Notice this class includes cases previously developed in classes 2.2, 2.3, and 2.4, for example, 7 + 9, which can be seen as adding 9 to a number or as adding a number to 7, which was worked on in class 2.4. The idea now is to decompose the first addend, so you would expect them to decompose the 7 and not the 9, but it is valid and correct if they solve it as in class 2.4, decomposing 9.

Materials: The strip of 10 and caps.

Notes: _____

_____

_____

_____

Date: **Class:** 2.6

(A) How many ballons are there?

PS: 5 + 9

(S) I decompose 5 into 4 and 1.

1 plus 9 make10.

4 plus 10 make 14.

$$5 + 9$$
$$\diagup^1\diagdown$$
$$4 \quad 10$$
$$\diagdown\diagup$$
$$14$$

●●●● ◻◻◻◻◻◻◻◻◻◻

A: 14 Ballons
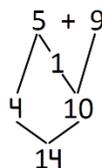
(R) Perform:

a. 3 + 9 = 12
$$\diagup^1\diagdown$$
$$2 \quad 10$$
$$\diagdown\diagup$$
$$12$$

b. 2 + 9 = 11
$$\diagup^1\diagdown$$
$$1 \quad 10$$
$$\diagdown\diagup$$
$$11$$
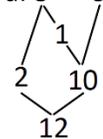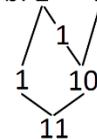
d. 4 + 9 = 13
$$\diagup^1\diagdown$$
$$3 \quad 10$$
$$\diagdown\diagup$$
$$13$$
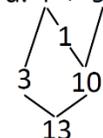
e. 6 + 9 = 15
$$\diagup^1\diagdown$$
$$5 \quad 10$$
$$\diagdown\diagup$$
$$15$$
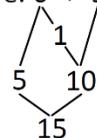
Homework: Page 132

Lesson 2

2.7 Let's add 8 to another number

Analyze

Martha has 3 cookies and Charles has 8.
How many cookies do they have in total?

PS: ___3 + 8___

Solution

Carmen

I decompose 3 into 1 and 2:

$$3 + 8$$

2
1

3   8

2 plus 8 make 10:

$$3 + 8$$

2
1   10

1 plus 10 make 11:

$$3 + 8$$
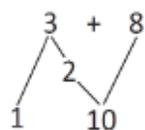
2
1   10
11

A:

___11___ Cookies.

Understanding

When adding 8 to a number, you can decompose the first addend as a number plus 2 to make
10, using the 8.

Solve

Perform:

a. $4 + 8 = 12$

2
2   10
12

b. $5 + 8 = 13$

2
3   10
13

c. $6 + 8 = 14$

2
4   10
14

5 + 8 = 13

13

6 + 8 = 14

14

Achievement Indicator:

2.7 Horizontally add 8 to a number with totals greater than 10 by decomposing and forming 10 in the calculation process (U + 8 = 1U).

Objective: Set the strategy to add 8 to a one-digit number

Key Points: The previous class contains problems studied in classes 2.2, 2.3, and 2.4; 9 + 8 can be seen as adding a number to 9 or adding 8 to a number.

This time, the first addend is decomposed into a number and 2, thus forming 10 with 2 and 8.

Students who finish the problems before concluding the 45-minute class could continue with the exercises from the section, "if you have finished." They can also solve homework problems.

Notes:

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

Date: **Class:** 2.7

(A) How many cookies do they have in total?

PS: 3 + 8

(S) I decompose 3 into 1 and 2.

2 plus 8 make 10.

1 plus 10 make 11.
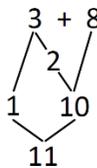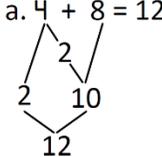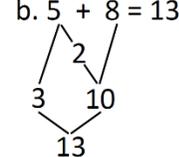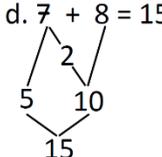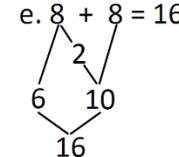
3 + 8
2
1   10
11

A: 11 cookies.

(R) Perfom:

a. 4 + 8 = 12
2
2   10
12

b. 5 + 8 = 13
2
3   10
13

d. 7 + 8 = 15
2
5   10
15

e. 8 + 8 = 16
2
6   10
16

Homework: Page 134

Lesson 2

2

12

1

11

Lesson 2

Solve

Perform:

a. $4 + 7 = 11$

```
   /\
  3
 1  10
   \/
   11
```

b. $6 + 7 = 13$

```
   /\
  3
 3  10
   \/
   13
```

c. $5 + 7 = 12$

```
   /\
  3
 2  10
   \/
   12
```

d. $7 + 7 = 14$

```
   /\
  3
 4  10
   \/
   14
```

e. $5 + 6 = 11$

```
   /\
  4
 1  10
   \/
   11
```

f. $6 + 6 = 12$

```
   /\
  4
 2  10
   \/
   12
```

g. $7 + 6 = 13$

```
   /\
  4
 3  10
   \/
   13
```

h. $9 + 6 = 15$

```
   /\
  4
 5  10
   \/
   15
```

Homework

1. Perform:

a. $6 + 6 = 12$

```
   /\
  4
 2  10
   \/
   12
```

b. $5 + 7 = 12$

```
   /\
  3
 2  10
   \/
   12
```

c. $8 + 6 = 14$

```
   /\
  4
 4  10
   \/
   14
```

d. $8 + 7 = 15$

```
   /\
  3
 5  10
   \/
   15
```

e. $7 + 6 = 13$

```
   /\
  4
 3  10
   \/
   13
```

f. $4 + 7 = 11$

```
   /\
  3
 1  10
   \/
   11
```

g. $9 + 6 = 15$

```
   /\
  4
 5  10
   \/
   15
```
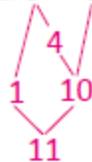
h. $9 + 7 = 16$

```
   /\
  3
 6  10
   \/
   16
```

2. Michael has 5 kites and his sister has 6. Between the two, how many kites do they have?

$5 + 6 = 11$

A: ____11____ kites.

```
  5 + 6
   /\
  4
 1  10
   \/
   11
```

Don't forget your strip of 10 for the next class!

Relative's signature: _____

Achievement Indicator:

2.8 Horizontally add 7 or 6 to a number by decomposing and forming 10 in the calculation process (U + 7 = 1U and U + 6 = 1U) and whose total is less than 20.

Objective: Set the strategy to add 7 or 6 to a number.

Key Points: This class presents two cases: adding 7 to a number and adding 6 to a number. Again, this class includes the cases developed in classes 2.2, 2.3, and 2.4. On the other hand, there are cases 7 + 6 and 6 + 7 that can be seen as adding 6 to a number or adding 7 to a number, respectively; however, it is expected that there will be no confusion for the students to identify that the main objective is to decompose one of the addends to obtain 10 with the other addend, which is the strategy followed to add two one-digit numbers.

If they look at the diagram and analyze it, it makes it easy to add and helps when adding or subtracting three numbers horizontally.
It is vital to understand the concept and process of decomposing and composing numbers up to 20 with this strategy; therefore, this content must be ensured in units two and four.
Monitor the use of the equal sign at the end of the addition and that the total is placed.

Notes: _____
_____
_____
_____
_____
_____
_____
_____

Date: **Class:** 2.8

(A) How many points does each have?

(S) Charles' points are calculated by adding:

PS: ___5 + 7___   5 + 7
                          3
                       2   10
                          12
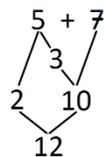
Anna's points are calculated by adding:

PS: ___5 + 6___   5 + 6
                          4
                       1   10
                          11
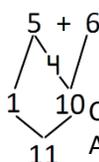
Charles has 12 points.
Anna has 11 points.

(R) Perfom:

a. 4 + 7 = 11   b. 6 + 7 = 13
     3   3
   1   10   3   10
     11   13
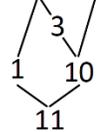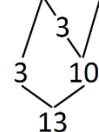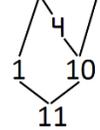
e. 5 + 6 = 11   f. 6 + 6 = 12
     4   4
   1   10   2   10
     11   12
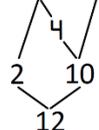
Homework: Page 136

247

2.9 Let's add up 3 numbers

Analyze

Joseph saved $7 to go to the fair. His mom gave him $3, and his dad $5. How many dollars does he have in total?

You can search for two numbers that add up to 10.

PS: ___7 + 3 + 5___

Solution

I use caps:

Mario
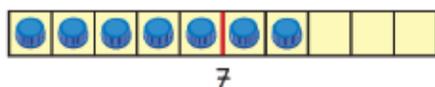
7   3   5   7 + 3 + 5

Because 7 plus 3 make 10:

7 + 3 + 5   ❶

10

Because 10 plus 5 make 15:

7 + 3 + 5

10

15

A: ___15___ dollars.

Understanding

To add 3 numbers:

① You can search for two number that add up to 10.

② Add 10 to the remaining number.

❷ **What if?**

The numbers that makeup 10 may not be together:

a. 4 + 2 + 8

10

14

b. 1 + 6 + 9

10

16

3 + 6 + 7 = 16

16

8 + 4 + 2 = 14

14

Achievement Indicator:

2.9 Add three one-digit numbers horizontally whose total is less than 20 and when two of them add up to 10 (U + U + U = 1U).

Objective: Adding 3 numbers, with the particularity that two of them always add up to 10.

Key Points: The class addresses the case when two consecutive addends add up to 10, as observed in ❶.
For a better understanding of the process, a visual and manipulative resource is used.
In ❷, the two remaining cases are presented: when there are two consecutive addends (different from those presented in the class) and when they are not.

In the next class, we will use addition cards 1, 2, 3, and 4, so it is asked to cut out the addition cards 2, 3, and 4 found on pages 189 to 201. The addition card one was already cut.

Notes:

Date: **Class:** 2.9

(A) How many dollars does Joseph have in total?

PS: $7 + 3 + 5$

(S)   7 plus 3 make 10.

10 plus 5 make 15.

$7 + 3 + 5$ with 10 and 15 grouping.

●●●●●●|●●●●● ●●●●●

A: 15 dollars.

(Q)   a. $4 + 2 + 8$ → 10 → 14   b. $1 + 6 + 9$ → 10 → 16

(R)   Perform:

a. $8 + 2 + 4$ → 10 → 14   e. $7 + 2 + 3$ → 10 → 12
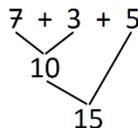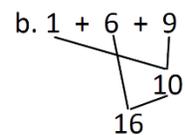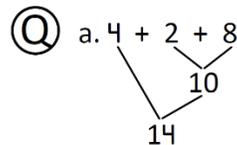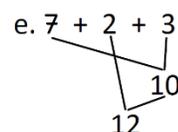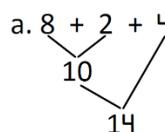
Cut-out the cards on pages 189, 191, and 201

Homework: Page 138

Achievement Indicator:

2.10 Solves problems corresponding to adding one-digit numbers and two-digit numbers and adding a number to 9, 8, 7, and 6.

Lesson 2

2.11 Let's find the missing number, part 1

Analyze

Adding $\quad 5 + \boxed{} = 14,$ which number should go in the box?

> Use the addition cards

Solution

I look for all the addition cards having a total equal to 14:

Joseph

| 3 + 11 | 4 + 10 | 6 + 8 | 8 + 6 | 7 + 7 | 5 + 9 | 13 + 1 |

❶ | 11 + 3 | 10 + 4 | 1 + 13 | 2 + 12 | 9 + 5 | 12 + 2 |

The only card that has 5 as the first addend is $\boxed{5 + 9}$.

Then, $5 + \boxed{9} = 14.$ The number that should go in the box is 9.

Understanding

Use the addition cards to find unknown numbers in the summation

Solve

What is the number that should go in each box?

a. $7 + \boxed{6} = 13$

b. $7 + \boxed{4} = 11$

c. $8 + \boxed{8} = 16$

d. $9 + \boxed{9} = 18$

e. $5 + \boxed{8} = 13$

f. $3 + \boxed{14} = 17$

Homework

What is the number that should go in each box?

a. $5 + \boxed{10} = 15$

b. $8 + \boxed{11} = 19$

c. $3 + \boxed{9} = 12$

d. $1 + \boxed{10} = 11$

e. $4 + \boxed{11} = 15$

f. $15 + \boxed{5} = 20$

> Don't forget your addition cards for the next class!

Relative's signature: _____

2.11 Determine the second addend in a sum, when the other addend and the total are known, using the sum cards, remembering the sums, or by trial and error.

Objective: The students are expected to practice the additions seen up to this point by playing a game of finding a missing number that meets a particular sum.

Key Points: The class presents the solution using the addition cards; The main idea is for students to search among all their addition cards; for those with a result of 14 (the total is on the back of each card).

Subsequently, the card whose first addition is 5 is searched; when determining which card it is, observe the second addend and conclude.

This way of solving the problem allows introducing a problem-solving strategy: make a list of all possible cases and then determine which ones meet all the remaining conditions. Thus, all the sums having 14 as a total could be listed, and then choose the one that has 5 as the first addend.

Another way to solve it is to find all those sums whose first addend is 5 and then identify which of them has a total of 14.

Note that this strategy becomes complicated when the addends are greater than 20 since the larger the numbers, the more possible cases there are.

❶ In this section, an order of the cards is presented, but the configuration that remains on the board will depend on the interaction and solution that the students give.

Materials: Addition cards 1, 2, 3, y 4.

Date: **Class:** 2.11

Ⓐ   Adding $5 + \boxed{} = 14$, Which number should go in the box?

Ⓡ   a. $7 + \boxed{6} = 13$ b. $7 + \boxed{4} = 11$

Ⓢ   Using the addition cards:

| 3 + 11 | 4 + 10 | 6 + 8 | 8 + 6 | 7 + 7 | (5 + 9) | 13 + 1 |

| 11 + 3 | 10 + 4 | 1 + 13 | 2 + 12 | 9 + 5 | 12 + 2 |

The number that should go in the box is 9.

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2.12 Let's find the missing number, part 2

Analyze

In the addition [ ] + 2 = 18, which number should go in the box?

Solution

All the cards that have a total equal to 18 are:

Julia

| 13 + 5 | 1 + 17 | 6 + 12 | 10 + 8 | 3 + 15 | 4 + 14 |

| 5 + 13 | 11 + 7 | 9 + 9 | 14 + 4 | 17 + 1 |

| 16 + 2 | 15 + 3 | 7 + 11 | 2 + 16 | 8 + 10 | 12 + 6 |

The only card that has 2 in its second addend is [16 + 2].

Then, [16] + 2 = 18.   The number that should go in the box is 16.

Understanding

While doing an addition, the value of one of the addends might be unknown.

Solve

What is the number that should go in each box?

a. [2] + 10 = 12   b. [9] + 5 = 14   c. [6] + 13 = 19

d. [7] + 8 = 15   e. [7] + 9 = 16   f. [6] + 11 = 17

Homework

What is the number that should go in each box?

a. [7] + 8 = 15   b. [8] + 11 = 19   c. [14] + 6 = 20

d. [8] + 4 = 12   e. [9] + 7 = 16   f. [5] + 12 = 17

Don't forget your 2, 3 and 4 addition cards for the next class!

Relative's signature: _____

Achievement Indicator:

2.12 Determine the first addend in the sum, when the other addend and the total are known, using the sum cards, remembering the sums, or by trial and error.

Key Points: The class is similar to the previous one, with the difference that now the first addend is unknown; however, the activity dynamics are the same.

Note that the number of addition cards meeting the condition of totaling 18 is greater than those used in the previous class, and the larger the total, the more sums there will be.

Materials: Addition cards 1, 2, 3, and 4.

Notes:

Date: **Class: 2.12**

(A) Adding, $\boxed{}$ + 2 = 18, Which number should go in the box?

(S) Using the addition cards:

| 13 + 5 | 1 + 17 | 6 + 12 | 10 + 8 | 3 + 15 | 4 + 14 |

| 5 + 13 | 11 + 7 | 9 + 9 | 14 + 4 | 17 + 1 |

| (16 + 2) | 15 + 3 | 7 + 11 | 2 + 16 | 8 + 10 | 12 + 6 |

The number that should go in the box is 16.

(R) a. $\boxed{2}$ + 10 = 12   b. $\boxed{9}$ + 5 = 14

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2.13 Let's find patterns using addition cards

Analyze

Make the additions for each column. What do you observe?

1 + 3								
1 + 5	2 + 4							
1 + 7	2 + 6	3 + 5						
1 + 9	2 + 8	3 + 7	4 + 6					
1 + 11	2 + 10	3 + 9	4 + 8	5 + 7				
1 + 13	2 + 12	3 + 11	4 + 10	5 + 9	6 + 8			
1 + 15	2 + 14	3 + 13	4 + 12	5 + 11	6 + 10	7 + 9		
1 + 17	2 + 16	3 + 15	4 + 14	5 + 13	6 + 12	7 + 11	8 + 10	
1 + 19	2 + 18	3 + 17	4 + 16	5 + 15	6 + 14	7 + 13	8 + 12	9 + 11

Solution

The results per column are:

Ana

4								
6	6							
8	8	8						
10	10	10	10					
12	12	12	12	12				
14	14	14	14	14	14			
16	16	16	16	16	16	16		
18	18	18	18	18	18	18	18	
20	20	20	20	20	20	20	20	

I notice that the totals go from 2 to 2.

Understanding

Patterns can be formed with the addition cards.

Example. Totals per row are always the same.

Example. The totals are increasing from 2 to 2.

Example. The totals are increasing from 2 to 2.

Example. The totals are increasing from 2 to 2.

2.13 Find and explain patterns in the additions of the type 1U + U = 1U and U + 1U = 1U, using the addition cards located in specific positions.

Objective: This class is intended for students to practice addition and identify patterns, both in the addends and totals.

Key Points In unit 3, a similar idea was worked with the addition cards; on this opportunity, the cards are placed in a similar position to familiarize the students with these types of classes.
The cards are positioned on the table in the position shown in Analyze section; The students perform the additions and then have to ask themselves, what is observed with the sums per column?

This is a good method to analyze number patterns, a subject to be seen in later grades.

In the Solve section, the questions are directed to the additions done in class; therefore, they should use the data from the Solve section.

An example solution is presented for each problem, but students can provide more information as they observe. For example, in the solution of the problem in the Analyze section, it could also say that the addition of the first card of a column increases by 2 concerning the addition of the first card in the previous column.

In the next class, we will use the game Sungo, found on pages 203-207 of the Textbook, so have the students cut it out.

Notes: _____
_____
_____
_____

Date: **Class:** 2.13

(A) Performs the additions for each column. What do you observe?

(S)
$1+3$ = 4

| $1+5$ = 6 | $2+4$ = 6 |

| $1+7$ = 8 | $2+6$ = 8 | $3+5$ = 8 |

| $1+9$ = 10 | $2+8$ = 10 | $3+7$ = 10 | $4+6$ = 10 |

| $1+11$ = 12 | $2+10$ = 12 | $3+9$ = 12 | $4+8$ = 12 | $5+7$ = 12 |

| $1+13$ = 14 | $2+12$ = 14 | $3+11$ = 14 | $4+10$ = 14 | $5+9$ = 14 | $6+8$ = 14 |

| $1+15$ = 16 | $2+14$ = 16 | $3+13$ = 16 | $4+12$ = 16 | $5+11$ = 16 | $6+10$ = 16 |

| $1+17$ = 18 | $2+16$ = 18 | $3+15$ = 18 | $4+14$ = 18 | $5+13$ = 18 | $6+12$ = 18 | Totals range from 2 to 2.

| $1+19$ = 20 | $2+18$ = 20 | $3+17$ = 20 | $4+16$ = 20 | $5+15$ = 20 | $6+14$ = 20 |

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Lesson 2

❶

Achievement Indicator:

2.14 Perform mental calculations of additions whose totals are less than 20 through games with the addition cards and other games.

Objective: In this class, students are expected to practice addition and also identify patterns, both in the addends and in the totals.

Key Points: This class seeks to strengthen mental math for addition using the addition cards. The game dynamics presented in the Analyze section require forming groups of 2 or 3 people (not recommended for more than three players). A single set of addition cards is used, from one of the members, placing them on the desk with the sums facing up. One of the members takes a sum and shows it to the rest of the group; Whoever guesses the result will win a point. Regarding this last detail, each member of the group must bring their earned points. They can use a piece of paper or write in the free space in the Textbook.

For homework, a game is proposed whose rules are detailed in ❶. As the game requires at least seven people, it needs the participation of family and friends.

Materials: 6 Sungo cards, 24 purple Sungo cards (pages 203 to 207 of the Textbook) and some beans or corn grains.

Notes:

_____

_____

_____

_____

_____

_____

Date: **Class:** 2.14

Ⓡ

⓪ Form pairs or trios.

① Place the cards on the table o r desk

② One player from the group takes a card and another says the result.

③ If the answer is correct, it earns points

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Achievement Indicator:

2.15 Solves problems corresponding to the calculation of additions in the form 1U + and U + 1U, whose totals are less than 20.

8   5   11

3   14   3

Example. Totals are decreasing by 5.

Example. The addends are 0, 5, or 10.

7   9   16

9   1   7

Unit 5

Appendix

Preparing a class

Provide a quarterly record of the averages obtained in each of the units; it is necessary to have this information for the following reasons:

- Show progress during the school year.
- Identify the units with the highest degree of difficulty for students.
- Design a reinforcement strategy for those units with greater difficulty.
- Identify the number of students with an average of less than 6 and how it varies in each unit.
- Present the results obtained in the pedagogical reflections.
- Carry out an analysis of the results at the end of the year to establish improvement strategies to be executed the following year.

Planning

A log sheet is prepared to carry out the annual planning in the subject of Mathematics, in it will be placed the classes to be taught during each school day.

School year months

	January		February		March	
1			X	X	X	X
2			X	X		
3			P. U1	U2 1.1		
4	X	X	1.2	1.3		
5	X	X				

The X's represent the days corresponding to the weekend.

Days of the month

For example, unit 1 is tested on February 3.

In the second hour of Mathematics will be taught class 1.1 of unit 2; the unit number is only placed in the first class.

To complete the planning, it is suggested:

- Perform planning by quarter or unit.
- Use a pencil to be able to erase in case an amendment is made.
- Take into consideration the activities of the institution.
- If you do not have classes, mark the box with an X.
- Enter the days for the unit, quarter, and final tests.
- In the event the Mathematics class is not taught, write why it did not occur in the corresponding box.

First quarter results Analysis					
	Test U__	Test U__	Test U__	Test U__	Quarterly test
Average obtained					
Nº. of students with an average of lower than 6					
Nº. of students with an average between 6 and 8					
Nº. of students with an average higher than 8					
Second quarter results analysis					
	Test U__	Test U__	Test U__	Test U__	Quarterly test
Average obtained					
Nº. of students with an average of lower than 6					
Nº. of students with an average between 6 and 8					
Nº. of students with an average higher than 8					
Third quarter results analysis					
	Test U__	Test U__	Test U__	Test U__	Quarterly test
Average obtained					
Nº. of students with an average of lower than 6					
Nº. of students with an average between 6 and 8					
Nº. of students with an average higher than 8					

	January		February		March		April		May		June	
Annual Planning: 2020												
1			X	X	X	X						
2			X	X					X	X		
3									X	X		
4	X	X					X	X				
5	X	X					X	X				
6											X	X
7					X	X					X	X
8			X	X	X	X						
9			X	X					X	X		
10									X	X		
11	X						X	X				
12	X						X	X				
13											X	X
14					X	X					X	X
15			X	X	X	X						
16			X	X					X	X		
17									X	X		
18	X	X					X	X				
19	X	X					X	X				
20	U1 1.1	1.2									X	X
21	1.3				X	X					X	X
22	1.4		X	X	X	X						
23			X	X					X	X		
24									X	X		
25	X	X					X	X				
26	X	X					X	X				
27											X	X
28					X	X					X	X
29			X	X	X	X						
30									X	X		
31									X	X		

305