



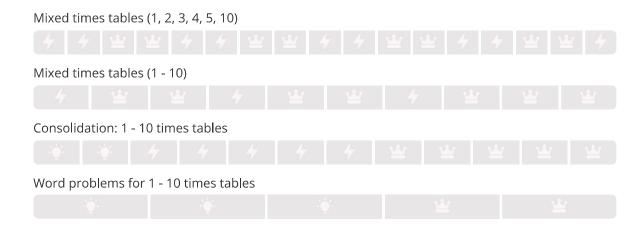
Great job! Levebee chose suitable exercises based on the diagnostic assessment.

#### Skill overview



Number composition (	)-20						
Addition and subtraction	on within 20 (n	o exchang	e)				
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Addition and subtraction	on within 20 (w	vith exchar	nge)				
Word problems within	20						
Number composition (	)-100						
Addition and subtraction	on within 100 (	two mu <b>l</b> tip	les of te	n)			
Addition and subtracti	on within 100 (	without ex	change)				
Addition and subtracti	on within 100 (	with excha	inge, add	ding/sub	tracting o	ones only)	
Addition and subtracti	on within 100 (	multiples o	of 10 to/1	from any	2-digit n	umber)	
Addition and subtracti	on within 100 (	any two tw	vo-digit r	numbers	)		
Word problems for add	dition and subt	traction wit	thin 100				
Addition and subtracti	on within 100 (	all number	rs 0-100)				
Vocabulary for multipli	cation and divi	ision					
2 times table							
2 times table - word pr	oblems						
3 times table							
3 times table - word pr	oblems						

4 times table 4 times table - word problems 5 times table 5 times table - word problems 1 times table Word problems for 1 - 5 times tables 10 times table 10 times table - word problems Consolidation: 1, 2, 3, 4, 5, 10 times tables Consolidation: 1, 2, 3, 4, 5, 10 times tables - word problems 6 times table 6 times table - word problems 7 times table 7 times table - word problems 8 times table 8 times table - word problems 9 times table



- Not tested.
- Tested, the student has successfully completed this exercise.
- Tested, the student has not reached the required level.
- Not tested, the student can be assumed to be proficient.
- Ont tested, the student has not reached the required level in the follow-up exercise.



### 102 Finding objects (two criteria)



#### The student has successfully completed this exercise.

- ✓ The pupil can sort objects according to **one or two criteria**.
- ☑ Based on the given criterion, the pupil recognises what objects have in common and what sets them apart.
- ✓ The pupil can sort the same objects according to different instructions. They can therefore disregard previous instructions and follow new ones as needed.
  For example, animals that have fur, regardless of where they are; animals that are in water, regardless of whether they have fur or not, but based on where they are.
- The pupil can **hold** two pieces of information **in their working memory**, process and evaluate them correctly, which will be needed in more challenging tasks.



# Finding objects (positive and negative criteria)









#### The student has not completed this exercise to the required level.

#### What may be the cause?

- ⚠ The pupil may have difficulty **understanding** at the level of **words/concepts** or the level of **phrases with negative statements**. The pupil cannot perform sorting if they do not understand these concepts.
  - For example, give me an apple that is not red and has a stem.
- ⚠ The pupil may lack sufficient **general knowledge** needed to sort correctly. For example, they may lack the necessary knowledge about animals.
- ⚠ The pupil may have difficulties with **phonological memory** (relating to speech) or **working memory capacity**. This may limit their ability to process instructions.

- Sort different/similar objects based on various criteria.

  For example, sort geometric shapes by their size, colour, and shape; sort objects based on the purpose of use, etc.
- **Pescribe attributes**; describe what objects have in common, and how they are different or similar.
  - For example, what defines a forest, what does not qualify as a forest, what is merely similar to a forest, and why.
- **Train analytical thinking**, try to break down a problem into individual components, and conversely, arrive at a general conclusion from specific details.

  For example, recognise shapes that make up an image and, vice versa, identify a more complex image using provided shapes.

- Yerify the **understanding of coordinate**, **subordinate**, **and superordinate** concepts. For example, types of fruit and vegetables.
- Progress beyond passive knowledge and actively create groups by sorting objects based on a single criterion.

For example, sort waste with the pupil.

- Passively recognise criteria used to sort objects.
  For example, summer/winter clothes in the wardrobe; what does not belong in a set of pictures, etc.
- **Progress from simpler instructions** to more complex ones, both in terms of mental complexity and language.

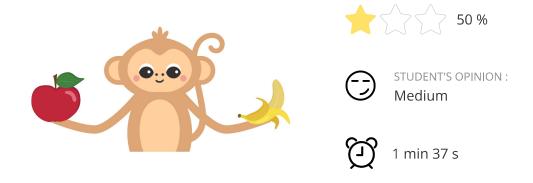
Levebee has chosen the following exercises for the student:







### Identifying left and right (facing others)



#### The student has not completed this exercise to the required level.

#### What may be the cause?

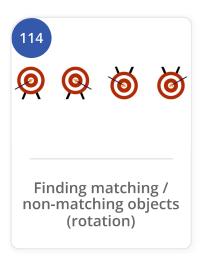
- ⚠ The pupil may still be struggling with identifying shapes based on their **horizontal and vertical lines of symmetry**, as well as **mirror-inverted shapes**. This skill will soon be necessary, for instance, when learning letter forms.
- ▲ Distinguishing the left-right orientation in a 2x2 grid or 3x3 grid might pose a challenge for the pupil.
- ⚠ The pupil may have difficulties **identifying the position of objects in a 2x2 grid**. For example, 'top left' or 'bottom right' etc.
- ⚠ The pupil should be proficient at navigating in a 2x2 grid but might have trouble identifying the positions of objects in a 3x3 grid.
  For example, 'top middle', 'middle middle', etc.
- 1 It is nearly certain that the pupil will **struggle with mentally visualising the grid** and, once it's no longer visible, will not be able to identify the locations of objects described by terms such as top left, middle right, etc.
- ⚠ The pupil might be skilled at recognising left and right in relation to their own body parts (such as their right hand, left leg, etc.), but **differentiating left and right from another person's perspective** might be too challenging for them.

- Preate opportunities for the pupil to **practise in real-life situations**. This involves frequently working with physical objects, as well as comparing images, diagrams, and symbols on paper.
  - For example, understanding positions such as front, back and upside-down; observing

what happens to a mug with a handle when being moved around; identifying where the handle is when the mug is rotated in different ways and comparing it with another mug in a stationary, upright position.

- Practise using a **2x2** grid. Ask the pupil either to place an object into a specific position in the grid or to describe the position of an object. Alternate these instructions. For example, say: "Put the car in the top right position." Next time, say: "Say where the apple is."
- Practise using a 3x3 grid. Ask the pupil either to place an object into a specific position in the grid or to describe the position of an object. Alternate these instructions. For example, say: "Put the car in the middle left position." Next time, say: "Say where the key is."
- It is also important to work on more advanced skills such as the pupils having to recall the position of objects in a 2x2 or 3x3 grid that disappears after being presented. In order to provide their answer, the **pupil has to rely on their mental representation of the grid**.
- The concept of left and right from the perspective of others should be introduced once the skills mentioned above will have been mastered.
  For example, this can be done by standing with the child in front of a mirror and practising identifying left and right. The adult then turns to face the child. As they stand opposite each other, they identify left and right from their own and each other's perspectives.

#### Levebee has chosen the following exercises for the student:







# Finding objects based on language of position (sequences)















STUDENT'S OPINION : **Medium** 



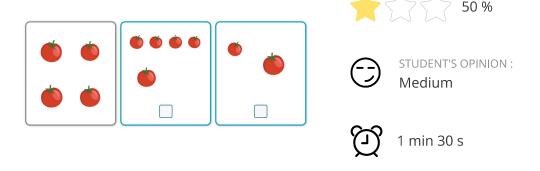
1 min 1 s

#### The student has successfully completed this exercise.

- ✓ The pupil can **navigate in a sequence**. This is a key prerequisite skill for navigating in numeric sequences in the future.
- ✓ If the pupil can successfully navigate in a sequence using detailed terms such as 'after', 'right after', 'before', 'right before', 'between', and so on, it can be assumed that they will also grasp concepts such as 'far', 'close', 'by', 'above', 'below', etc.



## Comparing groups (1-5 more than, 1-5 fewer then)



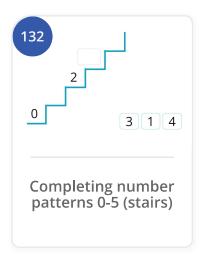
#### The student has not completed this exercise to the required level.

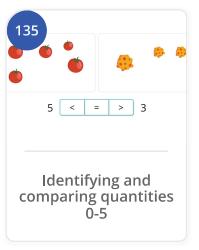
#### What may be the cause?

- ⚠ The pupil does not understand the concepts of quantity and numbers between 0-5.
- ⚠ The pupil will likely also struggle to understand the concepts of equal, more, and less.
- ⚠ The concepts of *n* more than and *n* fewer than may also be challenging for the pupil to grasp.
- 1. The task of comparing a set of elements with two other sets might pose a problem for the pupil.
  - Consider a scenario where three pupils have 5, 2 and 4 blocks respectively. Being asked questions such as who has more blocks, who has fewer blocks, and by how many, the pupil may struggle with remembering what they should compare.

- Preate opportunities for the pupil to practise comparing quantities. Count them (from 0 to 5), and work on the pupil's comparison skills. **Start with only two groups.**
- Provide plenty of activities to help the pupil understand the **relationships between** quantities (numbers) and how they can be compared using concepts such as equal to, more than, less than, as well as n more than and n fewer than.
- **Ask the pupil to compare more than two groups** and to describe their numerical relationships.
  - For example, compare three groups containing different elements with each other.

#### Levebee has chosen the following exercises for the student:









### Finding objects using ordinal numbers 1st-5th















STUDENT'S OPINION: Medium



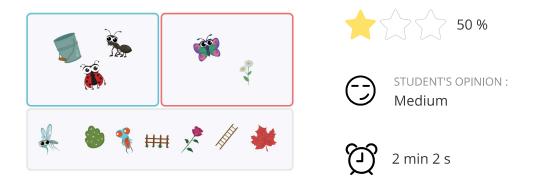
2 min 32 s

#### The student has successfully completed this exercise.

- ✓ The pupil understands that **numbers can represent** quantity (counting objects 1-5) as well as **order**. The pupil shows an understanding of ascending and descending number sequences and can describe the position of a number in a sequence.
- ✓ The pupil comprehends relationships within sequences such as 'after', 'right after', 'before', 'right before', 'between'.
- ✓ The pupil understands that objects can be represented by concrete objects (e.g. fingers, building blocks), by pictorial representations of objects, and finally by abstract symbols (numbers). They have a clear understanding that quantity (the number of objects) can be indicated through both words and numerals and comprehend the relationships between these representations.
- The pupil most likely understands that the **last ordinal number** in a sequence also represents the number of objects in this sequence.
- ✓ It is likely that the pupil can recognise numerals written using various fonts or handwriting styles. This has not been tested.



## Completing groups of 0-5 (1 or 2 more than, 1 or 2 fewer then)



#### The student has not completed this exercise to the required level.

#### What may be the cause?

- ⚠ The pupil may encounter difficulties when it comes to comparing qualitative characteristics, such as fast, slow; fast, faster, the fastest; slow, slower, the slowest.
- ⚠ The pupil likely **struggles with understanding concepts of as much as/more/fewer** and, as a result, **n more than/n fewer than**.
- ⚠ The pupil probably does not **understand the inverse relationship concept**, i.e. fewer/n fewer than objects in one area will result in more/n more than objects in the other area.
- ⚠ Without a strong understanding of more/n more than and fewer/n fewer than, the pupil is likely to face challenges in navigating in numerical sequences, comprehending addition and subtraction operations, and ultimately struggling with word problems. This lack of understanding poses a threat to the pupil's future academic progress.

#### What may help this pupil?

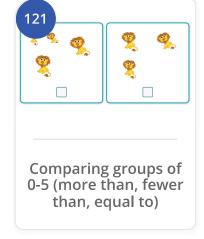
- Provide opportunities to describe attributes using words.
  For instance, compare the size of objects, such as small vs. large; small vs. smaller vs. the smallest, and similar comparisons.
- **Create groups of elements** with equal quantities, additionally practise comparisons of quantities, and make sure that the pupil understands the inverse relationship concept, meaning that if there are more objects in one place, there will be fewer of them in the other.

For example, compare groups of sweets, pasta, pebbles, etc.

- **Create buildings of different sizes, some smaller and some bigger**, using *n* more than and *n* fewer than blocks.
- The pupil needs plenty of opportunities to develop their understanding of **equal/less/more**. Additionally, they need to grasp the concept of *n* more than and *n* fewer than.
- Finally, the pupil should be able to recognise and describe the relationship between two quantities (passive knowledge) as well as to manipulate quantities based on an instruction (active knowledge).

#### Levebee has chosen the following exercises for the student:









### Identifying numbers of objects taken away 0-

5



#### The student has successfully completed this exercise.

✓ The pupil has **successfully learnt to count objects up to five**. To break numbers down, they use their knowledge of number composition without having to count using their fingers.

For instance, the pupil can break down 5 objects into the following combinations: 5+0; 0+5; 1+4; 4+1; 3+2; 2+3 without counting them individually.

✓ The pupil is ready to carry out addition and subtraction operations within the 0-5 range. They have a strong mental image of numbers from 0 to 5.



### Finding objects using ordinal numbers 1st-9th









#### The student has not completed this exercise to the required level.

#### What may be the cause?

- ⚠ Has the pupil already struggled in the number range of 1-5, go back to the recommendations **suggested in exercise 133**.
- ⚠ Has the pupil previously passed exercise 133 (number range of 0-5) but now is struggling, they understand relationships within sequences expressed by the language of position, such as after, right after, before, etc. However, they lack understanding of ordinal numbers 6th to 9th and are therefore not capable of finding position based on numerical information such as sixth, seventh or ninth.
- ⚠ The pupil might lack understanding of number sequences from 0 to 9 (10) both in ascending or descending order. Moreover, they may struggle to see that every number has a preceding number and a subsequent number. Therefore, they do not comprehend that numbers can indicate both order and quantity. They find it challenging to understand the relationships between numbers (0-9).
- ⚠ It is recommended to verify whether the pupil can recognise numerals written using various fonts or handwriting styles.

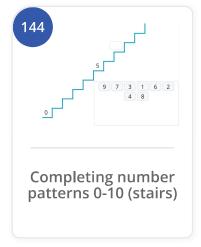
- If the pupil needs to review concepts related to identifying the position of a number within a number range, initially from 0 to 5 and then from 0 to 9, **similar suggestions** as in exercise 133 are recommended.
- To reinforce understanding of relationships within sequences, **practise arranging up** to 9 objects in a row. Initially, do so without using numbers. Later, include ordinal numbers.

For example, use a sequence of images/objects/children and ask questions about their positions using ordinal numbers (first, right after the first, right before the fifth, between the fifth and the ninth, etc.).

- Provide plenty of opportunities for linking all three representations of numbers: concrete (objects, blocks), pictorial (images, symbols), and abstract representations (numerals in both spoken and visual forms).
- Whilst counting objects, make use of this situation to describe also the position of the number in the sequence, linking the cardinal to the ordinal number (eg. number seven also represents the seventh object in the sequence). The last number in the ascending counting sequence represents the total number of objects. This practice supports pupils' understanding of both ascending and descending number sequences. For example, ask questions: "How many steps did you climb? Count them one by one. Which step was the first? Which step was the third? Which step is located between the second and the fifth?" Steps effectively represent ascending and descending sequences.
- Show various representations of numerals (handwritten as well as printed fonts) to the pupil, encouraging them to describe what is the same and what is different about them.
- If the pupil can navigate well within the number range from 1 to 5 but struggles with the number range from 1 to 9, **practise arranging objects** in a row. Initially, do so without using numbers. Later, include ordinal numbers **within the range of 1-9**. For example, using a ruler, measuring tape, or pencils laid out on a table, the pupil can describe the position of numbers, which numbers come before, which come after, which number is the last/second to last, which numbers come before the last one, etc. Encourage the pupil to verbally name the numbers as they engage in this activity.

#### Levebee has chosen the following exercises for the student:









## Identifying numbers 0-10 based on hints (smaller, greater)



#### The student has not completed this exercise to the required level.

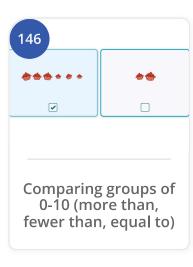
#### What may be the cause?

- ⚠ The pupil may not be able to apply any other counting strategy than counting by one. Using more advanced strategies such as skip counting or making greater jumps within the number range would be more efficient.
- ⚠ The pupil may **not have formed a strong mental image of the 0-10 number range**.
- ⚠ The pupil may have started developing a mental image of the 0-10 number range. However, the complexity of this task may **overload their working memory**.
- ⚠ The pupil might **struggle with the concepts** of greater than and smaller than.
- ⚠ The pupil might have a strong mental image of the 0-5 number range. However, they may not yet be securely navigating **the 0-10 number range**.

- Processory, offer additional exercises.
- **Verify the pupil's ability to navigate a number range** in the form of a visual scaffold. Later, you may withdraw the scaffold in order to reinforce their mental understanding of the numerical sequence.
  - For example, use a number track, a number line, a ruler or a measuring tape. Ask the pupil to explain what numbers come before or after a given number, what numbers are smaller or greater than a given number, etc.

- Start with exercises focusing on the 0-5 number range.
  For example, ask questions such as "I'm thinking of a number from 0 to 5. What number do you think it is?". If the pupil's answer is three, give them the next hint, such as "No, my number is greater". Therefore, the number that is bigger than 3 and smaller than 5 is 4. This is the correct answer.
- Once the pupil has grasped the concepts within the 0-5 range, we proceed to the 0-10 range. However, first, make sure the pupil can securely navigate the numerical sequence from 0 to 10. Without this knowledge, they may attempt to find answers by guessing. This will not help them develop their understanding and is therefore to be avoided.
- Show the pupil how to gradually narrow down large number intervals using the strategy of finding the approximate midpoint. This will make their work more efficient. Here is an example scenario: We are looking for a number between 0 and 5. Selecting number 3 as a plausible answer will break the next interval down to 0 to 2 or 4 to 5 respectively. This supports the pupil in moving beyond counting by one towards more efficient strategies.

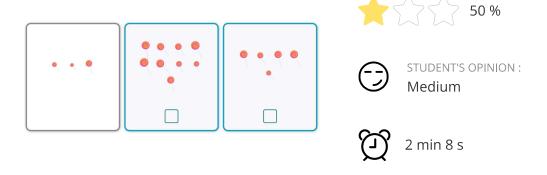
#### Levebee has chosen the following exercises for the student:







## Comparing groups (1-10 more than, 1-10 fewer then)



#### The student has not completed this exercise to the required level.

#### What may be the cause?

- ⚠ Check whether the pupil is able to compare the number of objects within the 0-5 range. If they struggle, they will not be able to succeed within the 0-10 range.
- ⚠ If the pupil is able to compare quantities within the 0-5 range but struggles with the range up to 10, they may lack secure **numerical skills within the 0-10 range**. Nonetheless, their understanding of concepts such as equal, more, less, *n* more than, *n* fewer than seems to be adequate.
- ⚠ The pupil can navigate the 0-10 number range. However, they struggle with understanding the language of comparison such as equal, more, less, *n* more than and *n* fewer than.

- If the desired level of proficiency is not achieved within the numerical range of 0-5, it will likely lead to difficulties in the 0-10 range. **Apply the recommendation provided** in exercise 134.
- If the pupil can successfully compare numbers up to 5 but faces difficulties in the 0-10 range, focus on comparing quantities within the range of 0-10, in particular between 5 and 10. Make sure they link the number of objects (such as sweets, pebbles, or cubes) to their corresponding numerical and verbal representations.
- Model situations using physical objects, e.g. sweets, pasta, pebbles, etc. Create groups of objects and compare them with each other. Describe the process verbally with complete sentences, using the language of *n* more than, *n* fewer than or equal. This will allow the pupil to further develop their understanding of the links between

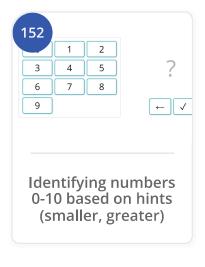
#### pictorial and abstract representations.

For example, Peter has 7 sweets and Huan has 9. Compare the amount of sweets they have. 7 is two less than 9. 9 is two more than 7.

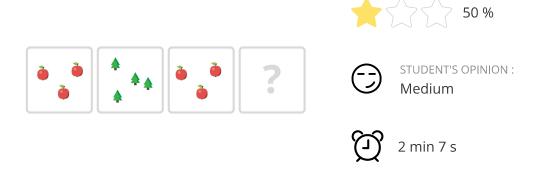
You may extend the pupil's learning by introducing the <, > and = symbols. Do so only if the pupil has mastered the previous steps.

For example, 5 < 7 - the larger quantity is on the mouth opening.

#### Levebee has chosen the following exercises for the student:







#### The student has not completed this exercise to the required level.

#### What may be the cause?

- ⚠ The pupil may not grasp the connection between the concept of quantity and its numerical representation.
- ⚠ The pupil may not be able to analyse the task and does not see a structure within a list of objects. Therefore, they cannot **formulate a hypothesis to find a solution**.
- ⚠ The pupil can analyse and discover the alternating pattern in simpler tasks based on visible attributes such as colour, shape, or size, but not based on abstract concepts such as counting.
- ⚠ The pupil has the potential to complete the task but encounters **difficulties related to executive functions**. They cannot hold a mental picture (hypothesis) in working memory, become lost while doing the exercise, and exhibit impatience, impulsivity as well as a lack of capacity to resist initial impulses (such as focusing on colour).

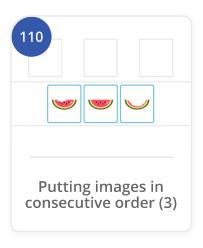
- Check if the pupil understands simple strategies objects alternate based on one criterion (e.g., □ □ ), later based on two criteria (e.g. □ □ ), and further based on additional criteria (e.g. □ □ ○ □ ). Guide the pupil whilst exploring these patterns. Finally, ask them to describe these patterns in their own words.
- Verify whether the pupil **grasps the concept of quantity/numbers**, thus having a basic understanding of numbers up to 6. Provide plenty of activities to help the pupil understand the relationship between counting and the numerical symbols, and vice

versa.

For example, represent the quantity of three apples using three fingers, assign the word 'three' to it, and read or write the number 3.

- ▼ Together with the pupil create patterns where some objects are missing. The pupil's task is to discover the pattern in the organisation of objects. The process of active creation, paired with verbal description, helps pupils to understand the problem more rapidly. This approach also supports executive functions, ensuring the activity is smooth and flawless.
- Practise identifying the order of events.
  For example, arrange pictures based on the plot of a story; describe sequences of events in nature / in everyday life etc.

#### Levebee has chosen the following exercises for the student:







## Completing groups of 0-10 - reversibility (1 or 2 more than, 1 or 2 fewer then)





#### The student has not completed this exercise to the required level.

#### What may be the cause?

- ⚠ The pupil gets confused by verbal expressions pertaining to more and less concepts and the actual number which does not match the instructions. It's related to tricky and misleading signal words. The pupil does not fully understand the inverse relationship concept.
- ⚠ The pupil will probably struggle to **understand the inverse relationship** concept, meaning that if there's more of something in one place, there will be less of it in another. Therefore, if there are two more pictures in the blue field, one can automatically assume that there will be two fewer pictures in the red field. The pupil also does not know how to rearrange pictures in such a way as to meet the requirement of having more pictures in the red field while refraining from manipulating pictures in the blue field. They do not realise that they must take away some pictures from the red field, where there are currently more of them.

#### What may help this pupil?

Progress beyond passive knowledge and actively create groups of elements with various quantities; additionally, practise comparisons of the following concepts: more by a certain amount, less by a certain amount; make sure that the pupil understands the inverse relationship concept meaning that if there's more of something in one place, there will be less of it in another. Encourage the child to explain the situation using their own words as much as possible. Active use of speech leads to deeper understanding and reinforcement of knowledge.

For example, compare groups of candies, pasta, pebbles, etc.

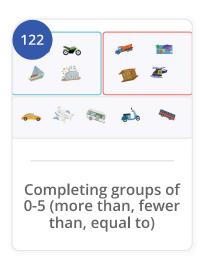
Progress beyond passive knowledge and practise actively rearranging elements within a group and with instructions where the total number must either remain unchanged or be modified.

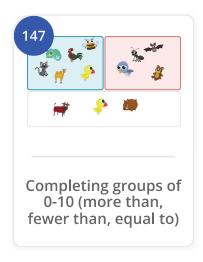
For instance, verbally compare towers constructed from blocks (imagine a scenario where there are two towers: the blue tower is 2 blocks taller than the red one, while the latter is 2 blocks shorter than the former). How many blocks should we add or remove to ensure both towers have the same height? How many to make the smaller tower taller by a certain amount of blocks; or the taller tower smaller? Is there some other way?

It's also important to **practise understanding of the inverse relationship concept** (inverse operations), meaning that if there's more of something by a certain amount in one place, there will be less of it by a certain amount in another. **We encourage using various approaches**.

For example, a pupil is tasked with creating two piles of beads with different quantities following specific instructions, while not being allowed to manipulate one of the sets. In other words, from the pile with more beads, they will form a pile with fewer beads by moving some beads to a discard pile.

#### Levebee has chosen the following exercises for the student:







Upon completion of these exercises, Levebee will automatically proceed according to the methodological guidelines above.

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