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Resource Bank

Alternative Teaching Resources in Math



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Teacher's Notes

Grade: 2
Topic: Addition within 100
Learning outcome: Adds numbers within 100, both without and with crossing a ten
The worksheets were designed by: LSpecPA cooperation partner, Rezekne Primary School – Development Centre

Level 1	Instruction for a student	Expected answer	Assessment / observation focus	Materials / Resources	Methodological notes
	1. 1.Read each addition calculation. 2.Start with the first number. 3.Move forwards along the number line by the amount shown by the second number. 4.Write the sum. **2.** 1. Calculate the first addition problem. 2. Find the correct answer on the right. 3. Draw a line to match them. 4. Check that each calculation has one answer. **3.** 1.Read the equation. 2.Remember: to find the missing addend, subtract the known addend from the sum.	1.21+7=28; 72+3=75 34+5=39; 15+4=19 42+6=48; 26+2=28 53+4=57; 47+1=48 61+8=69; 58+0=58 2.32+4 → 36 41+3 → 44 24+5 → 29 38+7 → 45 3.20+6=26 70+8=78 40+6=46 50+4=54 **Calculation:** 24 + 5 = 29 **Answer:** John and Inese now have 29	1.Whether the pupil counts forwards from the larger/given number; whether the sum is written correctly; whether the pupil understands that adding 0 does not change the number. 2.Whether the pupil calculates first and only then matches the answers; whether similar answers are not confused; whether the pupil can check each matched pair. 3.Whether the pupil	A number strip up to 100, a pencil, a ruler/reading window and, if needed, counting sticks. A worksheet, a pencil and a number strip; coloured pencils may be used to mark matching pairs. A reminder card showing "sum − known addend", a number strip and manipulatives. A reminder card showing the steps for solving a word problem, a pencil, and the option to represent 24 + 5	**Support:** Allow pupils to use a number strip, their fingers or counting materials; reduce the number of calculations; highlight the second addend. **Challenge:** Ask the pupil to explain one calculation orally. Give pupils with developmental disabilities one task at a time or cover the other tasks. Use a clear model and keep the sequence of steps consistent. Provide only two answer options at first, then gradually increase the number of options. **Support:** Replace the blank space with a box and identify the sum together with the pupil. **Challenge:** The pupil writes one more similar equation independently. **Support:** The teacher reads the

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	3.Write the missing number. 4.Check your answer by adding the numbers again. **4.** 1.Read the problem slowly. 2.Underline: there were 24 pencils, and 5 more were added. 3.Choose the mathematical operation. 4.Calculate mentally. 5.Write the answer in a full sentence.	pencils altogether.	understands the meaning of the equation; whether subtraction is used to check the answer; whether the missing number is written correctly. 4.Whether the pupil identifies the given numbers; whether addition is chosen for the word "more"; whether the answer includes the correct unit/word "pencils".	using a diagram or dots.	text aloud and provides the sentence starter: "Altogether, there are now …". **Self-regulation:** Allow a short pause before writing and use check marks for each completed step.

Level 2	Instruction for a student	Expected answer	Assessment / observation focus	Materials / Resources	Methodological notes
	1.Calculate the sums. Add the ones to the ones and the tens to the tens. Be careful – add step by step. Write the answers. 2.Complete the addition in columns. Write the numbers in the correct	1. 27+8=35, 19+4=23, 35+9=44, 68+5=73, 46+7=53, 37+8=45, 58+6=64,	**The teacher monitors and pays attention to:** 1.Whether the pupil correctly adds a one-digit number to a two-digit number when	Worksheets, individual learning materials – pencils, pens, number strips, additional reminder cards (if needed); electronic calculation tools.	**Depending on the pupils' level of knowledge and skills, the teacher can:** 1.**Support:** Use a number line or counting materials. **Challenge:** Provide additional calculations that involve crossing a ten.

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	places and calculate the sum. 3.Calculate the sums and write the correct comparison sign (<, > or =). 4.Read the problem. Identify what is given and what needs to be calculated. Write the mathematical operation and the answer. 5.Read the problem. Calculate how many tulips were planted altogether over the two days.Write three addition calculations with a sum of 80. *If necessary, use electronic calculation tools to check your answers.*	54+9=63 2. 23+14=37, 52+26=78, 35+22=57, 33+15=48, 41+17=58, 24+34=58 3. 27+6=33 →33=33; 45+9=54 → 54 > 53; 52+7=59 → 59 = 59 4.36+18=54. **Answer:** There are now 54 books in the library. 42+16=58. **Answer:** The gardener planted 58 tulips altogether over the two days. 4. Piemēri: 40+40=80; 50+30=80; 26+54=80.	crossing into the next ten. 2.Whether the pupil sets out the calculation correctly, with ones under ones and tens under tens. 3.Whether the pupil calculates the sum and can compare the results. 4.Whether the pupil understands the word problem and chooses the correct mathematical operation. Whether the pupil recognises the word “altogether” and chooses addition. 5.Whether the pupil understands the concept of a sum and can create correct addition calculations.		2.**Support:** Use colour to highlight the tens and ones. **Challenge:** Include calculations that involve crossing into the next ten. 3.**Support:** Use a comparison diagram. **Challenge:** Compare larger numbers. 4.**Support:** Underline or highlight the numbers in the word problem. **Challenge:** Ask the pupil to explain the solution orally. 5.**Support:** Use pictures or a diagram. **Challenge:** Ask the pupil to create a similar problem independently. 6. **Support:** Provide one calculation as an example. **Challenge:** Ask the pupil to use only two-digit numbers. .

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Level 3	Instruction for a student	Expected answer	Assessment / observation focus	Materials / Resources	Methodological notes
	1.Calculate mentally – use different addition strategies. 2.Complete the addition calculations. Check whether there is a mistake in the task. If there is, correct it and write the correct answer. 3.Find the missing addend. Use the reminder provided to help you calculate the missing addend. 4.Read the word problem carefully. Follow the steps for solving a word problem. Write the mathematical operation and the answer. Write the answer as a full sentence. 5.Be careful! Use the reminder for finding the missing addend so that you can calculate accurately and write the correct number. In the last calculation, if you wish, think of and write several different pairs of addends whose sum is 100.	**1.** 48+27=75; 57+16=73; 36+29=65; 24+38=62; 65+17=82; 72+19=91 **2.** 35+18=53 (No); 48+24=72 (No) **3.** 80−45=35; 100−23=77; 60−12=48 4. 38+27=65 pupils; 46+35=81 of apples **5.** 34+34=68; 46+29=75; 18+39=57; example, 50+50=100; 60+40=100;30+70=100.	**The teacher monitors whether the pupil:** • correctly adds two-digit numbers within 100; • uses subtraction to find the missing addend; • identifies and corrects mistakes; • solves word problems; • explains the reasoning behind their answer.	Worksheets, pencils, number strips (if needed), hundred squares, electronic calculation tools.	

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Name: Grade: Date:

Addition Adventures to 100

Level 1	What do I need to do?	What can I use to solve this task?
	Ready to practise addition? 1.Complete each task carefully. 2.Add the **ones to the ones** and the **tens to the tens**. 3.When you finish, **check your answers**.	A number strip up to 100, counting sticks or other counting materials, a missing-addend reminder card, a word problem reminder card, a ruler or reading window, a pencil, coloured pencils, drawings or dots.

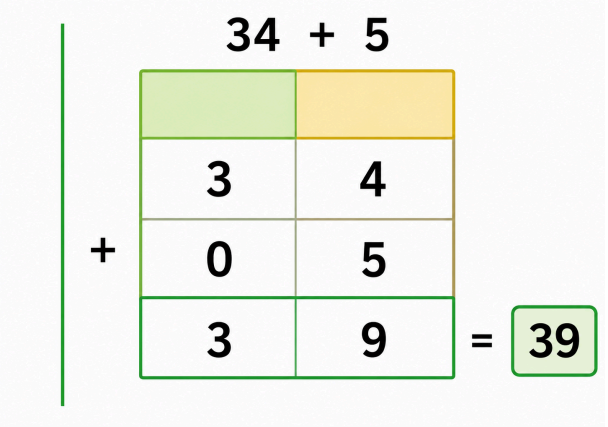
1. Calculate!

REMEMBER!

ADDITION WITHIN 100
How to add:

1. Write the tens and ones separately.
2. Add the ones.
3. Add the tens.
4. Combine the results.

🟩 **Green – Tens**
🟨 **Yellow – Ones**



21 + 7 = _____ `

34 + 5 = _____

42 + 6 = _____

53 + 4 = _____

61 + 8 = _____

72 + 3 = _____

15 + 4 = _____

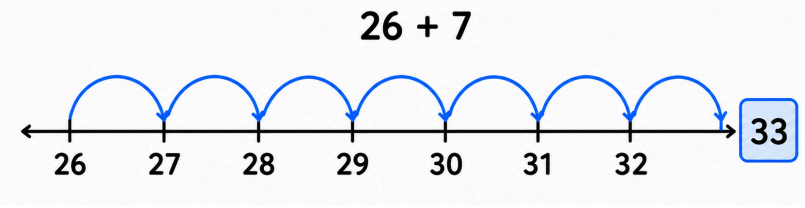
26 + 2 = _____

47 + 1 = _____

58 + 0 = _____

REMEMBER! WHEN ADDING, MOVE FORWARDS ALONG THE NUMBER LINE!

Example - let's count forwards!

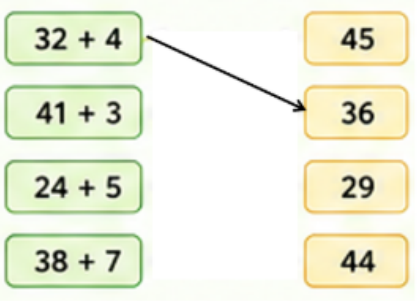


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2. Match each calculation to the correct answer!

32 + 4	45
41 + 3	36
24 + 5	29
38 + 7	44



3. Calculate mentally! Write the missing number!

REMEMBER! TO FIND THE MISSING ADDEND, SUBTRACT THE KNOWN ADDEND FROM THE SUM.

20 + ____ = 25 → 25 – 20 = 5

20 + ____ = 26

70 + ____ = 78

40 + ____ = 46

50 + ____ = 54

4. Read! Solve the word problem!

REMEMBER!

1. **Read** the problem carefully.
2. Identify what **is given**.
3. Identify what **needs to be calculated**.
4. Calculate **mentally**.
5. Write the **answer**.

John and Inese **have 24 pencils altogether**. The teacher **gave** them **5 more** pencils. **How many pencils altogether** do Jānis and Inese have now?

Answer: _____

Self - check	Teacher's comments
☐ I finished the task.	
☐ I checked my work.	

How did I do (circle):







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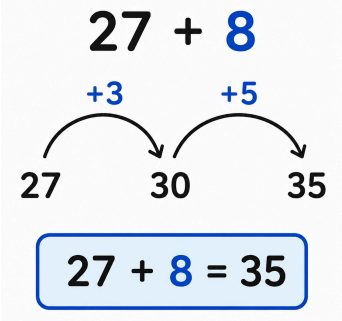
Name: Grade: Date:

Addition Adventures to 100

Level 2	What do I need to do?	What can I use to solve this task?
	Ready for an addition challenge? 1. Complete each task carefully. 2. Use examples and reminders to help you. 3. Add the ones and tens correctly, compare your answers, and solve the word problems. 4. When you have finished, **check your work**.	A number strip up to 100, counting materials, an addition reminder card, a place value reminder card, a word problem reminder card, a ruler or reading window, electronic calculation tools if needed.

1. Calculate!

Example:



27 + 8 = _____ 19 + 4 = _____

35 + 9 = _____ 68 + 5 = _____

46 + 7 = _____ 37 + 8 = _____

58 + 6 = _____ 54 + 9 = _____

2. Calculate! Complete the calculations in columns!

ADDING TWO-DIGIT NUMBERS

23 + 14 = ?

	2	3
+	1	4
	3	7

Split the numbers into tens and ones!
2 tens + 1 ten = 3 tens (30)
3 ones + 4 ones = 7 ones
30 + 7 = 37
So: 23 + 14 = 37
🟩 **Green – Tens**
🟨 **Yellow – Ones**

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$23 + 14 =$ _____ $52 + 26 =$ _____

$35 + 22 =$ _____ $33 + 15 =$ _____

$41 + 17 =$ _____ $24 + 34 =$ _____

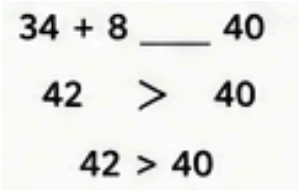
Complete the written calculations here.

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3. Compare! Write the correct sign ⚪ (<, > or =)!
REMEMBER – CALCULATE THE SUM! COMPARE!

Example



a) 27 + 6 ⚪ 33

_____⚪_____

b) 45 + 9 ⚪ 53

_____⚪_____

c) 52 + 7 ⚪ 59

_____⚪_____

4. Read! Solve the word problem! Write the **calculation** and the **answer**!

REMEMBER THE STEPS FOR SOLVING A WORD PROBLEM!
1. **Read**.
2. What is **given**?
3. What **needs to be calculated**?
4. Write the **calculation**.
5. Write the **answer**.

There were **36 books** in the library. **18 more books** were brought in.

How many books are there **now**?

1. _____

Answer: _____

The gardener **planted 42 tulips** in the garden on **Saturday** and **16 more tulips** on **Sunday**.

How many tulips did the gardener **plant altogether** over the two days?

1. _____

Answer: _____

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5. Think of your own examples! **Write 3 addition calculations** with a **sum** of **80**.

THINK OF YOUR OWN!

For example, to make a total of 60:

30 + 30 = 60 | 25 + 35 = 60 | 40 + 20 = 60



_____

_____

_____

Self - check	Teacher's comments
☐ I finished the task.	
☐ I checked my work.	

How did I do (circle):







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Name: Grade: Date:

Addition Adventures to 100

Level 3	What do I need to do?	What can I use to solve this task?
	Ready for an addition challenge? 1. Complete each task carefully. 2. Choose a mental addition strategy that helps you, find and correct mistakes, work out the missing addends, and solve the word problems. 3. When you have finished, **check your answers**.	A number strip up to 100, a hundred square, counting materials, an addition strategies reminder card, a missing-addend reminder card, a word problem reminder card, a pencil, a ruler or reading window, electronic calculation tools if needed.

1.Calculate mentally**!**

MENTAL ADDITION STRATEGIES

Partitioning	Bridging to the next ten	Tens and ones
39 + 18	47 + 26	58 + 15
18 = 10 + 8	+3 +23	50 + 10 = 60
39 + 10 = 49	47 50 73	8 + 5 = 13
49 + 8 = 57		60 + 13 = 73
So: 57	**So: 73**	**So: 73**

48 + 27 = _____ 24 + 38 = _____

57 + 16 = _____ 65 + 17 = _____

36 + 29 = _____ 72 + 19 = _____

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2. Find **the mistake! Correct** it! Write the **correct** answer!

Anna worked out:

1) 35 + 18 = 43

Did Anna calculate correctly?

□ Yes

□ No

Correct answer: _____

2) 48 + 24 = 62

Is the calculation correct?

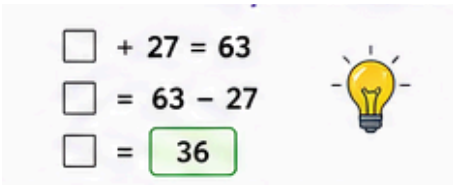
□ Yes

□ No

Correct answer: _____

3. Find the **missing** addend**!**

REMEMBER!



a) 45 + ⚪ = 80

⚪ = _____

⚪ = _____

b) 23 + ⚪ = 100

⚪ = _____

⚪ = _____

c) ⚪ + 12 = 60

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⚪ = _____

⚪ = _____

4. Read! Solve the word problem!

1. **38 boys** and **27 girls** took part in Sports Day at school.

How many pupils took part in Sports Day **altogether**?

1) _____

Answer: _____

2. **In the morning**, there were **46 kg of apples** in the shop. **35 kg more apples** were delivered.

What can you calculate?

1) _____

_____

Answer: _____

REMEMBER THE STEPS FOR SOLVING A WORD PROBLEM!

1. Read	2. Read
What **needs to be calculated** Write the **calculation** Write the **answer**	What **needs to be calculated** Write the **question** Write the **calculation** Write the **answer**

5. Solve! Write the missing addends in the ⚪!

34 + ⚪ = 68

⚪ + 29 = 75

18 + ⚪ = 57

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⚪ + ⚪ = **100**

Self - check	Teacher's comments
☐ I finished the task.	
☐ I checked my work.	

How did I do (circle):







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Teacher's Notes

Grade: 2
Topic: Subtraction within 100
Learning outcome: Subtracts numbers within 100, both without and with crossing a ten
The worksheets were designed by: LSpecPA cooperation partner, Rezekne Primary School – Development Centre

Level 1	Instruction for a student	Expected answer	Assessment / observation focus	Materials / Resources	Methodological notes
	1. Calculate the differences, remembering that the tens stay the same. Be careful. 2. Complete the subtraction. Use the reminder and remember to subtract ones from ones. Match each subtraction result (difference) to the correct answer. 3. Write the missing number being subtracted. To find it, subtract the difference from the given starting number. 4. Read the word problem carefully. Solve it by following the steps for solving a word problem. 5. Work out the calculations mentally and mark the correct answer. Pay	1. 25−3=22, 48−6=42, 67−5=62, 32−2=30, 71−1=70, 86−6=80, 93−3=90, 44−4=40. 2. 36-6=30/ 30=30;42-2=40/40 =40;57-7=50/50=5 0;64-4=60/60=60 3. 28−3=25, 47−4=43, 65−5=60, 91−1=90, 73−3=70.	**The teacher assesses whether the pupil:** • Can subtract a one-digit number from a two-digit number without crossing a ten. • Recognises the relationship between a mathematical operation and its result. • Can find the missing number being subtracted. • Understands the information in a word problem and chooses the correct	Worksheets, pencils, erasers, number lines (if needed), visual support with subtraction examples, electronic calculation tools (as needed).	**Before starting the work, revise the subtraction strategy:** "The tens stay the same; only the ones change." • Encourage pupils to calculate mentally first and only then write the answer. • When solving a word problem, use a visual sequence: "Read – What is given? – What do I need to find? – Mathematical operation – Answer." • Offer pupils with learning difficulties a number line or counting materials. • For pupils with ADHD, divide the tasks into smaller parts and use visual markers to show what has been completed. • For pupils with intellectual disabilities, reduce the number of calculations to be completed at

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	attention to the reminder provided. *Use electronic calculation tools to check your answers.*	4. 24−5=19. **Answer:** Martin had 19 stickers left. 5.63−3=60, 84−4=80.	mathematical operation. • Can carry out simple calculations mentally. *If necessary, the teacher explains, provides individual support and suggests strategies to use.*		one time and use concrete visual aids. • Encourage pupils to check their own work by comparing the results with the rule "the tens stay the same".

Level 2	Instruction for a student	Expected answer	Assessment / observation focus	Materials / Resources	Methodological notes
	1. Calculate mentally. Find the differences and write the answers. Use the calculation strategies you have learnt. 2. Calculate the difference. Complete the subtraction in writing, setting out the calculation correctly in columns. 3. Compare the expressions. Calculate the value of each expression and write the correct comparison sign (<, > or =). 4. Solve the word problems. Read each problem	1. 32−5=27; 41−4=37; 53−8=45; 72−6=66; 64−7=57; 81−3=78; 45−9=36; 70−5=65. 2. 43−15=28; 52−24=28; 61−13=48; 74−25=49; 85−16=69; 92−34=58.	The teacher monitors the pupil's work and progress while completing the tasks to assess whether the pupil: • Can subtract one-digit and two-digit numbers within 100. • Can carry out written subtraction with crossing a ten. • Understands how to use comparison signs. • Can solve word	Worksheets, pencils/pens, erasers, rulers, number lines up to 100 (if needed), examples of the subtraction algorithm, reminder cards, electronic calculation tools for self-checking.	Before completing the task, revise the subtraction algorithm for crossing a ten. Encourage pupils to calculate mentally by using their knowledge of number bonds. Remind pupils how to set out calculations correctly in columns, especially when regrouping is needed. When solving word problems, use the sequence: *Read – What is given? – What do I need to find? – Mathematical operation – Answer.* Encourage pupils to explain how they worked out their answers. Provide visual support for pupils

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	carefully, identify the given information, write the mathematical operation and the answer. 5. Find the mistake. Check the given calculation, decide whether it is correct and, if necessary, write the correct answer. *If necessary, use electronic calculation tools.*	3. 71−8 = 63; 44−6 < 39; 83−5 = 78. 4. 58 − 16 = 42. **Answer:** 42 apples were left. 73 − 21 = 52. **Answer:** 52 books were left in the library. 5. **No. The correct answer is:** 64 − 8 = 56.	problems by choosing the correct mathematical operation. ● Can identify and correct errors in calculations. ● Develops mathematical thinking and self-checking skills.		with learning difficulties (a number line and a subtraction algorithm reminder card). For pupils with ADHD, divide the work into smaller parts, use visual markers to show completed tasks and include short movement breaks. For pupils with intellectual disabilities, offer fewer tasks and use concrete visual materials. Encourage pupils to check their own work by using estimation or the inverse operation.

Level 3	Instruction for a student	Expected answer	Assessment / observation focus	Materials / Resources	Methodological notes
	1. Calculate the subtraction problems mentally. Use the reminder cards and different calculation strategies. 2. Find the missing starting number by using the relationship between subtraction and addition. 3. Read the word problems, identify the given information and what	1. 72−28=44, 91−36=55, 64−27=37, 75−38=37, 88−49=39, 97−58=39. 2. ⚪−17=45 → 45+17=62, ⚪=62. ⚪−27=53 →	**The teacher assesses whether the pupil:** ● Can subtract two-digit numbers within 100 (using written methods, mental calculation and different strategies). ● Understands the relationship	Worksheets, pencils/pens, erasers, a hundred square, number columns (if needed), a visual reminder of the method for finding the missing starting number, reminder cards.	**Before completing the tasks, revise subtraction strategies and how to check subtraction using the inverse operation – addition.** Encourage pupils to explain how they worked out their answers, either orally or in writing. For word problems, use a structured sequence: “What is given? What needs to be

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	needs to be calculated. Write a question, complete the calculation and write the answer. 4. Think of and write two different subtraction calculations with a difference of 50. Use whole tens only in both calculations.	53+27=80, ⚪=80. 3. Sports Day: 86 − 18 = 68. **Answer:** After the first relay race, 68 pupils remained at the Sports Day. At the shop: 95 − 47 = 48. **Answer:** 48 ice creams were left in the shop. 4. Possible answers: 80 − 30 = 50; 90 − 40 = 50. (Any two calculations using whole tens are acceptable.)	between subtraction and addition when finding the missing starting number. ● Understands the information in a word problem and can formulate a question. ● Chooses the correct mathematical operation for the situation described. ● Can create their own mathematical calculations according to a given condition.		calculated? Which mathematical operation should be used? What is the answer?” Offer visual support for pupils with learning difficulties (a number line and calculation diagrams). For pupils with ADHD, divide the work into smaller parts and provide opportunities to mark completed tasks. For pupils with intellectual disabilities, provide additional examples and opportunities to use concrete materials (counting sticks and number cards). Encourage pupils to check their own work by using addition as the inverse operation.

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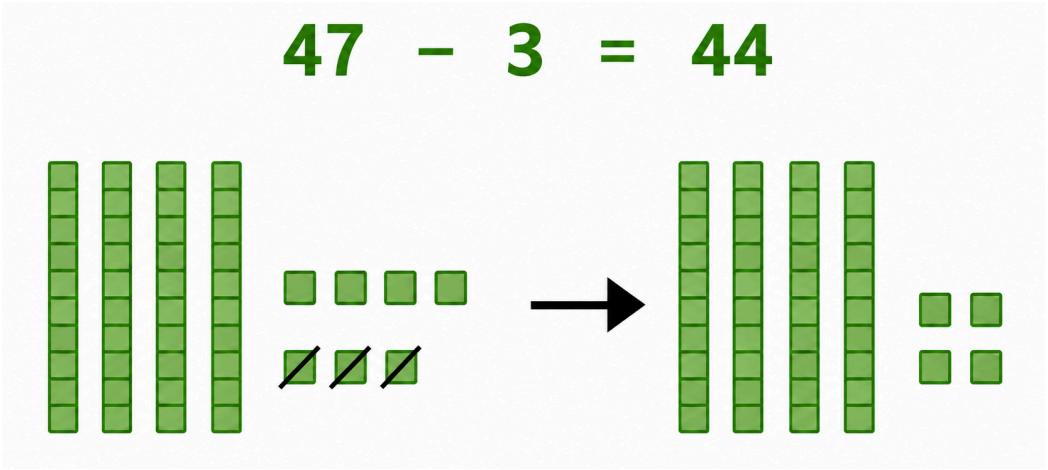
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Name: Grade: Date:

Subtraction Adventures to 100

Level 1	What do I need to do?	What can I use to solve this task?
	Ready to practise subtraction? 1.Complete each task carefully. 2.Subtract the **ones from the ones** and the **tens from the tens**. 3.Use the examples and reminders to help you. 4.When you finish, **check your answers**.	A hundred square, number columns (if needed), reminders

1. Calculate **the difference!**



How to work it out?
First subtract the ones.
Example: 47 − 3 = 44 **(4 tens 7 ones − 3 ones = 44.)**

REMEMBER! THE TENS STAY THE SAME!

25 − 3 = _____ 71 − 1 = _____

48 − 6 = _____ 86 − 6 = _____

67 − 5 = _____ 93 − 3 = _____

32 − 2 = _____ 44 − 4 = _____

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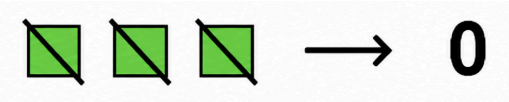
2. Match each calculation to the correct difference!

REMEMBER!

First **calculate mentally**, then **match**.

Subtract the **ones from** the **ones.**

63 - 3 = 60



3 ones − 3 ones = 0

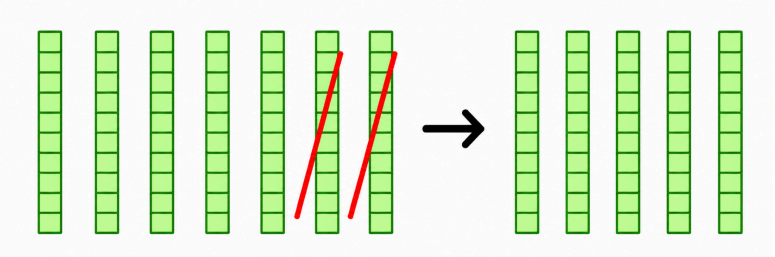
36 – 6	50
42 – 2	30
57 – 7	40
64 – 4	60

3. Write the **subtrahend** in the ⚪!

We subtract tens from tens.

Example: 74 − 20 = 54

7 tens − 2 tens = 5 tens



28 − ⚪ = 25

47 − ⚪ = 43

65 − ⚪ = 60

91 − ⚪ = 90

73 − ⚪ = 70

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4. Read! Solve the word problem!

REMEMBER THE STEPS FOR SOLVING A WORD PROBLEM!

1. **Read**.
2. What information is **given**.
3. What do you **need to calculate**?
4. Write the **mathematical operation**.
5. Write the **answer**.

Martin had **24 stickers**. He **gave 5 stickers** to his friend.

How many stickers did Martin **have left**?

1. _____

Answer: _____

5. Work it out in your **head! Tick** the correct answer!



Remember!

☑ Subtract ones from ones.
☑ Subtract tens from tens (if necessary).
☑ Check your answer..

63 − 3 = ?
□ 66
□ 60
□ 63

84 − 4 = ?
□ 80
□ 88
□ 78

Self - check	Teacher's comments
☐ I finished the task.	
☐ I checked my work.	

How did I do (circle):





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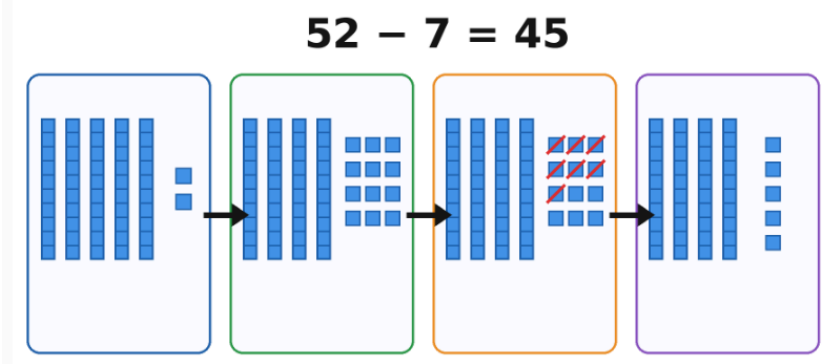
Name: Grade: Date:

Subtraction Adventures to 100

Level 2	What do I need to do?	What can I use to solve this task?
	Ready for a subtraction challenge? 1.Work through each task carefully. 2.Use the method that is shown to help you. 3.Remember to **regroup when needed**, show your working and **check your answers** when you finish.	A hundred square, number columns (if needed), a visual reminder of the method for finding the missing starting number, reminder cards

1. Calculate the difference! **Write** the **difference** on the _____!

If there are not enough ones, regroup 1 ten.



1. At first - 52 is 5 tens and 2 ones.
2. Regroup 1 ten as 10 ones. Now there are 4 tens and 12 ones.
3. Take away 7 ones. 12 ones − 7 ones = 5 ones.
4. Answer: 4 tens and 5 ones = 45.

32 − 5 = _____ 64 − 7 = _____

41 − 4 = _____ 81 − 3 = _____

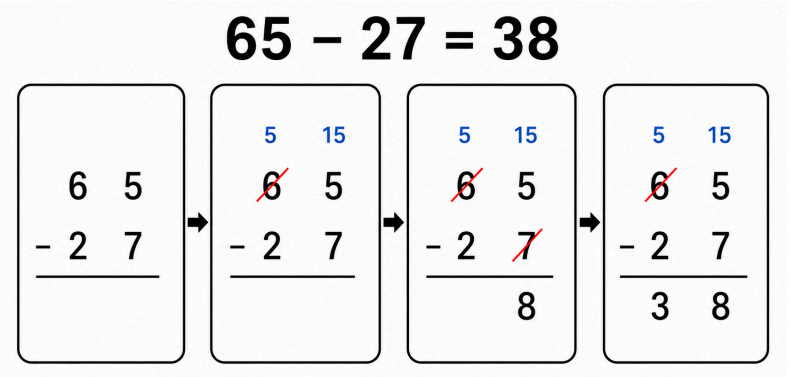
53 − 8 = _____ 45 − 9 = _____

72 − 6 = _____ 70 − 5 = _____

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2. Calculate the difference! **Use the written method!**



1. **Start with the ones.** There are not enough ones to subtract 7, so **regroup 1 ten as 10 ones**.
2. **Subtract the ones.** 15 − 7 = 8
3. **Subtract the tens.** 5 − 2 = 3
4. **Write the answer. 38**

43 − 15 = _____ 74 − 25 = _____

52 − 24 = _____ 85 − 16 = _____

61 − 13 = _____ 92 − 34 = _____

Do the written calculations here.

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3. Calculate the value of the expression! Compare! **Write** the corresponding **symbol** ⚪!

Example: 56 - 7 < 50 (because 49 < 50)

Use the signs: **> (greater than), < (less than), = (equal to).**

71 − 8 ⚪ 63

44 − 6 ⚪39

83 − 5 ⚪78

4. Read! **Solve** the word problems!



Read! Write the mathematical operation. Write the answer.

1. There **were 58 apples** in the basket. **16** apples **were eaten**.

How many apples **were left**?

1) _____

Answer: _____

2. **There were 73 books in the library. 21 books were lent to readers.**

How many books **were left** in the library?

1) _____

Answer: _____

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5. Find the mistake! **Tick** the correct answer! **Write** the correct answer!

Remember!

☑ Regroup only **1 ten (10 ones)**.
☑ First subtract the **ones**, then the **tens**.
☑ Check your answer.



Anna **calculated:** 64 − 8 = 58 **Did Anna calculate correctly?**	□ **Yes** □ **No** **Correct answer:** _____

Self - check	Teacher's comments
☐ I finished the task.	
☐ I checked my work.	

How did I do (circle):







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Name: Grade: Date:

Subtraction Adventures to 100

Level 3	What do I need to do?	What can I use to solve this task?
	Ready for a subtraction challenge? 1.Complete each task carefully. 2. Choose a strategy that helps you solve it. 3.When you have finished, **check all your answers**.	A hundred square, number columns (if needed), a visual reminder of the method for finding the missing starting number, reminder cards

1. **Work it out** in your head!

REMEMBER!

- **Rounding to the nearest ten.**

Example: 83 − 19 = 83 − 20 + 1 = 63 + 1 = 64

- **Splitting into parts.**

Example: 74 − 37 = (74 − 30) − 7 = 44 − 7 = 37

72 − 28 = _____ 75 − 38 = _____

91 − 36 = _____ 88 − 49 = _____

64 − 27 = _____ 97 − 58 = _____

2. **Calculate** the unknown minuend!

Use the **inverse operation (addition).**
Example: □ − 18 = 45 → □ = 45 + 18 = 63

⚪ − 17= 45

⚪= _____

⚪ = _____

⚪ − 27 = 53

⚪ = _____

⚪= _____

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3. Word problems



Read! Decide what information is **given** and what you **need to calculate**. Write the **question.** Write the **mathematical operation.** Write the **answer.**

1. **86 pupils** took part in Sports Day. After the first relay, **18 pupils went home**. What can you calculate?

1) _____

_____

Answer: _____

2. There **were 95 ice creams** in the shop. During the day, **47 ice creams were bought**.

What can you calculate?

1) _____

_____

Answer: _____



4. Think, write and solve!

Write 2 different subtraction calculations with a **difference of 50**.

1. _____
2. _____

Self - check	Teacher's comments
☐ I finished the task.	
☐ I checked my work.	

How did I do (circle):





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LESSON PLAN

Grade: 2
Topic: Addition within 100
Lesson duration: 40 minutes

By the end of the lesson, pupils will be able to:
- add numbers within 100 using a method that suits them;
- add mentally and/or using written methods;
- find an unknown addend and compare the values of expressions;
- solve a one-step word problem by choosing the appropriate operation;
- check their work, identify and correct mistakes;
- explain the method they used to solve a problem.

Introduction (8 min)

Lesson stage	Time	Teacher's actions (what the teacher says and does)	Expected pupil activity / responses	Materials	Formative assessment / observation focus	Differentiation, individualisation / methodological notes
Organisation	2 min	The teacher welcomes the pupils and greets them. "Let's get our workspaces ready. Today we will continue working with mathematical operations within 100. Everyone will have the opportunity to work in a way that suits them." The teacher names the individual learning materials needed for the lesson: worksheet, pencil, pen and eraser.	Pupils greet the teacher and prepare for the lesson by checking that they have the necessary individual learning materials: worksheet, pencil, pen and eraser.	Worksheets, pencil, pen, eraser.	Whether pupils are able to **prepare for the lesson independently** and **follow a short instruction**.	If necessary, use a **visual sequence of actions** and provide an **individual reminder**.

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Activation of prior knowledge	3 min	The teacher writes **24 + 5** on the board and asks: "What does the + sign mean? What do we call the result? How can we calculate it?" The teacher demonstrates using a **number line** and a **tens-and-ones model**.	Pupils identify the operation as addition, calculate **24 + 5** and suggest a calculation method they already know.	Number line, tens-and-ones model, board.	Whether pupils **understand the meaning of addition**; whether they can work with **tens and ones**; which calculation strategy they choose.	Allow pupils to use a **number line** or **counting materials**. More confident pupils complete the calculations mentally.
Formulating the lesson aim and setting the learning outcome	3 min	"Today we will learn to add numbers within 100 and choose an addition method that suits us. We will also learn to check our work." The teacher invites pupils to formulate the **learning outcome (LO) together – I can add numbers within 100.**	Pupils listen and explain in their own words what they will learn during the lesson and **take part in setting the learning outcome**.	Lesson aim displayed on the board, visual card.	Whether pupils **understand what they will be able to do by the end of the lesson**.	The aim can be represented using symbols: + → **calculate** → **check**.

Practical Work (22 min)

Lesson stage	Teacher's actions (what the teacher says and does)	Level 1	Level 2	Level 3	Materials	Formative assessment / observation focus	Methodological notes
Distributing worksheets (2 min)	"Now everyone will receive their own worksheet. Work at your own pace. If necessary, use a reminder card or **raise your hand if you need help**." The teacher distributes the differentiated worksheets.	Receives a Level 1 worksheet.	Receives a Level 2 worksheet.	Receives a Level 3 worksheet.	Differentiated worksheets, reminder cards.	Whether pupils **understand the instructions and begin working**.	Do not emphasise the levels; **focus on each pupil's individual progress**.

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Task 1 (5 min)	The teacher demonstrates one example. "First, **think about how you can calculate this example. Use a method that suits you.**"	Calculates using a reminder card; counts forwards on a number line.	Calculates mentally, using the **make-the-next-ten strategy**.	Calculates mentally, etc.; chooses an effective strategy.	Worksheets, number line, tens-and-ones model.	**Correct answer; appropriate choice of strategy; ability to use support when needed.**	**Level 1 – visual model; Level 2 – prompting questions; Level 3 – the pupil explains the steps used to solve the calculation.**
Task 2 (5 min)	The teacher observes the pupils' work. If necessary, draws their attention to their work and prompts them: **"Check it again. What can you use to make sure your answer is correct?"**	**Matches** each calculation to the correct answer.	**Completes the calculations** using a written method.	**Finds an error in a** calculation, corrects it and explains the correction.	Worksheets, reminder cards.	Whether pupils can **apply what they have learnt to a new task** and **identify an error**.	Do not give the pupil the answer; provide an **example or prompting questions** instead.
Task 3 (5 min)	"What do we know? What are we trying to find? How can we check?" If necessary, the teacher reminds pupils about using the **inverse operation** and related number facts.	**Finds the unknown number** (without bridging through a ten).	Calculates the sum and compares values using **<, >, =**.	**Finds the unknown addend.**	Worksheets, reminder cards.	Whether pupils **understand how to find an unknown addend** and **use the symbols <, > and = correctly**.	Gradually reduce the amount of support provided.

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Task 4 (5 min)	The teacher reminds pupils of the **steps for solving a word problem**: "Read. What information is given? What do we need to calculate? Write the operation. Write the answer." The teacher provides individual support in identifying the relevant information.	**Solves the problem; uses a reminder card** with the steps for solving a word problem if necessary.	**Solves the problem;** writes the operation and the answer.	**Solves the problem and independently formulates what can be calculated** (the question).	Worksheets, reminder card with the steps for solving a word problem.	Whether pupils **identify the given information and what needs to be calculated**, write the appropriate operation, and formulate and write the answer.	If a pupil has difficulty reading, the teacher **reads the problem aloud**; numbers and key words may be **underlined or highlighted**.
Task 5 (for pupils who work at a faster pace)	**The teacher provides individual explanations to pupils if necessary.**	-	Pupils **independently create and write** three examples that follow the task instructions.	**Writes the appropriate addend** so that the value of the expression is correct.	Worksheets	Whether pupils **can complete the task independently and follow the task instructions.**	Pupils **complete the tasks independently**.

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Lesson Conclusion (10 min)

Lesson stage	Time	Teacher's actions (what the teacher says and does)	Expected pupil activity / responses	Materials	Formative assessment / observation focus	Differentiation, individualisation / methodological notes
Checking work and correcting errors	4 min	"Now everyone will check their own work. It is important not only to see the correct answer, but also to understand how we arrived at it." **The teacher demonstrates selected answers and asks**: "How did you get this answer? Could it be calculated in a different way?"	Pupils **compare** their answers, **correct errors** and **explain** one solution.	Interactive whiteboard / board, worksheets.	Whether pupils **identify and correct errors** and whether they can **explain the steps used to solve a problem**.	Errors are used as a **learning opportunity**. Give pupils time to think and make corrections independently.
Self-assessment	2 min	"Think about how you did today." The teacher invites pupils to **assess their own performance by choosing the statement that best describes them:** 🟢 I can add numbers within 100 and explain how I worked it out. 🟡 I can do most of it, but I would like more practice. 🔴 I still need support.	Pupils **assess their own performance** and, if possible, explain the reason for their choice.	Green, yellow and red cards / emotion cards.	Whether pupils can **assess their own performance** and identify **what they can do well and what they still need to improve**.	If pupils find self-assessment difficult, the teacher provides **questions to guide their reflection**.
Feedback	2 min	The teacher writes **36 + 8 =** □ on the board. "Calculate it using a method that suits you. If you can, explain: *This is how I worked it out…*"	Pupils calculate **36 + 8** and briefly **explain the method they used**.	Board, small piece of paper or worksheet.	Provides **quick information about pupils' progress and any further**	Allow pupils who need additional support to use a **number line**.

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					support needed.	
Lesson conclusion	2 min	The teacher **summarises**: "Today we learnt to add numbers within 100, choose a suitable calculation method and check our work. **In the next lesson, we will continue developing these skills.**"	Pupils **tidy their workspace** and name **one thing they learnt**, answering if invited to do so.	Worksheets.	Whether pupils can **identify what they have learnt** and tidy their workspace.	Emphasise **individual progress**.

Formative Assessment Summary

Skill assessed	Observation indicators	Achieved	Partially achieved	Support needed
Adds within 100	Correctly calculates sums appropriate to their level.	□	□	□
Chooses an addition strategy	Uses a number line and chooses an appropriate strategy.	□	□	□
Uses written methods	Correctly sets out and completes calculations using a written method.	□	□	□
Finds an unknown addend	Chooses the appropriate operation and checks the result.	□	□	□
Solves a word problem	Identifies the given information and what needs to be calculated, chooses the appropriate operation, completes the calculation and formulates an answer.	□	□	□
Checks the result	Identifies and corrects an error.	□	□	□
Explains the solution	Explains the steps used to solve the task.	□	□	□
Works independently	Follows instructions and makes purposeful use of the available support.	□	□	□

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Teacher's Reflection After the Lesson

What went well?

- Did the pupils achieve the lesson aim? Was the intended **learning outcome (LO)** achieved?
- Which addition strategies did the pupils use successfully?
- Which differentiation and individual support methods were the most effective?

What difficulties did the pupils experience?

- Did pupils find **bridging through a ten**, written methods, finding the unknown addend or solving the word problem difficult?
- Did any pupil require more support than planned?
- Did all pupils have enough time to complete the tasks?

What should be developed further in the next lesson?

- Which pupils should continue using visual or practical support?
- Which pupils need additional practice at their current level?
- Which pupils are ready for more challenging tasks and greater independence?

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Teacher's Notes

Grade: II
Topic: Introduction in multiplication: repeated additions, groupings and simple tables
Learning objective(s):

- To identify the factors in a multiplication problem based on visual aids (pictures of cherries, bananas, or birds).
- To convert repeated additions of equal terms into multiplication problems, correctly recording the result.
- To group equal terms in a series of additions to facilitate calculating the sum.
- To perform simple mathematical calculations to find the products of given factors.
- To break down given numbers into products of two factors and, subsequently, into products of three factors.
- To solve simple problems,

The worksheet was designed by: LTGM

	Instruction for a student	Expected answer	Assessment / observation focus	Materials / Resources	Methodological recommendations
Level 1	Look at the pictures (cherries, bananas, birds) and write the multiplication equation that corresponds to the number of groups and	Correctly identifying the factors in the images Forming groups with an equal number of elements and	The ability to transition from a concrete-intuitive representation (drawing) to the mathematical symbol for multiplication. The ability to recognize a repeated addition pattern in a visual representation.	Worksheet 1, pencils, Supporting Images Tokens Concrete, intuitive materials Interactive whiteboard	It is recommended to use counters or real objects to demonstrate that adding 8 five times is slower than calculating it.

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	the number of objects in each group. Convert repeated addition problems into multiplication problems and calculate the result. Group the equal terms and write their sum. Perform the calculations and write down the correct answer for the exercises with given factors.	writing the corresponding multiplication problem. Correctly solving multiplication problems	Understanding the direct relationship between adding equal terms and the multiplication operation. Understanding that the first factor represents the number of groups/repetitions, and the second represents the size of the group. Correct use of mathematical terminology	The app https://www.mathlearningcenter.org/apps	Emphasize reading the operation as “8 times 5.” The emphasis should be on counting “how many times” a number is repeated.

Level 2	**Instruction for a student**	**Expected answer**	**Assessment / observation focus**	**Materials / Resources**	**Methodological recommendations**
	Calculate the products for the given multiplication problems (various multiplication tables). Look at the pictures (birds, baskets of	Correct product results. Problem-solving: number of birds.	The extent to which students have memorized and can apply the multiplication table. The ability to translate a simple	Worksheet, images with red birds and fruit baskets Interactive board The app https://www.mathlearningcenter.org/apps	Encourage students to check the result of the multiplication by repeated addition if they are unsure. Discuss the meaning of each factor in the context of the problem (number of

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	apples/pears) and write the solution first as a sum of equal terms, then as a product. Solve the problem with the birds on the branches, clearly writing out the necessary operation.		mathematical text (problem) into a multiplication operation. The correct use of mathematical terminology		branches vs. number of birds).

Level 3	Instruction for a student	Expected answer	Assessment / observation focus	Materials / Resources	Methodological recommendations
	Group the elements in the pictures, fill in the blanks, and calculate. Identify and circle the operations that correspond to the result written on the label (e.g., for 24, 18, etc.). Factor the numbers 45, 81, 50, and 36 into products of two factors, and then into products of three factors. Solve the word problem involving the baskets of	Correct circling (e.g., for label 24 and others). Correct factorizations: e.g., 2 factors and / or other variations for 3 factors. Solving the complex problem: fruits.	Logical thinking and the ability to find multiple solutions for the same problem (reversibility of operations). The ability to solve problems involving more than one operation (multiplication and addition). Following the order of operations, Correct use of mathematical terminology	Worksheet, writing utensils, interactive board	Challenge students to find as many ways as possible to break down a number. Practice the order of operations in problems that combine multiplication and addition.

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	apples and pears by finding the total number of fruits.				

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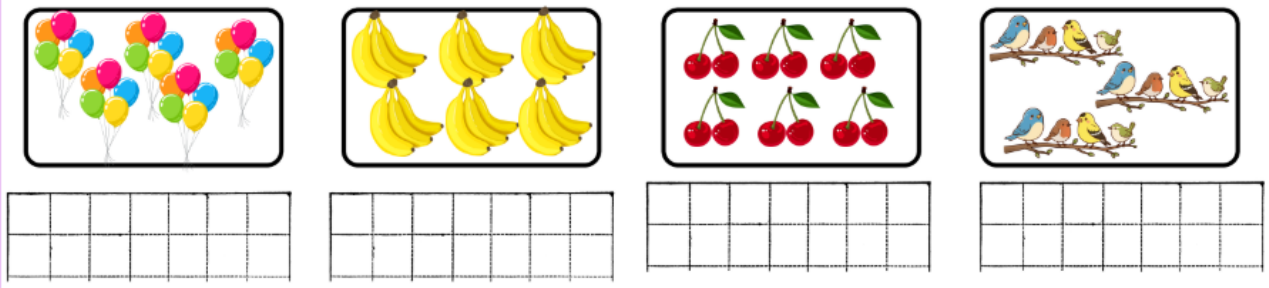
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Name: Grade: Date:

Introduction to multiplication: repeated addition, grouping and simple tables

Level 1	What do I need to do?	What can I use to solve this task?
	1. Remember what you know about repeated additions and multiplications. 2. Look carefully at the images and try to understand what they represent. 3. Solve the operations and write down the results. 4. Check the results before going to the next exercise.	• A pencil or a pen • An eraser

1. Write the multiplications represented by the drawings:



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2. Write the repeated additions as multiplication and write the result:

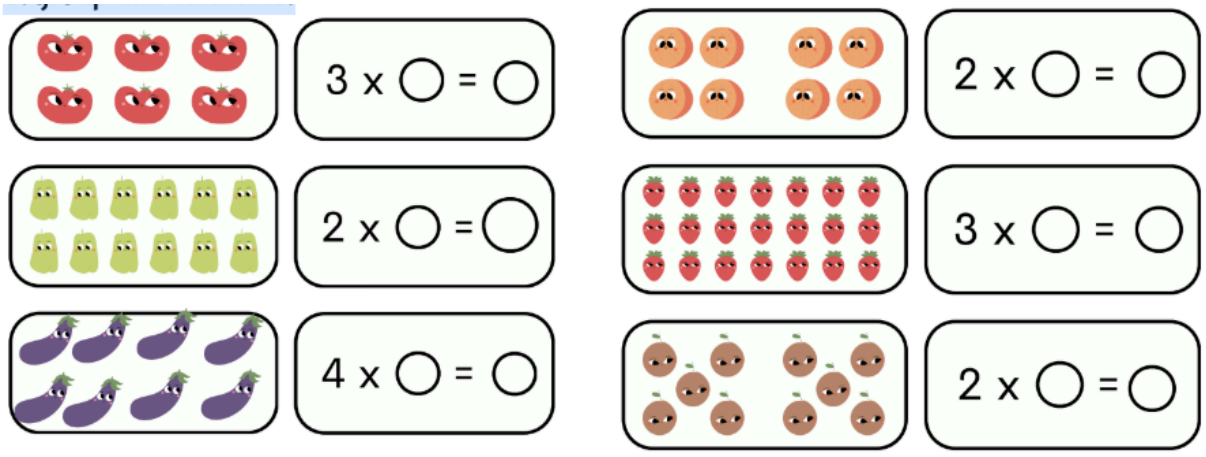
5 +5+ 5+ 5 + 5 + 5+ 5 + 5 = ☐ X ☐ = ☐

9+ 9+ 9 + 9 + 9 + 9 = ☐ X ☐ = ☐

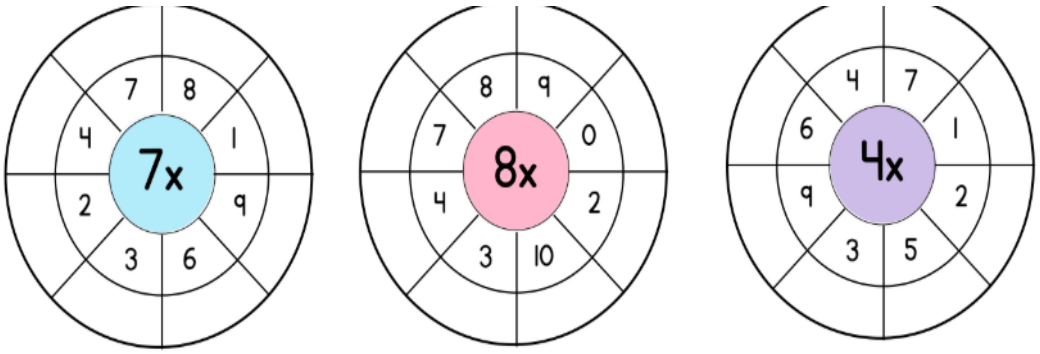
4+ 4 + 4 +4 + 4 + 4 + 4 + 4 + 4 = ☐ X ☐ = ☐

8 + 8 +8 + 8 + 8 + 8 + 8 = ☐ X ☐ = ☐

3. Group and calculate:



4.Calculate and write the correct answer:



Self - check	Teacher's comments
☐ I finished the task.	
☐ I checked my work.	

How did I do (circle):



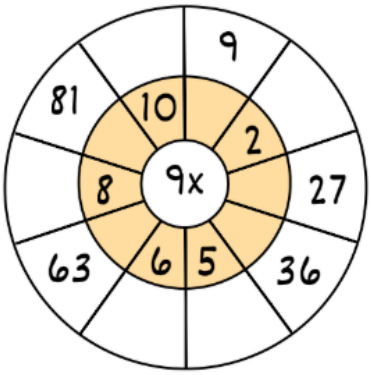


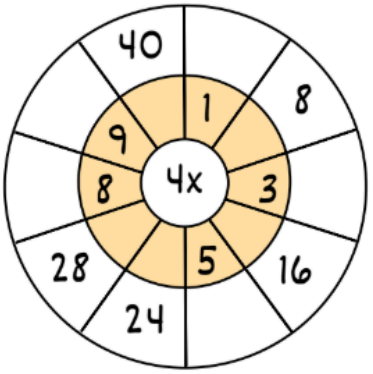
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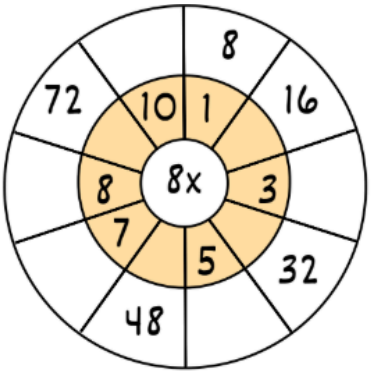
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Level 2	What do I need to do?	What can I use to solve this task?
	1. Remember what you know about the order of operations. 2. Read the tasks of each problem carefully. 3. Write down the solutions. 4. Check the answers	• A pencil or a pen • An eraser

1. Calculate and write the correct result:





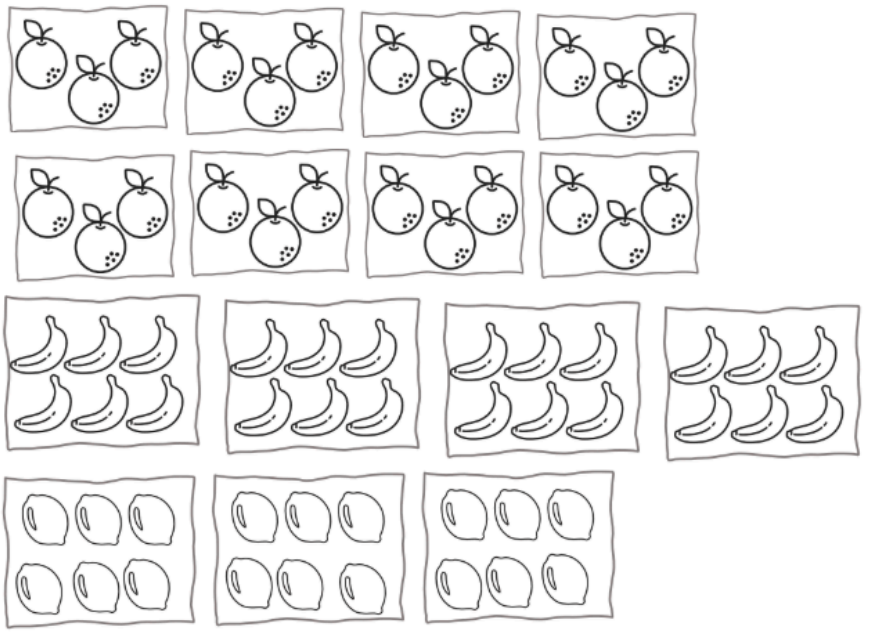


2. Find out the products:

9 X 8 =	9 X 3 =	9 X 5 =	4 X 2 =
7 X 8 =	2 X 7 =	7 X 4 =	7 X 7 =
4 X 3 =	4 X 5 =	5 X 3 =	8 X 8 =
3 X 8 =	6 X 8 =	2 X 8 =	10 X 8 =

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3. Write it as the sum of equal terms, then as a product, and calculate it:



4. There are 4 birds on a branch. How many birds are there on 5 branches? Write the operation and solve the problem.



Self - check	Teacher's comments
☐ I finished the task.	
☐ I checked my work.	

How did I do (circle):





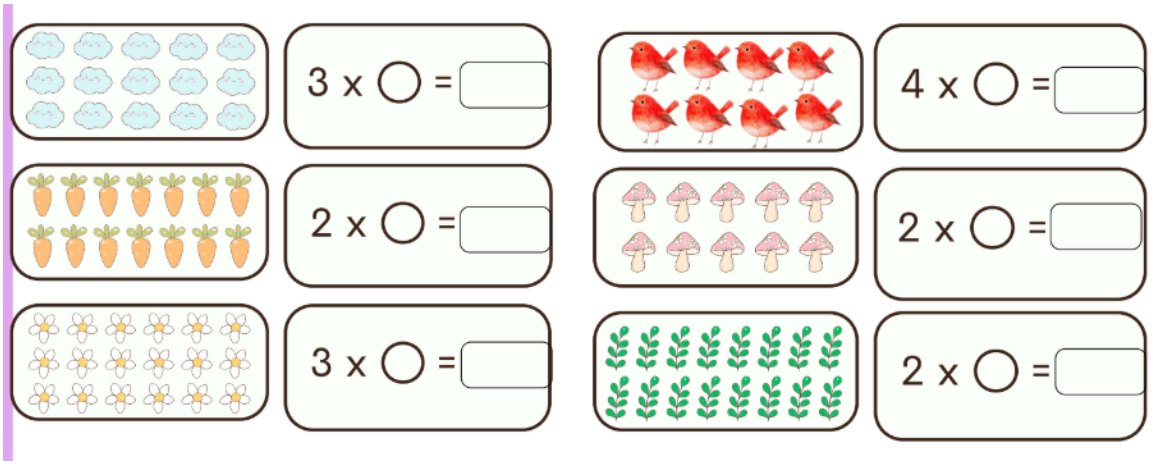


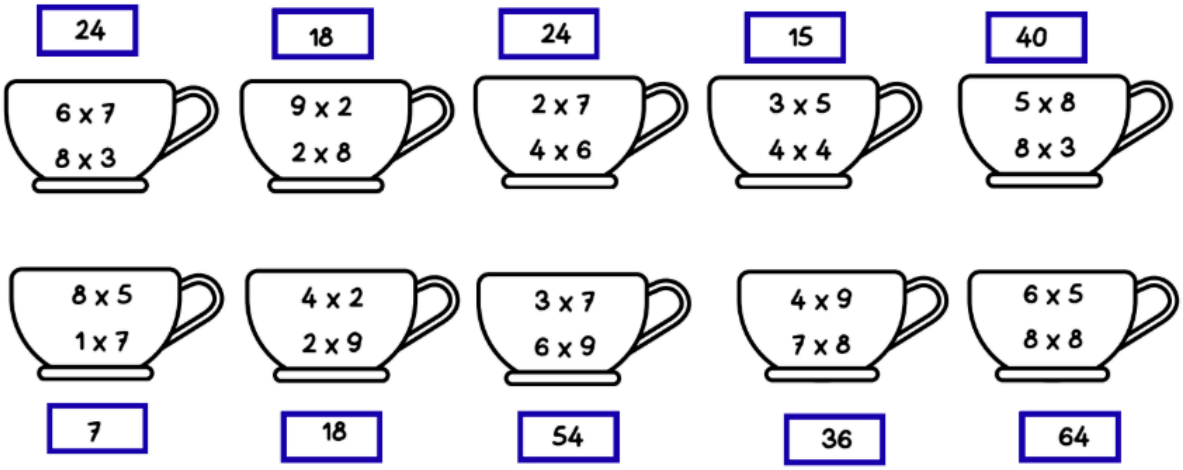
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Level 3	What do I need to do?	What can I use to solve this task?
	1. Remember what you know about groups of equal numbers of terms, put together. 2. Read the tasks carefully, so as to understand what you have to do. 3. Solve the problems. 4. Check the results.	• A pencil or a pen • An eraser

1. Group, fill in and calculate:





2. Circle the operation which has the result indicated on the label:

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45	81	50	36

3. Write the numbers 45, 81, 50 și 36 as a product of two factors, then as a product of 3 factors:



4. In 3 baskets we have 3 apples, and in 4 baskets we have 2 pears. How many fruits are there in the seven baskets?

Self - check	Teacher's comments
☐ I finished the task.	
☐ I checked my work.	

How did I do (circle):





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Teacher's Notes

Grade: II
Topic: Solving problems using combined arithmetic operations (addition, substraction, multiplication, division).
Learning objective(s):
- To identify the correct mathematical operations based on specific language ("X times as many," "half," "three times as much").
- To solve problems involving at least two operations of different order.
- To use logical reasoning to deduce unknown values from a given total.

The worksheet was designed by: LTGM

	Instruction for a student	Expected answer	Assessment / observation focus	Materials / Resources	Methodological recommendations
Level 1	Read the problem carefully until you clearly understand the story and the action. Highlight the given information in one color and the question in another color. Think step by step: first calculate the number of boys, explaining in your own words what you've figured out. Solve the problem using the appropriate operation to find the	PROBLEM 1 Problem 1: How many tulips did Grandma plant? 3 × 9 = 27 (tulips) Problem 2: How many hyacinths did Grandma plant? 2 × 5 = 10 (hyacinths) Problem 3: How many flowers did Grandma plant in total? 27 + 10 = 37 (flowers)	The ability to recognize the structure of a multiplication problem in a text ("rows of … each") and to correctly calculate the final sum. Understanding of mathematical vocabulary: The student's ability to correctly associate the expression "3 times fewer" with the division operation.	worksheet, colored tokens to simulate rows of flowers, interactive screen, PowerPoint presentation with animated problems	For students who are struggling, they may be asked to draw the operation before writing it down. For advanced students, a third type of flower can be added. For an additional challenge, students can be asked how many more tulips

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	total, and write down the complete answer.	Final answer: Grandma planted 37 flowers. Optional, for more advanced students who know the order of operations, the solution using a single calculation: 3 x 9 + 2 x 5 = 27 + 10 = 37 flowers PROBLEM 2 Operation 1: How many boys on roller skates are in the park? 12 ÷ 3 = 4 (boys) Operation 2: How many children are there in total in the park? 12 + 4 = 16 (children) Final answer: There are 16 children in the park PROBLEM 3 Operation 1: How many apples are in the orchard? 4 × 8 = 32 (apples) Operation 2: How many pears are in the orchard? 3 × 9 = 27 (pears) Operation 3: How many fruits are there in total in the orchard? 32 + 27 = 59 (fruits)	Structured thinking: The ability to recognize that this is a compound problem (requiring two successive operations) and not to consider the problem solved after the first operation. Accuracy in calculation: The correctness of the division (12 ÷ 3) and the subsequent addition (12 + 4). Writing the solution: Clearly formulating explanations for each operation and writing out the final answer in full.		there are than hyacinths. • Avoiding Confusion: Second-grade students may confuse the phrase “3 times fewer” with “3 fewer.” It is recommended that you discuss or verbally illustrate the difference between division and subtraction before they begin working independently. Visual representation: If students are having difficulty, guide them to make a simple drawing (e.g., drawing 12 circles for girls and grouping them in sets of 3 to determine the number of boys). Monitoring the Steps: Check students’ work as they solve the problem. Intervene with guiding questions such as “What did you

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		Final answer: There are 59 pieces of fruit in the orchard. (Optional, using a single calculation: 4 x 8 + 3 x 9 = 32 + 27 = 59 pieces of fruit). PROBLEM 4 Operation 1: How many balloons does Matthew have? 8 x 3 = 24 (balloons) Operation 2: How many balloons does Ana have? 24 × 2 = 48 (balloons) [the repeated addition method is also accepted: 24 + 24 = 48] Operation 3: How many balloons do the three children have together? 8 + 24 + 48 = 80 (balloons) Final answer: The three children have 80 balloons in total.			learn from this calculation?" or "Did you answer the question in the text?" for those who tend to stop after finding the number of boys.

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Level 2	Instruction for a student	Expected answer	Assessment / observation focus	Materials / Resources	Methodological recommendations
	• Read the given problems carefully. • Identify and write down the data from the problem. • Write out all the steps in the calculation. • Solve the indicated problems by following the steps for solving a problem.	PROBLEM 1 Operation 1: How many books has Maria read? $9 \times 3 = 27$ (books) Operation 2: How many books has David read? $9 - 6 = 3$ (books) Operation 3: How many books have the three children read together? $9 + 27 + 3 = 39$ (books) Final answer: The three children have read 39 books in total. PROBLEM 2 Operation 1: How many children are in the first group (the ones reciting)? 3 x 6 = 18 (children) [or 6 x 3 = 18] Operation 2: How many children are in the second group (the ones dancing)? 2 x 11 = 22 (children) [repeated addition is also acceptable: 11 + 11 = 22] Operation 3: How many children are participating in	A correct understanding of the terms “half” (dividing by 2) and “triple” (multiplying by 3), as well as the ability to maintain the correct order of operations. Correct use of mathematical operations. Following the correct order of operations.	Worksheet, with a calculation area organized into columns for each number found.	• You can provide a short “glossary” of terms on the board (e.g., half =). Quick students can try to write the entire solution as a single long mathematical expression. • It is essential to discuss with students, before solving the problem, the clear difference between “that many times” and “that much more/less.” Ask them to give their own short examples to check their understanding..

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		the artistic program? 18 + 22 = 40 (children) Final answer: 40 children are participating in the arts program. PROBLEM 3 Operation 1: How many flowers were placed in the baskets? 5 × 4 = 20 (flowers) Operation 2: How many flowers were placed in the vases? 7 × 3 = 21 (flowers) Operation 3: How many flowers were used in total? 20 + 21 = 41 (flowers) Final answer: A total of 41 flowers were used. PROBLEM 4 Operation 1: How many candies are in the first box? 3 × 4 = 12 (candies) Operation 2: How many candies are in the second box? 4 × 5 = 20 (candies) Operation 3: How many candies are in the third box? 3 × 3 = 9 (candies) Operation 4: How many candies are there in total?			

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		12 + 20 + 9 = 41 (candies) Final answer: There are 41 chocolate candies in total.			

Level 3	Instruction for a student	Expected answer	Assessment / observation focus	Materials / Resources	Methodological recommendations
	The increased level of difficulty is evident in Problem 3. Analyze Problem 3 with the 100 marbles. Think logically: if 72 marbles are not white, that means those 72 are green and yellow combined. If 78 are not yellow, that means the rest are white and green. Use subtraction from the total of 100 to find, one by one, the number of white balls, yellow balls, and, finally, green balls.	Problem 1 Operation 1 (Finding the sum): 138 + 267 = 405 Operation 2 (Finding the product): 9 × 8 = 72 Operation 3 (Adding the product to the sum): 405 + 72 = 477 Final Answer: The result is 477. Problem 2 Step 1 (Finding the first number): 20 ÷ 2 = 10 (first number) Step 2 (Finding the second number): 9 × 3 = 27 (second number) Step 3 (Finding the third number): 10 + 27 = 37 (the third number) Step 4 (Sum of the three numbers): 10 + 27 + 37 = 74	The ability to use logical negation to identify a subset and the accuracy in performing subtraction with carrying in the 0–100 range.	Worksheet, simple pie charts (Venn diagrams) to visualize the intersection of sets of balls.	The problems can be discussed in a group. Students can be encouraged to check their answers with their classmates.

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		Final answer: The sum of the three numbers is 74. Problem 3 Solution logic: If we set aside the non-white balls (that is, the green and yellow ones combined, which total 72) from the total of 100 balls, we are left with only the white balls. We apply the same logic to the yellow balls. Step 1 (How many white balls are there?): 100 - 72 = 28 (white balls) Step 2 (How many yellow balls are there?): 100 - 78 = 22 (yellow balls) Step 3 (How many green balls are there?): We add the white and yellow balls, then subtract that total from the original number. 28 + 22 = 50 (white and yellow marbles combined) 100 - 50 = 50 (green marbles) (Successive subtraction is also acceptable: 100 - 28 - 22 = 50) Final answer: There are 28 white balls, 50 green balls, and 22 yellow balls in the box Problem 4			

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		Step 1 (How many children are there in total?): David + 4 friends = 5 (children) Step 2 (How many candies are left?): The largest single-digit natural number is 9, so there are 9 candies left. Step 3 (How many candies did the children take?): $5 \times 4 = 20$ (candy taken from the box) Step 4 (How many pieces of candy were there to begin with?): 20 (taken) + 9 (left) = 29 (pieces of candy) Final answer: There were 29 pieces of candy in the box.			

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Name: Grade: Date:

Word problems Math

Level 1	What do I need to do?	What can I use to solve this task?
	1. Read each of the tasks carefully, making sure you understand what you have to do. 2. Look at the images in each problem, as they can help you understand better. 3. Write the operation and the result. 4. Don't forget to check before moving on to the next exercise.	• A pencil or a pen • An eraser

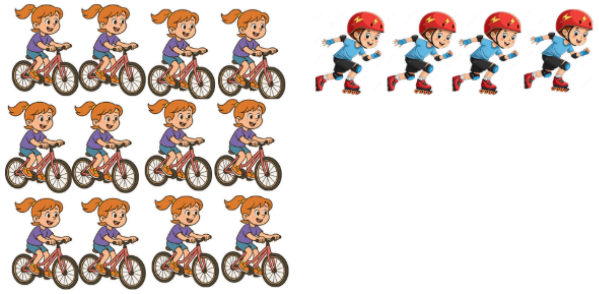
1. Grandma planted 3 rows of 9 tulips each and 2 rows of 5 hyacinths each. How many flowers did Grandma plant?



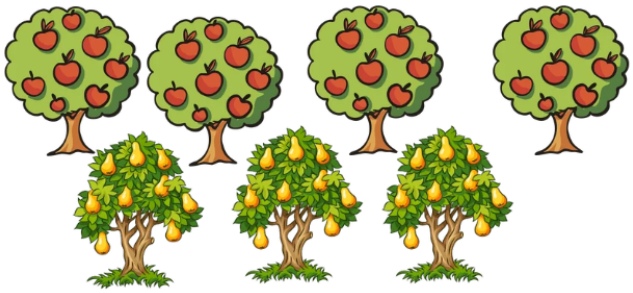


2. In a park, there are 12 girls on bikes and three times fewer boys on roller skates. How many children are in the park?

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3. There are 4 apple trees and 3 pear trees in an orchard. Each apple tree has 8 apples, and each pear tree has 9 pears. How many fruits are there in total?



4. David has 8 balloons, Matt has three times as many as David, and Anna has twice as many as Matt. How many balloons do the three children have in total?



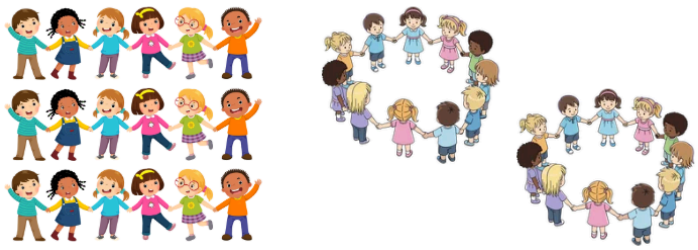
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Level 2	What do I need to do?	What can I use to solve this task?
	1. Remember what you know about the order of arithmetic operations. 2. Read the tasks of each problem carefully. 3. Write down the solutions in any order you consider appropriate. 4. Check the answers	• A pencil or a pen • An eraser

1. Matt read 9 books, Maria read three times as many books, and David read 6 fewer books than Matt. How many books did the three children read in total?



2. The children have prepared a performance. The first group will recite, and the second group will dance. The children in the first group have arranged themselves in 3 rows of 6, whilst those in the second group have formed 2 circles of 11 children each. How many children are taking part in the performance?



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3. I have prepared baskets and vases of flowers. I have 5 baskets and 7 vases. I put 4 flowers in each basket and 3 flowers in each vase. How many flowers have I used?



4. I received 3 boxes of chocolates. In the first box, there are 3 rows, each with 4 chocolates; in the second box, there are 4 rows, each with 5 chocolates; and in the last box, there are 3 rows, each with 3 chocolates. How many chocolates do I have in total?



Self - check	Teacher's comments
☐ I finished the task.	
☐ I checked my work.	

How did I do (circle):







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Level 3	 What do I need to do?	 What can I use to solve this task?
	1. Read the word problems very carefully, as there are no more images to help you visualise the task. 2. Make sure you understand them well. 3. Think about the solutions, arranging the operations in the order you consider them fit. 4. Write down the operations and the result.	• A pencil or a pen • An eraser

1. Add the product of 9 and 8 to the sum of 138 and 267. What is the result?

2. Work out the sum of three numbers, given that the first number is half of 20, the second is three times 9, and the third is the sum of the first two numbers.

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3. There are 100 white, green and yellow balls in a box. If 72 of the balls are not white and 78 are not yellow, work out how many balls there are of each colour.

4. David and his four friends bought a box of sweets. Each child takes 4 sweets. How many sweets were in the box if the number of sweets left is equal to the largest single-digit natural number?

Self - check	Teacher's comments
☐ I finished the task.	
☐ I checked my work.	

How did I do (circle):





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Lesson plan

Date: …

Grade: 2nd

Curricular area: Mathematics and Natural Sciences

Unit: Little Explorers – Geometric Shapes and Solids

Topic: Geometric solids (cube, cuboid, cone, sphere, cylinder)

Lesson type: acquiring new knowledge

Specific skills:

2.2. Identifying simple characteristics specific to plane geometric shapes and geometric solids encountered in various contexts;

Operational objectives:
O1: To recognise geometric shapes (cube, cuboid, sphere, cylinder, cone) using the teaching materials provided or the illustrative charts.

O2: To correctly name the geometric shapes presented, using the appropriate mathematical terminology.

O3: To associate the geometric shapes learnt with familiar objects from their surroundings (for example: sphere – ball, cylinder – glass/can, cube – dice, cone – ice-cream cone).

O4: To identify simple properties of the geometric shapes studied (e.g. to specify which shapes have flat faces, which have curved surfaces, which slide and which can roll).

O5: To construct geometric shapes using the materials provided and following the instructions

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Elements of Teaching Strategy

Methods: conversation, explanation, observation, exercice, demonstration, problematisation

Means: coloured boxes (red and green), charts, geometrical solids, real objects, notebook, envelope with the letter , envelopes containing tokens (pictures and information about geometric bodies) , sticks, modelling clay, a model, https://learningapps.org/, worksheet.

Organizational forms: whole-class activity, individual

Duration: 50 minutes

Lesson sequences	Op. ob.	The Scientific Content of Learning	Teaching strategies					Evaluation	Time
			Methods	Means	*Organization*				
					F	G	I		
1. Organizational Moment		Preparing materials: worksheets and writing materials. Ensuring a suitable learning environment.	Conversation		X				**2 min**
2. Captarea atenției	**O1** **O3**	This will be done by presenting, as a surprise, two mysterious boxes (one red and one green): - the red box (cuboid-shaped) contains several objects: a ball, a Rubik's cube, a tin and a party hat. - the green box contains geometric shapes (cube, cuboid, sphere, cylinder, cone) made of plastic.	Conversation Explanation	Red box Green box Ball Rubik's cube Party hat Tin can Geometric solids	X			Systematic observation of pupils' behaviour	4 min

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		The children notice that the objects in the red box are the same shape as the bodies in the green box.							
3. Announcing the topic and the objectives		There is also an envelope containing a letter in the green box: “Hi! My name is Math! I’ve sent you this letter and these gifts to encourage you to learn. Today, in maths class, you’ll be learning about geometric shapes. Geometry is brilliant! Let’s learn together!” The topic and objectives of the lesson are announced. The pupils are told that in maths they will be learning about geometric solids: the cube, cuboid, sphere, cone and cylinder – shapes which they have also found in the coloured boxes. The title is written on the board and in the pupils’ exercise books.	Conversation		X				2 min

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4. Refreshing one's knowledge		This will be done through a game, using the app https://learningapps.org/. The children must identify flat geometric shapes and list their characteristics. This game helps to refresh their knowledge of geometric shapes, as a prelude to studying three-dimensional geometric shapes. https://learningapps.org/display?v=ptwmd78sc26	Conversation Demonstration Game Explanation	The app lerningapp Smart board	X		X	Systematic observation of pupils' behaviour Pupils' answers	5min
5. Guiding Learning	O1 O2 O3 O4	Each pupil is given an envelope, inside which they will find tokens representing a cube, a cuboid, a cone, a cylinder and a sphere, as well as information about these geometric shapes. On the board there will be a picture showing all the geometric shapes. Whilst the children identify the constituent parts of each shape, details about the geometric shapes will be projected onto the board. One by one, the children will take the token indicated by the teacher out of the envelope. They will name the shape shown in the picture, analyse it, and identify other objects that are shaped like a cube, a cuboid, a sphere, a cylinder or a cone.	Conversation Explanation Exercice Demonstration	Envelopes Tokens featuring an image of the body Tokens containing information Interactive screen	X		X	Systematic observation of pupils' behaviour Pupils' answers	20

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		The net of the shape will also be shown. The pupils will stick the images containing information and the picture of the geometric shape into their exercise books.							
6. Working on improving the performance	O1 O2 O3 O4	The children are given a worksheet containing exercises. (Appendix 1) 1. Name each shape in the picture 2. Count the shapes and write the corresponding number for each shape in the table. 3. Match each shape with its net. 4. Fill in the dotted spaces. 5. Colour in only the geometric shapes. 6. Solve the exercises.	Conversation Explanation Exercice Problematisation	Smart board Worksheet	X		X	Systematic observation of pupils' behaviour Pupils' answers Verbal appreciations	10 min
7 Ensuring Retention And Transfer	O5	At this stage, the pupils are given sticks and play dough. The children have to build a cube and a rectangular prism, which they will display on a model – A gift for our friend Math.	Conversation Explanation Exercice	Sticks Play dough Model	X		X	Systematic observation of pupils' behaviour Pupils' answers Verbal appreciations	5 min

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8. Concluding the activity		Verbal feedback will be given on the pupils' participation in the lesson. The children are encouraged to pay attention to their surroundings and, for the next maths lesson, to prepare a list of objects shaped like a cube, a cuboid, a sphere, a cylinder, a cone.	Conversation	Smart board	X			Verbal appreciations	2 min

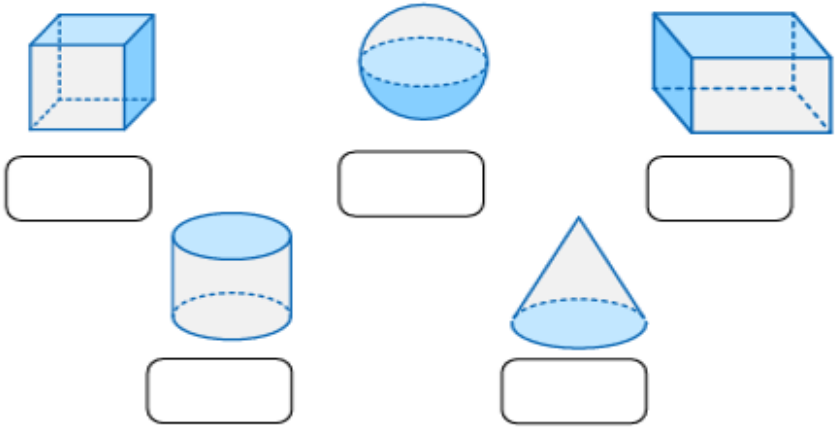
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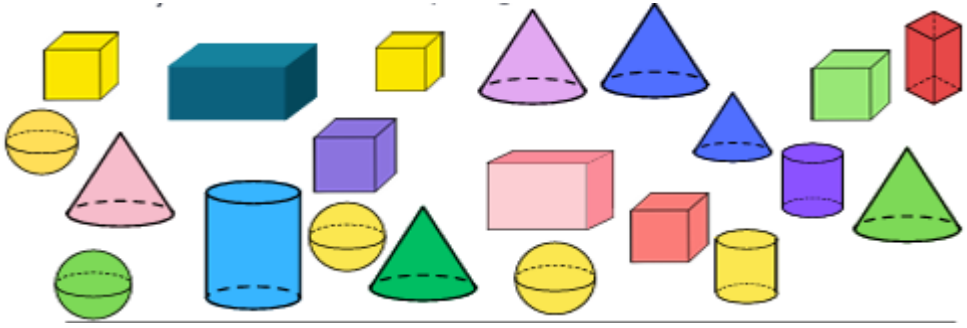
ANNEX 1

WORKSHEET
GEOMETRIC SOLIDS

1. Write the names of the geometric solids you have learnt.



2. Count and note down how many geometric shapes of each type there are:



Cubes =
Cuboids =
Spheres=
Cylinders =
Cones =

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3. Fill in the blanks with one word from the following list: *cube, sphere, cylinder, cone*.

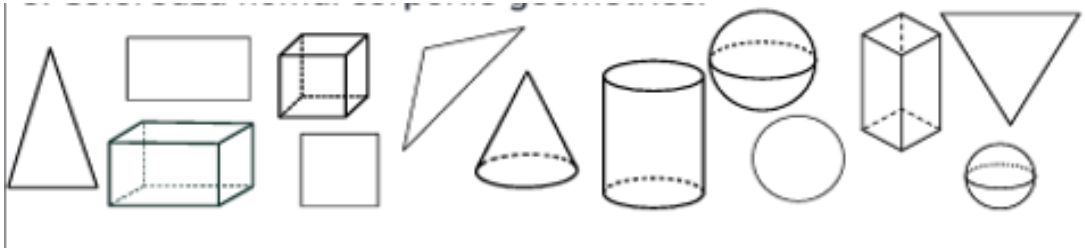
a) A geometric body that can rotate in any direction and has no vertices (corners) is called .....

b) Sometimes ice-cream can be served in a delicious .....

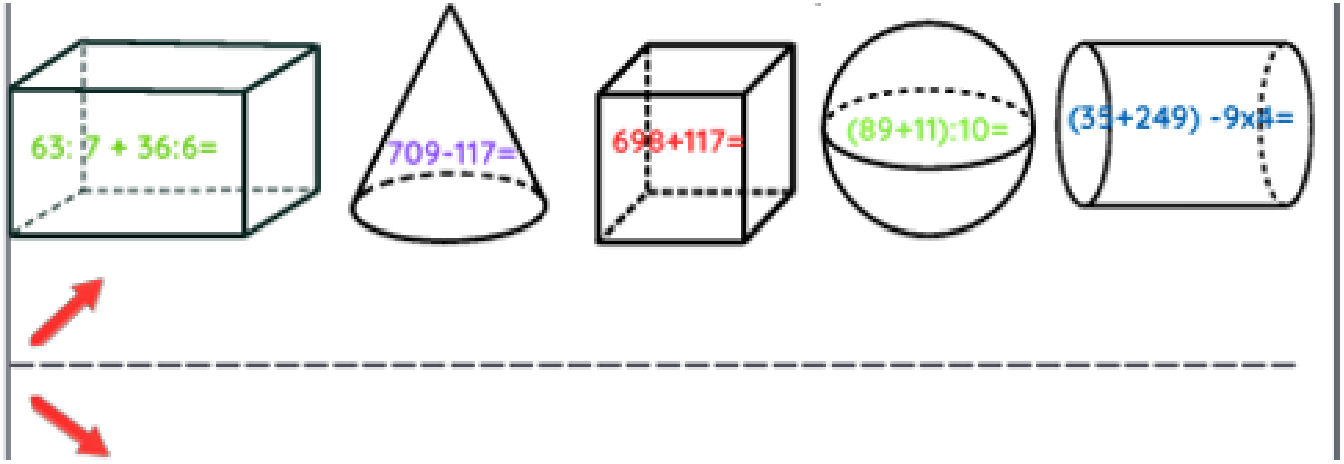
c) The box in which all the faces are equal squares is shaped like a .....

d) A tube of glue or a glass looks like a .....

4. Colour only the geometrical solids:



5. Complete the exercises inside the geometric shapes, then arrange the results in ascending and descending order:



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Teacher's Notes

Topic: Measurement of Length Mass and Capacity
Worksheet: On the Trail of Sizes: The Great Measurement Hunt!
Learning objectives: Compare objects by length, mass and capacity. Match measurement questions to appropriate tools. Estimate length in non-standard units using stated bounds.
The worksheet was designed by: CTA

Level 1	Instruction for a student	Expected answer	Assessment / observation focus	Materials / Resources	Methodological notes
	Compare the pictures. Circle the longer object, colour the heavier animal yellow, and tick the container with the larger capacity.	a) Bus. b) Elephant, coloured yellow. c) Large bucket.	Distinguishes length, mass and capacity; follows the different marking instructions.	Worksheet, pencil and coloured pencils.	Support: Compare one pair at a time and explain longer, heavier and holds more. Challenge: Ask students to explain each choice.

Level 2	Instruction for a student	Expected answer	Assessment / observation focus	Materials / Resources	Methodological notes
	Connect each measurement question to the correct measuring tool.	Table length → A: ruler or measuring tape. Sack of flour mass → B: scale. Juice volume → C: measuring cup.	Selects an appropriate tool for length, mass and liquid volume.	Worksheet and pencil. Optional: measuring tape, scale and measuring cup.	Support: Demonstrate what each tool measures. Challenge: Ask which tool is more practical for a long table and why.

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Level 3	Instruction for a student	Expected answer	Assessment / observation focus	Materials / Resources	Methodological notes
	Estimate the pencil length in paperclips using the clues and picture. Write an estimate and select the matching option.	The pencil must be longer than 5 and shorter than 10 paperclips. Whole-number estimates of 6, 7, 8 or 9 fit these bounds. Use the picture and the student's explanation to judge plausibility; the text alone does not determine one exact answer.	Uses both length bounds; makes a plausible estimate and explains it. Do not assess this as an exact measurement.	Worksheet, pencil, eraser and coloured pencils. Optional: equal-sized paperclips.	Support: Mark 5 and 10 on a number line and discuss the values between them. Challenge: Check an estimate using equal-sized paperclips without gaps. The task title mentions a measurement monster, but no monster activity is specified; do not assess one.

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Name: Class: Date:

On the Trail of Sizes: The Great Measurement Hunt!

TASK 1: Direct Comparison: Lengths, Weights, and Capacities	What do I need to do?	What can I use to solve this task?
	Look closely at the pictures, compare the objects directly with each other, and follow the instructions: **Circle** the item that is **LONGER**. **Color** the animal yellow that is **HEAVIER**. **Check the box** where **MORE WATER** (more capacity) fits inside.	Colored pencils.

a) LENGTH: [Picture: A long bus] vs. [Picture: A small car]

Circle the longer object with a pencil!





b) WEIGHT: [Picture: A large elephant] vs. [Picture: A small mouse]

Color the heavier animal with a yellow pencil!

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c) CAPACITY: [Picture: A large bucket] vs. [Picture: A small cup]

Where does more water fit inside?

- [ ] The large bucket
- [ ] The small cup




Self - check	Teacher's comments
☐ I finished the task.	
☐ I checked my work.	

How did I do (circle):

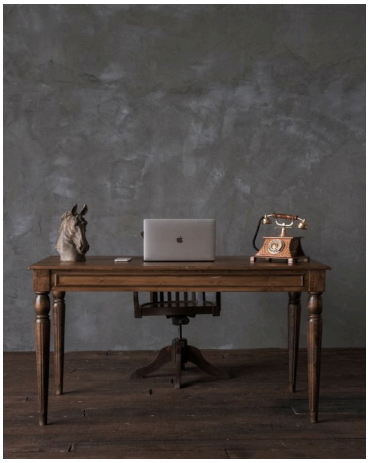




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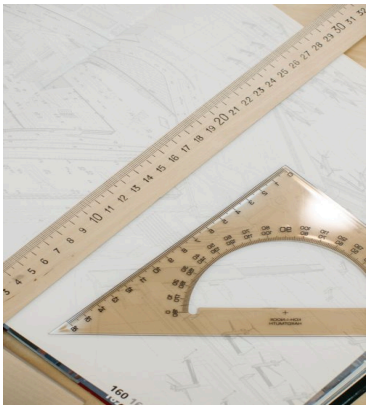
TASK 2: Tool Hunt: How Do We Measure Correctly?	What do I need to do?	What can I use to solve this task?
	Which tool helps us with our work? Connect the measurement task on the left side to the correct measuring tool on the right side using a straight line.	Pencil.

What do we want to know? **Which tool helps us?**









1



2



3

How long is my table?	.....	A.The ruler / The measuring tape
How heavy is the sack of flour?	.....	B.The scale
How much juice is in the glass?	.....	C.The measuring cup

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Self - check	Teacher's comments
☐ I finished the task.	
☐ I checked my work.	

How did I do (circle):



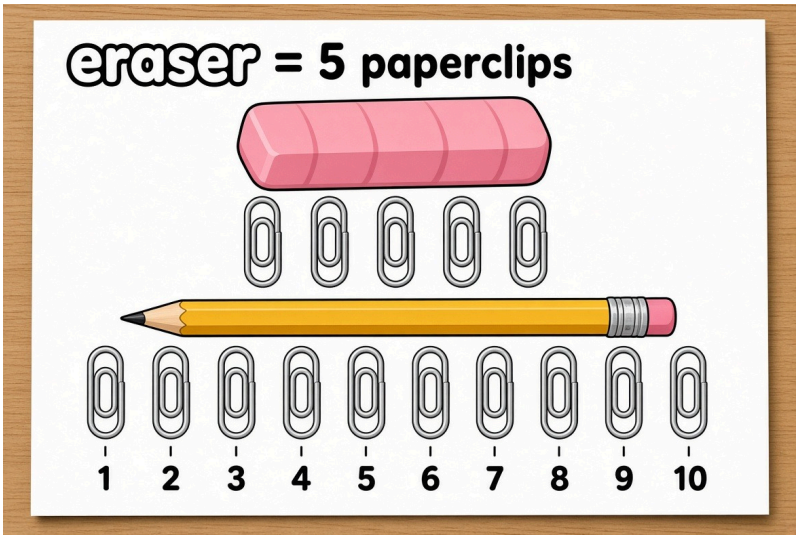




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TASK 3: Tricky Estimation Riddle and Your Measurement Monster	 **What do I need to do?**	 **What can I use to solve this task?**
	Solve the short estimation riddle.	Pencil, eraser, and colored pencils.



Look at the picture and estimate.

- The eraser is as long as **5 paperclips**.
- The pencil is **a little longer** than the eraser.
- The pencil is **shorter than 10 paperclips**.

Estimate: How many paperclips long is the pencil?

My pencil is approximately _____ paperclips long.

My estimate:

☐ 5 ☐ 6 ☐ 7 ☐ 8 ☐ 9

Self - check	Teacher's comments
☐ I finished the task.	
☐ I checked my work.	

How did I do (circle):





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Teacher's Notes

Topic: Calendar and Time
Worksheet: Let's Catch Time
Learning objectives: Recall the number of days in a week and months in a year; identify the next day. Draw clock hands to represent whole hours. Relate a daily activity to its time.
The worksheet was designed by: CTA

Level 1	Instruction for a student	Expected answer	Assessment / observation focus	Materials / Resources	Methodological notes
	Complete the blanks with the correct numbers and day of the week.	7 days in a week. 12 months in a year. If today is Tuesday, tomorrow is Wednesday. Monday → Tuesday is the given example.	Recalls calendar facts and identifies the following day.	Worksheet and pencil. Optional: calendar or weekday cards.	Support: Recite the weekdays in order and point to Tuesday and Wednesday. Challenge: Ask what day follows Sunday.

Level 2	Instruction for a student	Expected answer	Assessment / observation focus	Materials / Resources	Methodological notes
	Draw the short hour hand and long minute hand for 03:00 and 09:00.	03:00: minute hand on 12, hour hand on 3. 09:00: minute hand on 12, hour hand on 9. 04:00 is the given example.	Distinguishes the two hands and shows whole hours correctly.	Worksheet, pencil and red pencil. Optional: teaching clock.	Support: Model 04:00, then let students set a teaching clock before drawing. Challenge: Ask students to show another whole hour

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					and explain both hand positions.

Level 3	Instruction for a student	Expected answer	Assessment / observation focus	Materials / Resources	Methodological notes
	Draw a favourite daily activity and write the time when it happens. Discuss the final request to list activities in order of priority.	Individual answers; the drawing, activity and stated time should agree. There is no single correct time. The example uses 16:30, which is 4:30 p.m. The four identical time prompts do not specify four separate activities.	Connects an activity to a plausible time and communicates it. Assess time knowledge separately from drawing ability.	Worksheet, pencil, eraser and coloured pencils or crayons.	Support: Accept a whole-hour answer. If using the 16:30 example, explain half hours and 24-hour notation first; Task 2 covers only whole hours. Clarify whether the final list is by importance or by time. For chronological order, say “Put your activities in time order.” Challenge: Invite students to describe an optional second activity and say which occurs first.

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Name: Grade: Date:

Let's Catch Time

TASK 1: Calendar Riddle	What do I need to do?	What can I use to solve this task?
	Write the appropriate time concepts and numbers in the blanks below.	Pencil.



If today is Monday, tomorrow will be Tuesday.

There are ..... days in a week.
There are a total of ..... months in a year.
If today is Tuesday, tomorrow will be .....

Self - check	Teacher's comments
☐ I finished the task.	
☐ I checked my work.	

How did I do (circle):

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TASK 2: Let's Draw the Clocks	 What do I need to do?	 What can I use to solve this task?
	Draw the hour hand (short hand) and the minute hand (long hand) inside the clocks according to the given whole hours.	Pencil and red pencil.

Example: It is 4:00. The minute hand is on 12, the hour hand is on 4.



CLOCK 03:00 (Draw with the minute hand on 12 and the hour hand on 3)

CLOCK 09:00 (Draw with the minute hand on 12 and the hour hand on 9)

Self - check	Teacher's comments
☐ I finished the task.	
☐ I checked my work.	

How did I do (circle):





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TASK 3: My Time	What do I need to do?	What can I use to solve this task?
	Draw your favorite activity of the day and note down below what time you do this activity.	Pencil, eraser, and colored pencils / crayons.

Example:
My favourite activity during the day: Playing in the park!!
At what time do I do it? At 16 : 30!! And you?



The exact time I do this activity: .....



The exact time I do this activity: .....

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The exact time I do this activity: .....



The exact time I do this activity: .....

Now list what you did in order of priority !!

Self - check	Teacher's comments
☐ I finished the task.	
☐ I checked my work.	

How did I do (circle):







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2nd Grade Mathematics Lesson Plan: Exploring Flat Shapes and Geometric Solids

General Information

- **Course:** Mathematics
- **Grade Level:** 2nd Grade
- **Unit:** Geometry
- **Topic:** Flat Shapes and Solid Bodies (Exploring the World of Shapes and Geometric Solids!)
- **Duration:** 40 + 40 Minutes (2 Lesson Hours)
- **Lesson Type:** New Knowledge Acquisition and Application

Part I: Educational Framework & Objectives

Lesson Aim:

To enable students to identify structural properties of plane shapes (sides and corners), recognize 3D geometric solids, and establish part-to-whole relationships between solid faces and 2D shapes.

Target Learning Outcomes (Curriculum Standards):

- **O1:** States and counts the number of sides and corners of plane shapes (triangle, square, rectangle, pentagon, hexagon).
- **O2:** Names basic 3D solid bodies (cube, cuboid, cylinder, sphere, pyramid, cone) and matches them with real-world objects.
- **O3:** Matches the faces of 3D solids with corresponding 2D plane shapes and identifies surface properties.
- **O4:** Identifies geometric patterns and finds the odd one out among 2D and 3D shapes.

Part II: Differentiation & Scaffolding Strategy

Learning Tier	Pedagogical Support & Adaptations
Support (Scaffolding)	• Provide physical wooden or plastic geometric blocks for students to feel corners, edges, and flat faces.

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Learning Tier	Pedagogical Support & Adaptations
	• Use colored pencils to trace over sides and highlight corners to prevent double counting.
Core (Grade Level)	• Complete tasks sequentially: counting sides/corners, matching real-life items to 3D solids, and tracing cube faces.
Challenge (Extension)	• Ask students to explain why the number of sides and corners are equal in plane polygons. • Have students trace bases of different solids (like cylinders or pyramids) and label the resulting 2D shapes.

Part III: Instructional Execution Plan (Table Model)

Stage	Outcomes	Pedagogical Content & Teacher Script	Methods & Interaction	Materials & Tools	Duration
1. Organization & Warm-up	-	Classroom order, readiness check, and greeting.	Interactive Conversation	Classroom Setup	5 min
2. Engagement & Hook	-	Show a basketball, a die, and a refrigerator visual. Ask: *"Do these objects feel flat like paper, or do they take up space?"*	Guided Inquiry (Q&A)	Realia / Classroom Objects	5 min
3. Topic & Aim	-	Introduce topic: *"Today we are going to explore the world of flat shapes and geometric solids!"*	Direct Lecture	Board / Anchor Visuals	5 min

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Stage	Outcomes	Pedagogical Content & Teacher Script	Methods & Interaction	Materials & Tools	Duration
4. Activating Prior Knowledge	O1	Recall basic 2D shapes: *"How many corners does a triangle have?"*	Brainstorming	2D Shape Visuals	5 min
5. Explicit Teaching & Demonstration	O1, O2	Examine 3D solids (cube, cuboid, cylinder, pyramid, cone). Demonstrate how a flat face of a cube forms a square when pressed on paper.	Demonstration & Hands-on Modeling	Geometric Models & Wooden Shapes	30 min
6. Performance & Guided Practice	O1, O2, O3, O4	Distribute worksheet. Students complete Task 1 (Sides/Corners), Task 2 (Solids & Patterns), and Task 3 (Exploring Faces).	Formative Individual Practice	Worksheet & Lead Pencils	20 min
7. Closure & Self-Evaluation	O3	Summarize key differences between 2D and 3D shapes. Students fill out their smiley self-evaluation rubric.	Reflection & Summary	Self-Evaluation Section	10 min

Part IV: Associated Worksheet Details & Scaffolding Breakdown

Worksheet Material: **"2nd Grade - Worksheet: Exploring the World of Shapes and Geometric Solids!"** follows a 3-stage progressive structure:

- **Level 1: Let's Get to Know Plane Shapes (Recognition & Counting Level)**
  - **Objective:** Identifying side and corner counts of 2D shapes.
  - **Content:** Writing side and corner counts for Triangle (3/3), Square (4/4), Pentagon (5/5), and Hexagon (6/6).
  - **Pedagogical Function:** Low-cognitive-load warmup to solidify basic polygon properties.
- **Level 2: Matching Geometric Solids & Patterns (Application & Spatial Awareness Level)**
  - **Objective:** Connecting everyday objects to 3D solids and recognizing geometric sequences.

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    - **Content:** Matching real objects (refrigerator to cuboid, die to cube, basketball to sphere), completing shape patterns, and finding the odd one out.
    - **Pedagogical Function:** Reinforces real-world transfer, pattern logic, and 2D vs. 3D discrimination.
- **Level 3: Let's Explore Faces (Production & Projection Level)**
    - **Objective:** Understanding face-to-shape relationships (projection of 3D surfaces onto 2D planes).
    - **Content:** Tracing the square face of a cube, labeling it, and matching 3D solids (cuboid, cylinder, pyramid, cone) to their corresponding flat face shapes (rectangle, circle, triangle).
    - **Pedagogical Function:** Develops spatial projection and structural reasoning.

Part V: Assessment & Verification Framework

- **Formative Assessment:** Monitor accuracy in side/corner counting (Level 1) and object-to-solid line matching (Level 2).
- **Performance Assessment:** Evaluate student ability to draw and identify 2D face projections from 3D solids (Level 3).
- **Self-Evaluation:** Student self-check rubric (😊 Great / 🤔 Need Help / 😟 Hard) at the bottom of the worksheet.

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2nd Grade Mathematics Lesson Plan: Measurement Masters at Work!

General Information

- **Course:** Mathematics
- **Grade Level:** 2nd Grade
- **Unit:** Measurement
- **Topic:** Measurement (Length, Mass, and Liquid Capacity)
- **Duration:** 40 + 40 Minutes (2 Lesson Hours)
- **Lesson Type:** New Knowledge Acquisition and Application

Part I: Educational Framework & Objectives

Lesson Aim:

To enable students to measure and compare real-world objects using non-standard units of length, compare relative mass, and evaluate liquid container capacities.

Target Learning Outcomes (Curriculum Standards):

- **O1:** Performs length measurements using non-standardized units (handspans) and records the count.
- **O2:** Compares and sequences items according to physical mass (lightest to heaviest).
- **O3:** Evaluates liquid measurement tools to determine relative volume and capacity.
- **O4:** Compares multiple items sequentially based on length (shortest to longest).

Part II: Differentiation & Scaffolding Strategy

Learning Tier	Pedagogical Support & Adaptations
Support (Scaffolding)	• Demonstrate proper handspan alignment (stretching from thumb to pinky) directly on desk edges.

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Learning Tier	Pedagogical Support & Adaptations
	• Provide real classroom objects (feather, rock, book, water pitcher) for tactile exploration.
Core (Grade Level)	• Complete worksheet tasks step-by-step: measuring desks, identifying heaviest items, selecting largest capacities, and ordering sequences.
Challenge (Extension)	• Ask students to compare their handspan measurement directly against a pencil length to determine which is longer. • Have students discuss why non-standard handspan counts differ between students for the same desk.

Part III: Instructional Execution Plan (Table Model)

Stage	Outcomes	Pedagogical Content & Teacher Script	Methods & Interaction	Materials & Tools	Duration
1. Organization & Warm-up	-	Establish classroom routines, ensure table readiness, and greet students.	Interactive Conversation	Classroom Setup	5 min
2. Engagement & Hook	-	Hold up a pencil and point to a student desk. Ask: *"Is this pencil longer or your desk? How can we measure it without a ruler?"*	Guided Inquiry (Q&A)	Pencil, Student Desk	5 min
3. Topic & Aim	-	Introduce topic: *"Today we are going to become Measurement Masters and learn how to measure length, mass, and liquids!"*	Direct Lecture	Board / Anchor Visuals	5 min

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Stage	Outcomes	Pedagogical Content & Teacher Script	Methods & Interaction	Materials & Tools	Duration
4. Activating Prior Knowledge	O1	Recall simple comparison concepts: *"How do we know if something is heavy or light? What does shorter or longer mean?"*	Brainstorming	Classroom Objects	5 min
5. Explicit Teaching & Demonstration	O1, O2, O3	Demonstrate handspan measuring on a desk. Hold an apple and a watermelon visual to compare mass. Compare a glass, coffee cup, and pitcher for liquid capacity.	Demonstration & Hands-on Modeling	Realia (Desk, Pitcher, Glass, Objects)	30 min
6. Performance & Guided Practice	O1, O2, O3, O4	Distribute worksheet. Students complete Task 1 (Desk Handspans & Heaviest Fruit), Task 2 (Capacity Matching), and Task 3 (Ordering Length & Mass).	Formative Individual Practice	Worksheet & Pencils	20 min
7. Closure & Self-Evaluation	O1, O2	Summarize non-standard measurement methods. Students complete their smiley self-evaluation rubric.	Reflection & Feedback	Self-Evaluation Section	10 min

Part IV: Associated Worksheet Details & Scaffolding Breakdown

Worksheet Material: **"2nd Grade - Worksheet: Measurement Masters at Work!"** follows a 3-stage progressive structure:

- **Level 1: Let's Measure Length and Mass (Hands-on Measurement Level)**
  - **Objective:** Performing non-standard length measurements and identifying maximum mass.
  - **Content:** Measuring study desk length in handspans (e.g., 4 or 5 handspans) and circling the heaviest fruit (Watermelon).

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    - **Pedagogical Function:** Connects tactile body-based measurement to recorded numbers.
- **Level 2: Capacity and Liquids (Volume Comparison Level)**
    - **Objective:** Evaluating container volume and identifying maximum capacity.
    - **Content:** Comparing a Glass, Coffee Cup, and Pitcher to choose which container holds the most water to fill a bucket fastest (Pitcher).
    - **Pedagogical Function:** Develops mental volume estimation and liquid capacity reasoning.
- **Level 3: Ordering Length and Mass (Sequential Analysis Level)**
    - **Objective:** Ordering multiple objects by length and mass, plus executing direct comparison.
    - **Content:**
        - Ordering length (Shortest to Longest): 1. Pencil, 2. Book, 3. Ruler, 4. Bottle.
        - Ordering mass (Lightest to Heaviest): 1. Feather, 2. Book, 3. Rock, 4. Backpack.
        - Challenge task: Measuring whether handspan or pencil is longer.
    - **Pedagogical Function:** Builds multi-variable comparative sequencing and critical thinking skills.

Part V: Assessment & Verification Framework

- **Formative Assessment:** Check handspan measurement technique during desk activity and verify fruit mass selection.
- **Performance Assessment:** Evaluate sequential ordering accuracy for length and mass lists in Level 3.
- **Self-Evaluation:** Student self-check rubric (😊 Great / 🤔 Need Help / 😟 Hard) at the bottom of the worksheet.

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Teacher's Notes

Class: 2nd Grade
Topic: Introduction to Division – Grouping and Sharing in the number range up to 20 (The Pirate Island: Learning to Group and Share!)
Learning Objectives:

- Understand and apply the difference between the two basic concepts of division—fair sharing and grouping into equal-sized groups—in an action-oriented way.
- Translate simple mathematical word problems (math stories) into formal division equations using the division sign (:) and solve them.
- Solve basic division problems using the inverse operation (multiplication) and precisely transfer mathematical distribution results into a creative drawing.

Worksheet Created By: GEDONSOFT GMBH

TASK 1: Fair Distribution: Sharing or Grouping?	Instruction for the Student	Expected Answer	Focus of Assessment / Observation	Materials / Resources	Methodological Recommendations
	"Look closely at the math stories on the island. Decide whether we need to distribute objects fairly among recipients (sharing) or divide them into fixed groups (grouping). Check the correct box."	a) SHARING: [X] YES, we are sharing – one for you, one for you… b) GROUPING: [X] YES, we are grouping – we determine the number of groups.	Can the student correctly identify the proper concept of division (sharing or grouping) based on the problem description and visual support (drawing lines vs. circling)?	Student worksheet, colored pencils	Easier: For students who cannot grasp the difference purely visually, real objects (e.g., 10 wooden bones or tokens) can be given to physically distribute among two play figures. Challenging: Students can be asked to verbally tell a short math story of their own for one of the two tasks.

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TASK 2: Translating Math Stories	Instruction for the Student	Expected Answer	Focus of Assessment / Observation	Materials / Resources	Methodological Recommendations
	"Translate the pirate stories into a proper division problem (:). Use your counting tokens at your desk to find the correct answer!"	a) PIRATE GOLD: 16 ÷ 4 = 4 b) MARBLE BOXES: 20 ÷ 5 = 4	Is the student able to correctly enter the numerical values from the text into the structure of a division equation? Have they mastered basic division techniques in the number range up to 20?	Student worksheet, pencil, counting tokens	Easier: The division sign ($:$) can be explicitly explained on the chalkboard once more as a symbol for "sharing/grouping". Challenging: Ask the students what problem "a" would look like if there were 20 gold coins instead of 16 to check their computational flexibility

TASK 3: Tricky Division Riddle and Your Divisor Monster	Instruction for the Student	Expected Answer	Focus of Assessment / Observation	Materials / Resources	Methodological Recommendations
	"First, solve the mathematical division riddle. Next, calculate the exact number of eyes per head and the total number of arms for your divisor monster, and then draw it in the large free space!"	Division Riddle: Answer: I was the number 16, because 8 × 2 = 16. Monster Rules: Eyes per head: 18 ÷ 3 = 6 eyes Total arms: 10 ÷ 2 = 5 arms	Can the student use the inverse operation (multiplication) to solve a division riddle backwards? Do they successfully transfer the calculated values (18 ÷ 3 = 6 and 10 ÷ 2 = 5) into	Student worksheet, pencil, eraser, and colored pencils	Easier: If drawing 6 eyes across 3 heads is confusing, the teacher can draw 3 circles on the chalkboard beforehand and distribute 18 dots into them one by one to illustrate the principle. Challenging: Add an optional bonus task: "Your monster also has legs. The number of legs

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		Drawing: A monster with 3 heads. Each head has exactly 6 eyes, resulting in a total of 18 eyes. The monster has exactly 5 arms within the designated drawing area.	a creative monster drawing without errors?		corresponds to the result of

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Name: Class: Date:

Pirate Island: Learning to Share and Divide!

TASK 1: Fair Distribution – Sharing or Grouping?	What do I need to do?	What can I use to solve this task?
	Look carefully at the math stories on the island. Decide whether we need to share objects fairly among recipients (sharing) or put them into equal groups (grouping). Tick the correct box.	Colored pencils





a) SHARING: 10 bones are shared fairly between 2 dogs. Draw lines!
What are we doing here?
[ ] YES, we are SHARING (sharing) – one for you, one for you...
[ ] NO, we are making equal groups.

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b) GROUPING: 15 fish need to go into aquariums. Exactly 5 fish go into each tank. Circle groups of 5!
What are we doing here?
[ ] YES, we are GROUPING (grouping) – we are finding the number of groups.
[ ] NO, we are giving one object to each recipient one after another.

Self - check	Teacher's comments
☐ I finished the task.	
☐ I checked my work.	

How did I do (circle):





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TASK 2: Translate Math Stories (Using the division symbol [:])	What do I need to do?	What can I use to solve this task?
	Translate the pirate stories into proper division problems (:). Use your counters to find the correct answer!	Pencil.



a) PIRATE GOLD: 16 gold coins are shared fairly among 4 pirates.
How many coins does each pirate get?
_____ : _____ = _____

b) MARBLE BOXES: 20 marbles are being packed. Exactly 5 marbles fit in each bag.
How many bags do you need?
_____ : _____ = _____

Self - check	Teacher's comments
☐ I finished the task.	
☐ I checked my work.	

How did I do (circle):

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TASK 3: Tricky Division Puzzle and Your Divider Monster	What do I need to do?	What can I use to solve this task?
	First solve the math division puzzle. Then use the big space to draw your very own Divider Monster according to the exact math rules!	Pencil, eraser, and colored pencils.

1. I am a number. When you divide me by 2 (share me fairly in half), the result is exactly 8. What number am I?

   Answer: I was the number _____



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Now it's your turn!

Rules for your Monster:

- **Calculate the number of EYES:** The monster has 18 eyes in total. They are shared completely fairly among 3 heads. Draw the monster! Each head has exactly _____ eyes. (Hint: Calculate 18 : 3)
- **Calculate the number of ARMS:** Draw the monster with a number of arms that exactly matches the result of 10 : 2. Your monster has exactly _____ arms.

Self - check	Teacher's comments
☐ I finished the task.	
☐ I checked my work.	

How did I do (circle):





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Teacher's Notes – 2nd Grade • 1. Worksheet (Addition & Subtraction with Regrouping)

Class: 2nd Grade
Topic: Addition and Subtraction with Regrouping – Bundling and Unbundling (Welcome to the Tens Exchange Bank!)
Learning Objectives:
🎬 🎬 Recognize whether regrouping (bundling for addition / unbundling for subtraction) is necessary in a mathematical operation within the number range up to 100.
🎬 Enter two-digit numbers correctly under one another into a place value chart (tens and ones) and perform the written calculation procedure with carrying or borrowing flawlessly.
🎬 Solve mathematical word riddles by logical reverse calculation and independently apply operations with regrouping to determine structural requirements for a drawing.
Worksheet Created By: GEDONSOFT GMBH

TASK 1: The Exchange Control: Do We Need to Bundle or Unbundle?	Instruction for the Student	Expected Answer	Focus of Assessment / Observation	Materials / Resources	Methodological Recommendations
	"Look closely at the addition and subtraction problems. Check the ones places very carefully and cross the box to show if you need to go to the Tens Exchange Bank to swap tens rods for ones cubes (or vice versa)."	a) PLUS: 24 + 8 → [X] YES, we must bundle! b) MINUS: 37 − 5 → [X] NO, no swap needed. c) MINUS: 42 − 6 → [X] YES, we must unbundle!	Can the student determine in advance whether regrouping takes place purely by analyzing the ones digits? Do they recognize the difference between bundling (addition over 9) and unbundling	Student worksheet, colored pencils.	Easier: For students who need visual support, Dienes blocks (tens rods and ones cubes) can be provided to physically experience the bundling and unbundling process. Challenging: Students can be asked to formulate their own explanation for each sub-task (e.g., "For c, I have to unbundle because 2 < 6.").

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			(subtraction when the top ones digit is smaller)?		

TASK 2: Calculating in the Place Value Chart	Instruction for the Student	Expected Answer	Focus of Assessment / Observation	Materials / Resources	Methodological Recommendations
	"Write the numbers correctly under one another in the place value charts. For the addition problem, do not forget to write the small carried ten in the thinking box, and for the subtraction problem, borrow 10 ones from your tens neighbor in good time!"	a) BUNDLING: 26 + 7 = 33 Thinking box for the carry-over: [1] Ten Result: [3] [3] b) UNBUNDLING: 43 − 8 = 35 Thinking box for the "borrowing": [1] Ten is unbundled into 10 ones Remaining tens: [3]	Does the student adhere to the place value structure (ones under ones, tens under tens)? Do they use the thinking boxes correctly to accurately account for the carried or borrowed ten?	Student worksheet, pencil	Easier: The place value charts can be color-coded (e.g., tens in blue, ones in red) to facilitate structured alignment. Challenging: Students can design their own calculation problem that results in a three-digit number (e.g., 95 + 8).

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		Result: [3] [5]			

TASK 3: Tricky Number Riddle and Your Exchange Monster	Instruction for the Student	Expected Answer	Focus of Assessment / Observation	Materials / Resources	Methodological Recommendations
	"First, solve the mathematical number riddle. Next, using the two calculation problems with regrouping, calculate the exact number of eyes and teeth for your exchange monster and draw it in the large space! Map your monster precisely according to the calculated numbers!"	Number Riddle 32 - 9 = 23 → The number we are looking for is 23 Monster Rules Eyes: 15 + 7 = 22 eyes Teeth: 22 - 6 = 16 teeth Drawing Instructions: Draw a fun/scary monster inside the given frame with exactly 22 eyes and exactly 16 teeth.	Is the student able to solve a riddle using the inverse operation (subtraction instead of addition)? Can they independently apply the calculation methods from Task 2 in their head or as a side calculation and translate the result exactly into a creative product?	Student worksheet, pencil, eraser, and colored pencils	Easier Version: If 22 eyes are too many to draw, students can arrange the eyes in groups of two (pairs) or use simple guiding dots for the eyes. Challenging Version (Bonus Rule): Add legs to your monster! The number of legs = 40 - 5 (Unbundle/subtract in your head!)

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 **Name:**  **Class:**  **Date:**

Welcome to the Place Value Trading Bank!

TASK 1: Trading Check – Do we bundle or unbundle?	 **What do I need to do?**	 **What can I use to solve this task?**
	Look carefully at the addition and subtraction problems. Do you need to go to the Place Value Trading Bank? Check the ones place carefully and tick the correct answer.	Colored pencils

a) **ADDITION:** **24 + 8** → Do we have more than 9 ones? → Do we need to trade 10 ones for 1 ten rod?
[ ] **YES**, we must **bundle**! [ ] **NO**, no trading needed.

b) **SUBTRACTION:** **37 - 5** → Are there enough ones? → Do we need to trade 1 ten rod for 10 ones?
[ ] **YES**, we must **unbundle**! [ ] **NO**, no trading needed.

c) **SUBTRACTION:** **42 - 6** → Are there enough ones? → Do we need to trade 1 ten rod for 10 ones?
[ ] **YES**, we must **unbundle**! [ ] **NO**, no trading needed.

Self - check	**Teacher's comments**
☐ I finished the task.	
☐ I checked my work.	

How did I do (circle):

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TASK 2: Calculating in the Place Value Chart (Addition & Subtraction with Regrouping)	 **What do I need to do?**	 **What can I use to solve this task?**
	Write the numbers correctly in the place value charts. Remember to carry the ten when adding and to borrow 10 ones from your tens neighbor when subtracting!	Pencil.

a) **BUNDLING (Addition):**

26 + 7 = _____

text

```
[ T ]  [ O ]
   2      6
+          7
-----------------
 Carry Box: [ ]
-----------------
  [  ]   [  ]
```

b) UNBUNDLING (Subtraction):

43 - 8 = _____

```
[ T ]  [ O ]
   4      3
-          8
------------------
      Borrow Box: [ ]
------------------
  [  ]   [  ]
```

Self - check	Teacher's comments
☐ I finished the task.	
☐ I checked my work.	

How did I do (circle):





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TASK 3: Tricky Number Riddle & Your Trading Monster	 **What do I need to do?**	 **What can I use to solve this task?**
	Solve the number riddle.	Pencil, eraser, and colored pencils.

1. I am a two-digit number. When you add 9 to me, you must bundle. My new number has exactly 3 tens and 2 ones (32).
What number was I at the beginning?
Answer: I was the number _____

Self - check	Teacher's comments
☐ I finished the task.	
☐ I checked my work.	

How did I do (circle):





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Lesson Plan

Addition and Subtraction with Regrouping (Bundling and Unbundling)

GRADE: 2nd Grade

LEARNING AREA: Arithmetic (Numbers and Operations)

SUBJECT: Mathematics

TOPIC: Addition and Subtraction with Regrouping (Bundling and Unbundling)

LESSON TYPE: Knowledge Acquisition and Application

DURATION: 40 + 40 minutes (2 Lesson Periods)

Part I: Learning Objectives and Competences

- **Lesson Goal:** Students understand the principle of regrouping during addition (bundling 10 ones into 1 ten) and subtraction (unbundling 1 ten into 10 ones) using place value charts and visual learning materials. They can transfer these algorithms to two-digit numbers and apply them confidently.
- **Operationalized Learning Objectives (Learning Outcomes):**
  - **H1:** Students recognize when a regrouping step is necessary (when the sum of the ones is greater than 9, or when the top ones digit is smaller than the bottom ones digit).
  - **H2:** Students perform addition with regrouping by exchanging 10 ones cubes for 1 tens rod ("bundling") and correctly writing down the carryover.
  - **H3:** Students perform subtraction with regrouping by exchanging 1 tens rod for 10 ones cubes ("unbundling" / "borrowing").
  - **H4:** Students solve two-step math riddles and apply the learned regrouping method to mathematical brain teasers without errors.

Part II: Didactic-Methodical Alignment

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- **Methods and Techniques:** Teacher Exposition, Guided Classroom Discourse (Question-Answer), Tactile Demonstration (Working with Dienes Base-Ten blocks / place value blocks), Gamification (The Game: "Welcome to the Place Value Trading Bank!").
- **Teaching Materials and Media:** Dienes materials (tens rods and ones cubes), magnetic place value chart for the blackboard, colored chalk/markers, exercise worksheets.
- **Social Forms:** Frontal Teaching (Plenary for visual introduction), Pair Work (Exchange games at their seats), and Individual Work.

Part III: Lesson Procedure (Table Model)

Phase	Objective	Content	Method	Media	Social Form	Duration
1. Introduction & Organization	—	Secure classroom order. Students prepare their math notebooks, pencils, and rulers.	Discussion	—	F	5 Min
2. Motivation & Lead-in	—	The teacher presents a math story: "Monkey Chief Leo has 18 bananas, and his sister gives him 5 more. He wants to pack them into baskets of 10. How many baskets and single bananas does he have?"	Storytelling / Problem Posing	Story / Blackboard illustration	F	5 Min
3. Goal Orientation	—	Announcement of today's mission: We crack the secret of the "Tens Exchange" for large plus and minus tasks so that we can calculate two-digit numbers lightning-fast.	Teacher Exposition	—	F	5 Min

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Phase	Objective	Content	Method	Media	Social Form	Duration
4. Activating Prior Knowledge	H1	Short choral mental math: Complementing up to 10 (e.g., ...) and simple addition/subtraction without regrouping (e.g., ..., ...) to consolidate place values (Tens and Ones).	Prompt / Mental Math	Place value cards	F	5 Min
5. Acquisition Phase	H1, H2, H3	**1. Plus (Bundling):** ... The children lay out 5 ones and 7 ones. That makes 12 ones. 10 of them are exchanged for a tens rod ("Exchange Bank"). The carryover (1) is noted down. **2. Minus (Unbundling):** ... You cannot take 5 ones from 2 ones. We take a tens rod and exchange it into 10 ones. Now we calculate ...	Demonstration & Tactile Exploration (Watch and Repeat)	Dienes blocks, magnetic place value chart	F / P (Pairs)	30 Min
6. Consolidation / Application	H3, H4	Students work on the prepared worksheet "Welcome to the Place Value Trading Bank!". The exercises are structured from easy to difficult.	Independent Application	Worksheets	I	20 Min

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Phase	Objective	Content	Method	Media	Social Form	Duration
7. Conclusion & Homework	—	Summary: The teacher shows a task on the blackboard. The children shout in chorus "Bundle!" (for plus) or "Unbundle!" (for minus). Homework: Solve the 4 exchange tasks on the back of the sheet.	Summary	Blackboard	F	10 Min

Abbreviations: F: Frontal (Whole Class), I: Individual (Independent Work), P: Pair Work, G: Group Work.

Part IV: Template for Accompanying Material (Measurement & Assessment)

📄 Draft for the Worksheet (Worksheet): "Welcome to the Place Value Trading Bank!"

This worksheet is structured in three difficulty tiers according to the principle "from easy to difficult":

TIER 1: Recognition (Easiest)

- **Task:** Look closely at the math problems. Do you need to go to the Exchange Bank? Check the box.
  - **24 + 8** Do we need to exchange 10 ones for 1 ten? [ ] YES or [ ] NO
  - **37 - 5** Do we need to exchange 1 ten into 10 ones? [ ] YES or [ ] NO
  - **42 - 6** Do we need to exchange 1 ten into 10 ones? [ ] YES or [ ] NO

TIER 2: Matching and Calculating (Medium)

- **Task:** Write the numbers correctly into the place value chart. Do not forget the little carryover-ten in the thinking-box!
  - **a) Calculate (Bundling):**

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(Write T and O underneath each other, bundle the ones!)

- **b) Calculate (Unbundling):**

  (Get 10 ones from your tens neighbor!)

TIER 3: Designing and Puzzles (Hard)

- **Task:** Solve the tricky number riddle and draw your very own Exchange Monster!
  - **Number Riddle:** I am a two-digit number. If you add 9 to me, you have to bundle, and my new number has exactly 3 tens and 2 ones. Which number was I at the beginning?
    - **Answer:** I was the number _____
  - **Creative Part:** Draw your personal "Exchange Monster" in the empty field next to it with the following conditions:
    - The monster has as many eyes as the result of ... *(Tip: Bundle first!)*
    - Draw a number of teeth for the monster that corresponds exactly to the equation ...

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Lesson Plan

Pirate Island: Learning to Share and Divide!

GRADE: 2nd Grade

LEARNING AREA: Arithmetic (Numbers and Operations)

SUBJECT: Mathematics

TOPIC: Introduction to Division: Fair Sharing and Grouping into Fixed Sizes

LESSON TYPE: Knowledge Acquisition and First Application

DURATION: 40 + 40 minutes (2 Lesson Periods)

Part I: Learning Objectives and Competences

- **Lesson Goal:** Students understand the basic principle of division. Through hands-on activities and drawings, they can differentiate between fair sharing ("one for you, one for you") and grouping (packing into fixed group sizes). They can translate math stories into division equations using the division sign :.
- **Operationalized Learning Objectives (Learning Outcomes):**
  - **LO1:** Students differentiate between fair sharing and grouping based on concrete math stories.
  - **LO2:** Students use counters (math counters) or drawings to represent division tasks and determine the result.
  - **LO3:** Students write division equations mathematically correct using the division sign :.
  - **LO4:** Students solve inverse riddles (halving/doubling) and creatively implement mathematical results into a structural model (The Division Monster).

Part II: Didactic-Methodical Alignment

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- **Methods and Techniques:** Storytelling (The Pirate Island), Classroom Discourse (Question-Answer), Tactile Demonstration (Working with counters), Gamification (The Game: "The Fair Pirates").
- **Teaching Materials and Media:** Counters for every student, picture cards of pirates, dogs, bones, and gold coins for the blackboard, worksheets.
- **Social Forms:** Frontal Teaching (Introduction in the plenary), Pair Work (Arranging counters), Individual Work (Worksheet).

Part III: Lesson Procedure (Table Model)

Phase	Objective	Content	Method	Media	Social Form	Duration
1. Introduction & Organization	—	Secure classroom order. Students prepare pencils, erasers, colored pencils, and counters.	Discussion	—	F	5 Min
2. Motivation & Lead-in	—	Pirate Story: "Captain Hook found 16 gold coins on Pirate Island and wants to share them fairly among his 4 pirates. How do we proceed so that nobody gets angry?"	Storytelling / Problem Posing	Picture cards on the blackboard	F	5 Min
3. Goal Orientation	—	Announcement of the journey to "Pirate Island". Today we learn fair sharing and grouping, and we get to know the new math symbol: the division sign :.	Teacher Exposition	—	F	5 Min
4. Activating Prior Knowledge	LO1	Short review: What does "fair halving" mean? (e.g., sharing 10	Prompt / Mental Math	Counters	F	5 Min

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Phase	Objective	Content	Method	Media	Social Form	Duration
		marbles between 2 children – everyone gets the same amount).				
5. Acquisition Phase	LO1, LO2, LO3	**1. SHARING:** 10 bones are shared fairly between 2 dogs. Lay them out one by one: "one for you, one for you..." Every child uses counters at their seat. Result: 5 bones per dog. **2. GROUPING:** 15 fish need to go into aquariums. Exactly 5 fish go into each tank. We group them into sets of 5 and count the aquariums. Result: 3 groups. Introduction of the notation: 16 : 4 = 4 and 20 : 5 = 4.	Demonstration & Tactile Exploration	Counters, Blackboard illustrations	F / P	30 Min
6. Consolidation / Application	LO3, LO4	Students work on the worksheet "Pirate Island: Learning to Share and Divide!". The exercises are structured in three difficulty tiers.	Independent Application	Worksheets	I	20 Min

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Phase	Objective	Content	Method	Media	Social Form	Duration
7. Conclusion & Homework	—	Summary: One child explains the difference: In *sharing*, we give an object to each recipient one after another; in *grouping*, we look for the total number of complete groups. Homework: Finish drawing the Division Monster on the worksheet.	Summary	Blackboard / Worksheet	F	10 Min

Abbreviations: F: Frontal (Whole Class), I: Individual (Independent Work), P: Pair Work.

Part IV: Accompanying Material

📄 Accompanying Worksheet: "Pirate Island: Learning to Share and Divide!"

TIER 1: Fair Distribution: Sharing or Grouping? (Easy)

- **a) SHARING:** 10 bones are fairly distributed between 2 dogs. Draw lines! What are we doing here?
  - [X] **YES**, we are **SHARING** – one for you, one for you...
  - [ ] **NO**, we are packing fixed group sizes.
- **b) GROUPING:** 15 fish need to go into aquariums. Exactly 5 fish go into each tank. Circle groups of 5! What are we doing here?
  - [X] **YES**, we are **GROUPING** – we are looking for the number of groups.
  - [ ] **NO**, we give each recipient one object after another.

TIER 2: Translating Math Stories (Medium)

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- **a) PIRATE GOLD:** 16 gold coins are shared fairly among 4 pirates. How many coins does each pirate get?
  - **Equation:** 16 : 4 = 4
- **b) MARBLE BOXES:** 20 marbles are being packed. Exactly 5 marbles fit into each bag. How many bags do you need?
  - **Equation:** 20 : 5 = 4

TIER 3: Tricky Division Riddle and Your Division Monster (Hard)

1. **Number Riddle:** I am a number. If you divide me by 2 (halve me fairly), my result is exactly 8. Which number am I?
   - **Answer:** I was the number **16**
2. **Creative Part (Rules for your Monster):**
   - **EYES:** The monster has a total of 18 eyes. They are distributed absolutely fairly across 3 heads. Draw the monster! Each head has exactly 6 eyes (because 18 : 3 = 6).
   - **ARMS:** Draw a number of arms for the monster that corresponds exactly to the result of the equation 10 : 2. Your monster has exactly 5 arms.

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Teacher's Notes

Grade: 2
Topic: Numbers up to 100: Counting, writing, comparing
Learning objectives: Reinforcing skills in counting forward and backward; reinforcing knowledge of two-digit numbers as the sum of ones and tens; practicing writing and comparing numbers (up to 100); strengthening students' logical thinking
The worksheet was designed by: Asociacia Dyslexia – Bulgaria

Level1	Instruction for a student	Expected answer	Assessment / observation focus	Materials / Resources	Methodological recommendations
	• Listen carefully - I will dictate some numbers to you. • Write down the numbers you hear, one after the other, separating them with a comma. • Copy down the numbers that are greater than 36. • Copy down the numbers that are less than 46.	•The student understands the condition and the given example. •Correctly writes down the dictated numbers. •Correctly determines the numbers greater than the given number. •Correctly	The teacher observes: • Did the student understand the task correctly? • Did (s)he carefully examine and understand the given example. • Is (s)he able to maintain the necessary concentration. • Is (s)he able to	•A pencil)or a pen) •An eraser •The worksheet •List of numbers (from 0 to 100) that the teacher will dictate	• Give the instructions one by one - wait for the students to complete one action before giving the instruction for the next. • Study the given example together with the students. • Dictate the numbers (10-12 numbers randomly selected between 0 and 100) at a steady pace, with a 3-4 second pause between the numbers. • Explain to the children that a number with a larger tens

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		determines the numbers less than the given number.	work independently. ● Is (s)he able to correctly write down the dictated numbers at the required pace. ● Does (s)he understand the concepts of "greater than", "less than"; ● Can (s)he correctly relate the numbers in the group of "greater than" / "less than" a given number.		digit is larger. If two numbers have the same tens digit, then the number with a larger units digit is larger. ● Provide enough time to complete the task. ● Help students who are having difficulty with leading questions - How many tens does the first number have? And the second? Which has more tens? So which number is larger? etc.

Level 2	Instruction for a student	Expected answer	Assessment / observation focus	Materials / Resources	Methodological recommendations
	You are now at level 2. Here you have to solve two tasks: 2A/ and 2B/. **Task 2A/**. 1. Look carefully at the	● The student correctly decodes the picture puzzles and writes down the	The teacher observes: ● Does the student understand the instructions? ● Is (s)he able to	● A pencil (or a pen) ● An eraser ● The worksheet	● Give the instructions one at a time – wait for the students to complete one action before giving the instruction for the next. ● Revise the meaning of the

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	pictures – each animal corresponds to a different number. 2. Look at the pattern. 3. Decipher the pictograms by replacing the picture with the corresponding number. 4. Write down the resulting numbers. 5. Plot the resulting numbers on the number line, starting from the smallest to the largest. B/ 1. Look carefully at the pattern. 2. Solve the new pictograms and write down the numbers. 3. Compare them using the signs <, >, =. 4. Check if you worked correctly	corresponding two-digit numbers. ● Understands the meaning of the number depending on its place in the number. ● Correctly determines the units and tens. ● Correctly arranges the numbers on the number line. ● The student correctly compares the numbers and uses the appropriate comparison symbols.	maintain the necessary concentration. ● Can (s)he work independently? ● Is the student aware of the meaning of numbers depending on their place in the number? ● Does (s)he understand the concepts of "units" and "tens". ● Can (s)he correctly determine the units and tens in the composition of a number? ● Can (s)he compare numbers by size and arrange them correctly in ascending order. ● Can (s)he correctly compare numbers and use comparison		concepts of "units" and "tens" and how the same digit can mean a different quantity depending on its place in the number. ● Introduce the students to the concept of "hundreds" as a group of ten tens. ● Study the given example together with the students. ● Provide enough time to complete the task. ● If a student is having difficulty working independently, remind them of the concepts or help them with guiding questions: Which number corresponds to … (the certain picture)? What will the number written with these digits look like? etc. ● Give students who are having difficulty the opportunity to ask for "help from a friend".

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			symbols.		

Level 3	Instruction for a student	Expected answer	Assessment / observation focus	Materials / Resources	Methodological recommendations
	In this task, you don't need to calculate, just think using your logic. ● Study the example carefully. ● Look at the numbers and think - how are the two operations similar; how are they different. ● Remember: • when we add a larger number to the same number, the result will be larger; • when we subtract a larger number from the same number, the result will be smaller; • the sum of two numbers is always greater than their difference.	● The student understands the meaning of the actions addition and subtraction; ● (S)He is aware that when (s)he swaps the places of the two addends, the result does not change; ● (S)He is aware that the sum of two numbers is greater than their difference; ● (S)He understands that when we add a larger number to the same number, we will get a larger sum, and	The teacher observes: ● Does the student understand the instructions? ● Is (s)he able to maintain the necessary concentration? ● Is (s)he able to work independently? ● Is the student aware of the meaning of the operations of addition and subtraction? ● Can (s)he handle logical tasks requiring knowledge of basic rules of addition and	●A pencil (or a pen) ●An eraser ● The worksheet	● Give the instructions one by one – wait for the students to complete one action before giving instructions for the next. ● Revise the meaning of the concepts of "units" and "tens" and how the same digit can mean a different quantity depending on its place in the number. ● Study the given example together with the students. ● Before the students start the task, look at a few examples together 1. Write two two-digit numbers on the board, one with more tens than the other. 2. Point out to students that the number that contains more tens is larger; 3. Write on the board two

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		when we subtract a larger number, we will get a smaller difference.	subtraction? ● Can (s)he correctly compare numbers (determine which is greater and which is less); ● Can (s)he correctly use symbols for comparison?		two-digit numbers with the same number of tens, but with a different number of ones. 4. Point out to students that in this case the number that has more ones is larger. ● Provide enough time to complete each task. ● If a student is having difficulty doing it on their own, remind them of the concepts or help them with guiding questions: Which number has more tens/ones?, etc. ● Give students who are having difficulty the opportunity to ask for "help from a friend."

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Name: Grade: Date:

Write. Order. Decode. Compare.

Level 1	What do I need to do?	What can I use to solve this task?
	1. Listen carefully to the teacher – (s)he will dictate numbers. 2. Write down the numbers one after the other. 3. Copy down the numbers that are greater than 36. 4. Copy down the numbers that are less than 46.	• A pen • A pencil • An eraser • Worksheet

EXAMPLE:

1. Listen and write: **15, 9, 58, ...**
2. Numbers greater than 9: **15, 58, ...**
3. Numbers less than 58: **9, 15, ...**

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1. Listen and write:

.....

.....

2. Copy the numbers that are greater than **36:**

.....

3. Copy the numbers that are less than **46**:

.....

Self - check	Teacher's comments
☐ I finished the task.	
☐ I checked my work.	

How did I do (circle):







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Level 2	What do I need to do?	What can I use to solve this task?
	A/ 1. Look carefully at the pictures - each animal corresponds to a different digit. 2. Decode the pictograms by replacing the picture with a digit. 3. Write down the resulting numbers. 4. Plot the resulting numbers on the number line, starting from the smallest to the largest. Б/ 1. Decode the pictograms and write down the numbers. 2. Compare the numbers using the symbols <, >, =. 3. Check if you have worked correctly.	• A pencil • An eraser

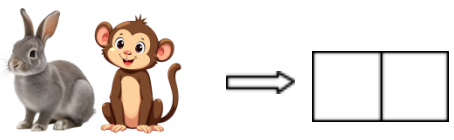


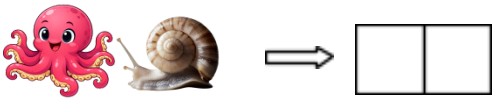
1	2	3	4	5	6	7	8	9

EXAMPLE A/:

1. Decode and write:  ⇨39

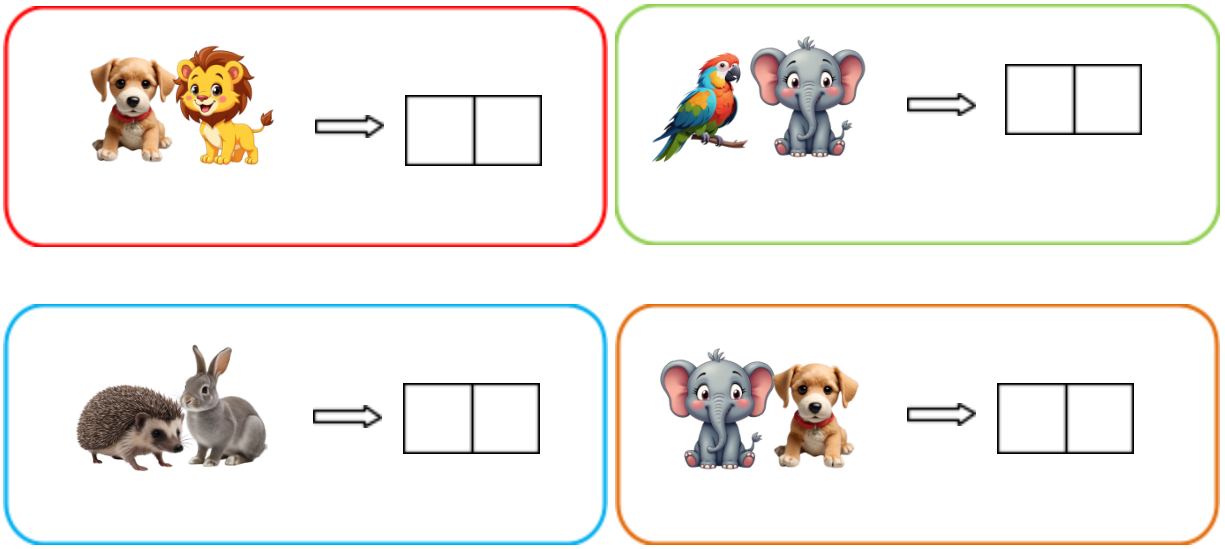
2. Plot the resulting numbers on the number line, starting from the smallest to the largest.

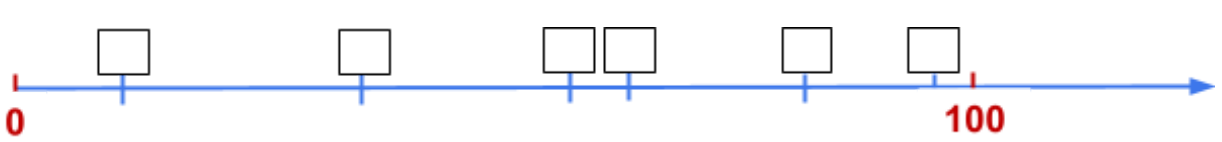




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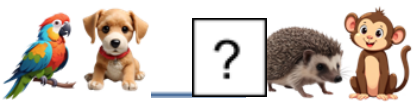
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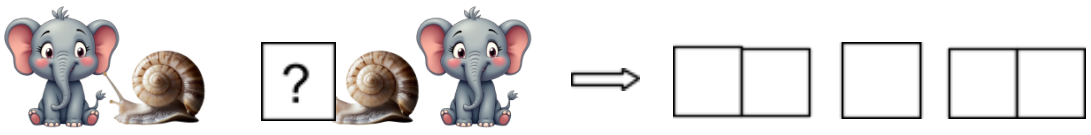


EXAMPLE B/:

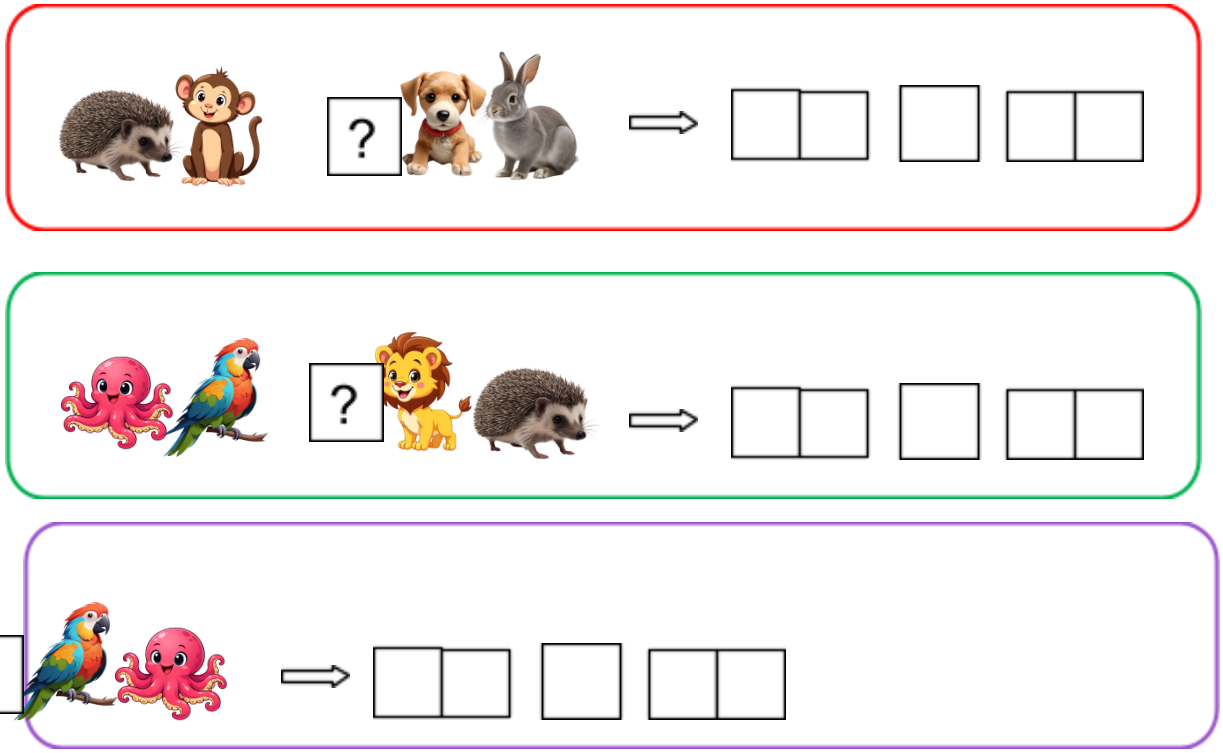
Decode and compare:







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Self - check	Teacher's comments
☐ I finished the task.	
☐ I checked my work.	

How did I do (circle):





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Level 3	**What do I need to do?**	**What can I use to solve this task?**
	In this task, you do not need to calculate, just think using your logic. 1. Study carefully the example. 2. Look at the numbers and think – how are the two actions similar; how are they different. 3. Remember: ● when we add a larger number to the same number, the result will be larger; ● when we subtract a larger number from the same number, the result will be smaller; ● the sum of two numbers is always greater than their difference.	● A pen or a pencil ● An eraser

EXAMPLE:

28 + 17	?	28 + 19	⇨	28 + 17	<	28 + 19
28 - 17	?	28 - 19	⇨	28 + 17	>	28 + 19
28 + 19	?	28 - 19	⇨	28 + 19	>	28 - 19

74 + 21	?	21 + 74	⇨	74 + 21		21 + 74

36 + 39	?	32 + 39	⇨	36 + 39		32 + 39

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44 - 18	?	18 + 44	⇨	44 - 18		18 + 44
63 - 37	?	63 - 39	⇨	63 - 37		63 - 39
55 + 24	?	55 - 24	⇨	55 + 24		55 - 24
28 + 41	?	41 - 28	⇨	28 + 41		41 - 28

Self - check	Teacher's comments
☐ I finished the task.	
☐ I checked my work.	

How did I do (circle):





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Teacher's Notes

Grade: 2

Topic: Numbers up to 100: Units, Tens, Hundreds

Learning objectives: Students to recall the concepts of "units" and "tens"; understand the concept of "hundreds" and learn that a hundred is made up of one hundred units or ten tens; correctly determine the value of the digit depending on its place in the number; read and write numbers up to 100 correctly; be able to represent them as the sum of hundreds, tens and ones

The worksheet was designed by: Asociacia Dyslexia - Bulgaria

Level 1	Instruction for a student	Expected answer	Assessment / observation focus	Materials / Resources	Methodological recommendations
	1. Write down all the numbers with a tens digit of 7 and a units digit less than 4. 2. Write down all the numbers with a units digit of 3 and a tens digit greater than 5. 3. Write down all the even numbers with the same tens and units' digits. 4. Arrange the numbers from the largest to the smallest. 5. Knowing that 1 ten = 10 ones, and 1 hundred =	• The student understands the task and the given example. • Is aware of the concepts of "greater" and "less"; "even" and "odd" numbers. • Correctly writes two-digit and three-digit numbers. • Knows how to determine units, tens and hundreds.	The teacher observes: • Did the student understand the task correctly? • Did (s)he carefully examine and understand the given example? • Is (s)he able to maintain the necessary concentration. • Is (s)he able to work independently? • Is (s)he aware of the concepts of "units",	• A pencil or a pen • Coloured pencils or pens • An eraser • The worksheet	• Give instructions one at a time – wait for students to complete one action before giving instructions for the next one. • Look at the given examples together with the students and discuss them. • Attract students' attention once again to the ones, tens and hundreds and their place in a number. • Allow enough time to complete the task. • Note that it is important to check before

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	10 tens = 100 units, write down the numbers that have: - 2 tens and 7 units - 9 tens and 3 units - 1 hundred, 4 tens and 5 units - 4 hundreds, 8 tens and 9 units /You can write the digits in different positions using different colours/.	● Knows how to arrange numbers in descending order of magnitude.	"tens", "hundreds", "even and odd numbers"; "greater and less" ● Is (s)he able to follow written instructions. ● Does (s)he work at a good enough pace ● Does (s)he need additional explanations?		moving on to the next task. ● Help students who are struggling with guiding questions: Did you look at the example carefully? If the number is 87, can you tell me how many ones are there? If you have to arrange the numbers in order of magnitude, how will you approach it? etc.

Level 2	Instruction for a student	Expected answer	Assessment / observation focus	Materials / Resources	Methodological recommendations
	In this task you don't need to calculate, just think carefully. Read the statements on each line carefully. Mark the correct answer with **X.**	● The student has understood the task ● Understands the meaning of the digit depending on its place in the number. ● Is aware of the structure of the number (from units, tens, hundreds). ● Understands the relationship	The teacher observes: ● Does the student understand the instructions. ● Does (s)he manage to maintain the necessary concentration. ● Does (s)he know how to work independently? ● Is the student aware of the meaning of numbers depending	● A pencil or a pen ● The worksheet	● Give instructions one at a time – wait for students to complete one action before giving instructions for the next. ● Remind students of the meaning of the concepts "units", "tens" and "hundreds", ● Allow enough time to complete the task. ● If a student is having difficulty doing it on their own, you can review the

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		between hundreds - tens - units and how they are converted into each other. ● Understands the statements and can apply their knowledge to determine whether they are true or false.	on their place in the number. ● Does (s)he understand the concepts of "units" and "tens" and "hundreds" and the relationship between them. ● Does (s)he understand the meaning of the statements and can he/she apply the knowledge to determine their correctness. ● Does (s)he need additional explanations and help to complete the task. ● Does (s)he know how to maintain a steady pace of work.		example again and then use guiding questions to help them. ● Give students who are having difficulty the opportunity to ask for "help from a friend".

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Level 3	Instruction for a student	Expected answer	Assessment / observation focus	Materials / Resources	Methodological recommendations
	1. Look carefully at the pictures – each emoticon corresponds to a different number. 2. Decipher the pictograms by replacing the emoticon with the corresponding number. 3. Write down the resulting numbers. 4. Represent the resulting numbers as a sum of tens and ones. 5. Pay special attention to the last pictogram – there the number is three-digit, which means you have to represent it as a sum of hundreds, tens and ones.	● The student reads the task independently; ● Knows how to transfer information /in this case, to link the emoticon to a number/ ● Able to represent the numbers as a sum of units, tens and hundreds ● Able to compare the results.	The teacher observes: ● Does the student understand the instructions? ● Is (s)he able to maintain the necessary concentration? ● Is (s)he able to work independently? ● Is (s)he aware of the concepts of units, tens and hundreds ● Is (s)he able to write and read numbers correctly ● Is (s)he able to connect/transfer information presented in different ways.	● A pencil or a pen ● The worksheet	● Give instructions one at a time – wait for students to complete one action before giving instructions for the next. ● Remind students of the meaning of the concepts “units”, “tens” and “hundreds”, ● Allow enough time to complete the task. ● If a student is having difficulty doing it on their own, you can review the example again and then use guiding questions to help them. ● Give students who are having difficulty the opportunity to ask for “help from a friend”.

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Name: Grade: Date:

Units, tens, Hundreds

Level 1	What do I need to do?	What can I use to solve this task?
	1. Write down all the numbers with a tens digit of 7 and a units digit less than 4. 2. Write down all the numbers with a units digit of 3 and a tens digit greater than 5. 3. Write down all the even numbers with the same tens and units' digits. 4. Arrange the numbers from the largest to the smallest. 5. Knowing that 1 ten = 10 ones, and 1 hundred = 10 tens = 100 units, write down the numbers that have: - 2 tens and 7 units - 9 tens and 3 units - 1 hundred, 4 tens and 5 units - 4 hundreds, 8 tens and 9 units /You can write the digits in different positions using different colours/.	• A pencil or a pen • Coloured pencils or pens • An eraser • The worksheet

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EXAMPLE:

- Write down all the numbers with a tens digit of 1 and a units digit greater than 7: **18, 19**
- Write down all odd numbers with the same tens and units' digits: **11, 33…..**
- 3 tens and 5 units ⇨**35**
- 1 hundred, 2 tens and 3 units ⇨**123**

- All the numbers with a tens digit of 7 and a units digit less than 4:

  ……..

- All the numbers with a units digit of 3 and a tens digit greater than 5:

  ……..

- All the even numbers with the same tens and units' digits:

  ……..

- Write down the numbers:

  - 2 tens and 7 units ……
  - 9 tens and 3 units ……
  - 1 hundred, 4 tens and 5 units ……
  - 4 hundreds, 8 tens and 9 units ……

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Level 2	 **What do I need to do?**	 **What can I use to solve this task?**
	In this task you don't need to calculate, just think carefully. Read the statements on each line carefully. Mark the correct answer with **X.**	• A pen • The worksheet

	True	False
10 tens = 1 hundred		
1 ten = 1 unit		
2 tens >20 units		
The number 39 consists of 39 units		
The number 100 consists of 1 ten		
The number ninety one should be written as 19		
10 units < 1 ten		

Self - check	Teacher's comments
☐ I finished the task.	
☐ I checked my work.	

How did I do (circle):

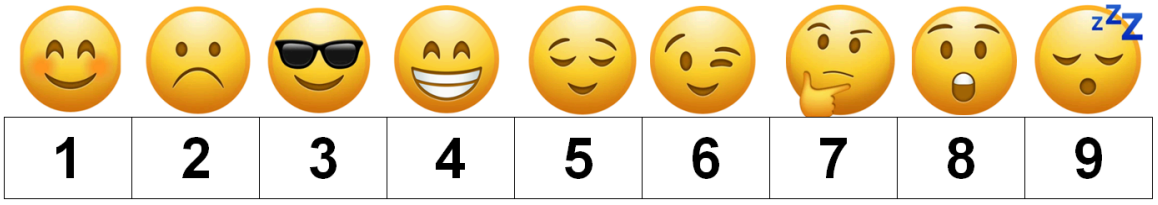




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Level 3	 **What do I need to do?**	 **What can I use to solve this task?**
	1. Look carefully at the pictures – each emoticon corresponds to a different number. 2. Decipher the pictograms by replacing the emoticon with the corresponding number. 3. Write down the resulting numbers. 4. Represent the resulting numbers as a sum of tens and ones. 5. Pay special attention to the last pictogram – there the number is three-digit, which means you have to represent it as a sum of hundreds, tens and ones.	• A pencil or a pen • The worksheet

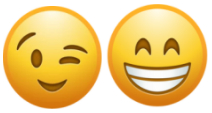


EXAMPLE:

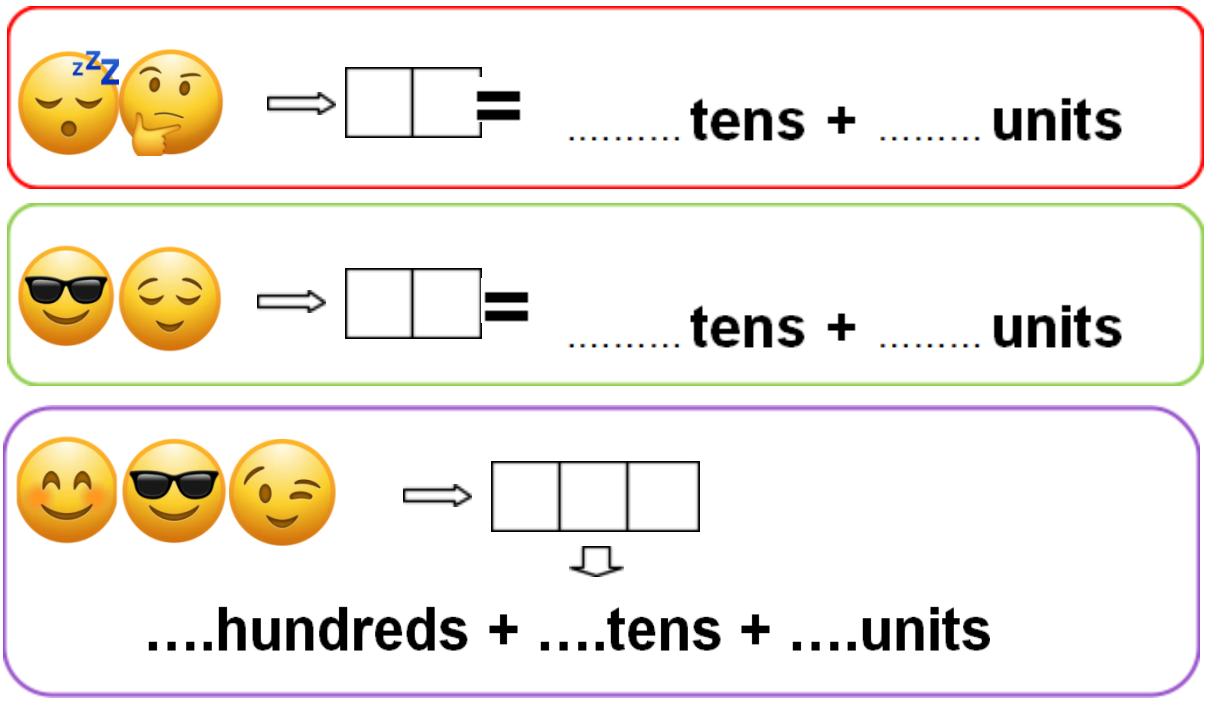
1. Decode and write:  ⇨ **39**

2. Tens + Units: **39 = 3 дес. + 9 ед.**

 ⇨ □□ = ... **tens +** ..... **units**

 ⇨ □□ = ... **tens +** ..... **units**

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Self - check	Teacher's comments
☐ I finished the task.	
☐ I checked my work.	

How did I do (circle):





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LESSON PLAN

GRADE: 2
CURRICULAR AREA: Arithmetic
SUBJECT: Mathematics
LESSON TOPIC: Numbers up to 100 – Counting, Writing, Comparing
LESSON TYPE: combined
SPECIFIC SKILLS: revising the concepts of units and tens; improving the comparing skills and strengthen the logical thinking

THE PURPOSE OF THE LESSON:

OPERATIONAL OBJECTIVES:
O1: to improve counting forward and backward
O2: to consolidate knowledge of two-digit numbers as a sum of ones and tens
O3: to practice writing and comparing numbers (up to 100)
O4: to strengthen students' logical thinking

TEACHING STRATEGY:
Methods and techniques: brain storm; activating the previous knowledge; questions and answers, gamification, exercises.
Teaching aids: worksheet, pen, pencil, eraser
Organisational approaches: frontal, individual

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Lesson segments/ steps	Op. Ob.	The scientific content of the lesson	Teaching strategy					Evaluation	Timing
			Methods	Teaching aids	Forms of organisation				
					F	G	I		
1. Organizational moment	**-**	- Checking students' readiness for the lesson, - Checking homework	-	-	F				**3 – 5 min**
2. Gaining attention	**O2**	The teacher sets the following tasks /or similar/: - Counting forward from 10 to 30 - Counting backward from 100 to 70 - Counting forward from 40 to 70 - Counting backward from 60 to 40	Activating previous knowledge	Interactive/ white board	F				5 min
3. Announcing the topic and objectives of the lesson	**O3**	Today we will work on comparing numbers up to 100. When comparing different quantities in mathematics, we use the symbols of comparison: greater than (>), less than (<) and equal to (=). Several examples can be made - orally or on the board.	Activating previous knowledge.	-	F				3 min
4. Updating one's knowledge	**O1**	Revising the concepts of tens and ones and how to write two-digit numbers. Presenting the concept of "hundred" as a group of 10 tens. The teacher dictates two-digit numbers; different students write one of the numbers on the board and determine the number of tens and ones	Brain storm	Interactive/ white board	F		**I**		5 min

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5. Directing learning	O1; O3	Students write down numbers from 0 to 100 (shuffled) under dictation. They identify and write down the numbers that are greater and/or less than a number given by the teacher. They then order all the dictated numbers, starting from the smallest to the largest.	Exercise	Worksheet, Level 1			**I**		7 min
6. Aiming for performance	O1, O2, O3	Individual work – implementation of knowledge about tens, units, comparison. Practicing comparison using elements of gamification and logic.	Exercise; gamification	Worksheet, Levels 2 and 3			I		**10 min**
7. Concluding the Activity/ Homework	O1, O2, O3	After completing the Worksheet, the teacher summarizes the topic. By asking questions – the class revises the concepts and rules on the topic of the lesson. The teacher sets homework tasks.	Questions and answers		F				5 min

F = frontal G = group I = individual

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WORKSHEET Sample: Numbers up to 100 – Writing and Comparison

These worksheets are prepared in 3 levels according to the principle "From easy to difficult":

Level 1: Listen, write, order (Easy)

- Write down the numbers under dictation /the teacher dictates numbers from 0 to 100 in a jumbled manner/
- Copy the numbers that are greater than 36.
- Copy the numbers that are less than 46.
- Arrange all the numbers starting from the smallest to the largest.

Level 2: Replace, write, compare (Moderate);

A/ Replace the pictures with the corresponding digit and write down the resulting numbers.

Write the same numbers as the sum of tens and ones.

B/ Replace the pictures with the corresponding digit and compare the resulting numbers using the symbols >, <, =.

Level 3: Think and compare without calculating (Challenging)

<, > or =



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