



Tobias

10/04/2024 15:24



Done!

Levebee has highlighted in orange the areas that may hinder follow-up learning. Don't worry that everything is not green. The purpose of the diagnostic is not to find out that all students can already do everything, but to identify risk areas that are worth focusing on. This will make subsequent mathematics learning easier and smoother both for students and teachers. The diagnostic also does not in any way predict a student's intelligence.

Skill overview

Grouping



Arrangement



Spatial awareness



Comparison 0-5



Numbers 0-5



Numbers 0-10



● Not tested.

● Mastered (tested)

● Probably mastered (not tested)

● Not mastered - essential skill (tested)

● Not mastered - desirable skill (tested)

● May not have mastered (not tested)

1 [Diagnostic assessment summary](#)

2 [How to help the student](#)

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1 Diagnostic assessment summary

✓ The student has mastered all the tasks regarding **grouping**, which is the foundation of **mathematical thinking**.

▶ The student has probably not understood the **vocabulary** needed to **navigate sequences of pictures**. This vocabulary is essential for the student to **grasp the concept of number line in the future**.

✓ The student was able to apply **analytical thinking** in order to **identify the pattern within the picture sequence**. These skills help them develop mathematical concepts and problem solving.

Great! Some students reach this skill only later in their schooling.

✓ The student has mastered **navigation on a 3x3 grid**. These skills are necessary for geometry, spatial perception, number line, numerical operations as well as for working with graphs and diagrams.

This refers to concepts such as top right, middle left, etc.

🔔 The student was unable to **create and compare groups of objects** using the concepts of **n more than / n fewer than** in the **1-5** number range. This concept is key to future understanding of relationships between numbers, numerical operations and word problems.

Check for understanding of the concept of more/equal/less and create situations of 1 more than and conversely 1 fewer than. Ask the student to narrate the entire process aloud.

✓ The student is ready to **understand the numbers 1-5** and their meanings.


The student understands one-to-one correspondence (linking quantity to numeral and number name) in the range 1-5.

🔔 The student was able to **count the number of missing objects up to 5**. They were also able to compare the number of objects using the concepts of **n more than / n fewer than** in the **1-5 range**. However, they did not demonstrate ability to **navigate the number range 1-5 with visual scaffolding**.

Practice orientation on the number line using the concepts of before, after, between, etc.

✓ The student is ready to **understand the numbers 1-10** and their meanings.

The student understands one-to-one correspondence (linking quantity to numeral and number name) in the range 1-10.

 The student was **not able to navigate the number range 1-10 with visual scaffolding**. They probably do not understand that **ordinals** determine the position of an element in the series and that **the last number** in the series determines the **total**.

This is important for understanding number values. Practice the number range 1-10 and the vocabulary necessary for navigating it.

 The student is probably not ready to understand **numerical operations** in the **1-10** range.

The student was unable to navigate the number range 1-10 without visual scaffolding. They could not compare the number of objects using the concepts of n more than / n fewer than. Practise the number range 1-10 and vocabulary necessary for its navigation with visual scaffolding and later without it. Go back to comparing number of objects in the range 1-5 using the concepts of n more than / n fewer than, revisit the number range 1-10 and only then move to comparing number of objects in the 1-10 range.

2

How to help the student

118

Finding objects based on language of position (sequences)

 54 %


STUDENT'S OPINION :
Too hard

 0 s

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

What may be the cause?

- ⚠ The student's **understanding of terms related to relationships within sequences**, such as 'after', 'right after', 'before', 'right before', 'between', and others, appears to be **limited**. This suggests that they may also struggle to comprehend concepts such as 'far', 'close', 'by', 'above', 'below', and so forth.
- ⚠ The student is **not prepared to grasp the connections between numbers**.
For instance, to identify the number right after 2, all numbers after 2, or all numbers between 1 and 5.

What may help this student?

- 💡 **Explain the spatial arrangement of objects.** Use terms such as 'near', 'distant', 'behind', 'inside', 'by', 'next to', 'between', 'in the middle', and so on.
For example, say, "What object am I thinking about? My object is located in this room between ... and hanging above ..."
- 💡 Verify that the student can successfully **navigate in a sequence of objects without relying on numbers**.
For example, make sure that the student can identify what comes after, right after, what is in between, next to, etc.

Levebee has chosen the following exercises for the student:

113



Searching for objects based
on language of position
(complex images)



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



40 %



STUDENT'S OPINION :

Too hard



0 s

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

What may be the cause?

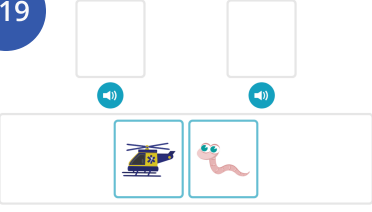
- ⚠️ The student probably does not **understand the inverse relationship concept**, i.e. fewer/ n fewer than objects in one area will result in more/ n more than objects in the other area.
- ⚠️ Without a strong understanding of more/ n more than and fewer/ n fewer than, the student is likely to face challenges in **navigating in numerical sequences, comprehending addition and subtraction operations, and ultimately struggling with word problems.**

What may help this student?

- 💡 **Create groups of elements** with equal quantities, additionally practise comparisons of quantities, and make sure that the student 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 candies, pasta, pebbles, etc.
- 💡 **Create buildings of different sizes, some smaller and some bigger, using n more than and n fewer than blocks.**
- 💡 The student 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 student 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).
- 💡 It is important to practise understanding the **inverse relationship between the concepts of n more than and n fewer than**.
For example, ask the student to create two unequal groups of candies with one of the groups having 2 more candies. Next, ask them to make both groups equal. Let the student explain whether they add or take away. Discuss different strategies and explain that your focus is the comparison rather than the exact number of candies in each group. Encourage the student to use the language of " n more / n fewer candies".

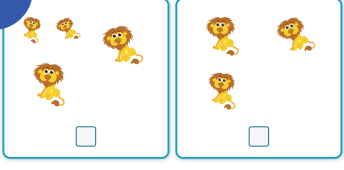
Levebee has chosen the following exercises for the student:

119



Matching objects to opposite properties

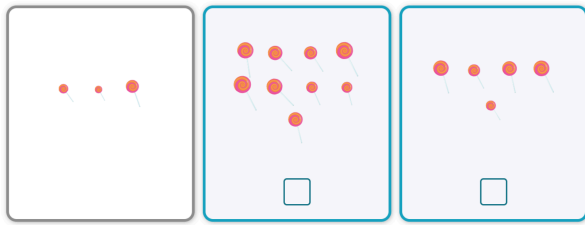
121



Comparing groups of 0-5
(more than, fewer than,
equal to)



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



STUDENT'S OPINION :

Too hard



0 s

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

What may be the cause?

- ⚠ The student lacks 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.

What may help this student?

- 💡 **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 candies, pebbles, or cubes) to their corresponding numerical and verbal representations.
- 💡 **Model situations using physical objects**, e.g. candies, 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 student to further develop their understanding of the links between pictorial and abstract representations.
For example, Peter has 7 candies and Huan has 9. Compare the amount of candies they have. 7 is two less than 9. 9 is two more than 7.
- 💡 You may extend the student's learning by introducing the $<$, $>$ and $=$ symbols. Do so only if the student 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:

152

4 ← ? → 9

2

10

7

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



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

3 What to praise the student for

100 App usability test



★ ★ ★ 100 %



STUDENT'S OPINION :
Just right



0 s

The student has successfully completed this exercise.

✓ The student has successfully mastered the basic operation of the application.



★ ★ ★ 100 %



STUDENT'S OPINION :
Just right



0 s

The student has successfully completed this exercise.

- ✓ The student can sort objects according to **one or two criteria**.
- ✓ Based on the given criterion, the student recognises what objects **have in common and what sets them apart**.
- ✓ The student 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 student can **hold** two pieces of information in **their working memory**, process and evaluate them correctly, which will be needed in more challenging tasks.



STUDENT'S OPINION :
Just right



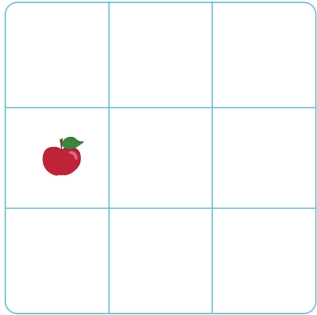
0 s

The student has successfully completed this exercise.

- ✓ The student can sort objects into **various categories**.
- ✓ The student, based on the given criteria, recognises what objects **have in common, how they are similar**, and how they **differ**. Moreover, the student understands superordinate and subordinate concepts.
- ✓ The student **can apply passive knowledge to actively create groups and sort objects** based on given instructions.
E.g. fruits, vegetables, means of transport
- ✓ The student can **identify criteria and then express** how the objects are classified.
For example, what does not belong in a set of pictures.
- ✓ The student has **sufficient general knowledge** to identify the sorting criteria.
For example, knowledge of the environments where animals live.
- ✓ The student can employ **analytical thinking**, i.e., break down a problem into individual components. Conversely, they can arrive at a general conclusion based on specific details.
For example, they can recognise the shapes that make up an image, or conversely, identify a more complex image based on given shapes.
- ✓ The student can **retain information in their working memory** as well as correctly process and evaluate it, which involves a complex set of skills.
- ✓ The student understands instructions that involve the use of **negative statements**.

115

Placing objects based on language of position (grid)



STUDENT'S OPINION :
Too easy










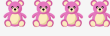
0 s

The student has successfully completed this exercise.

- ✓ The student is familiar with the concepts of **top/bottom/middle/right/left**. They can identify the position according to the instruction, e.g. top right/bottom left. Visual discrimination and spatial orientation is important for navigating a page of a worksheet, number line, and especially for developing geometric concepts.

128

Matching: count - number name - numeral (1-5)

		4
		2
		1
		3

 100 %

STUDENT'S OPINION :

Just right



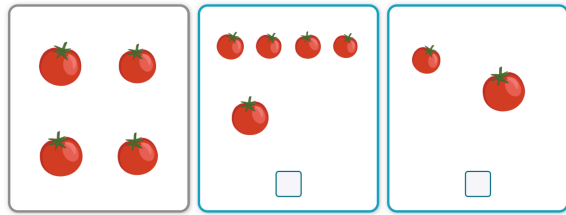
0 s

The student has successfully completed this exercise.

- The student understands **one-to-one correspondence** (linking quantity to numeral and number name) in the range **1-5**.

136

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

 80 %

STUDENT'S OPINION :

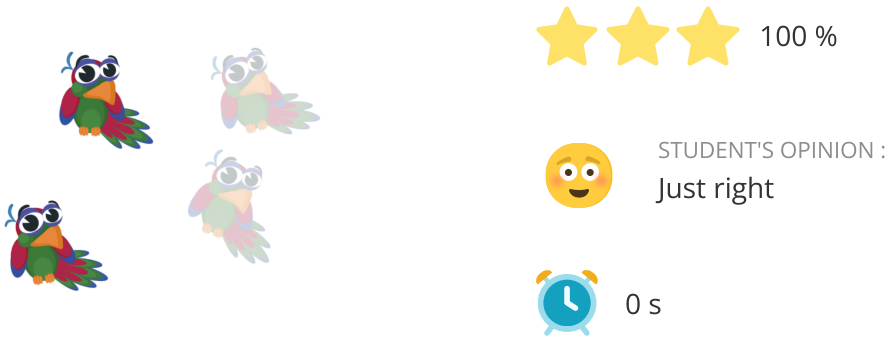
Just right



0 s

The student has successfully completed this exercise.

- ✓ The student understands the relationship between numbers including concepts of **equal / greater than / less than / n more than / n fewer than**.
- ✓ It has not been tested whether they understand the $<$, $>$, and $=$ symbol.



The student has successfully completed this exercise.

We recommend verifying whether the student **estimated the number of missing objects without counting them one by one.**

- ✓ If the student is using subitising (i.e. using strategies that except counting the objects one by one), they have a strong mental image of numbers from 0 to 5. The student is **ready to carry out addition and subtraction operations within the 0-5 range.**








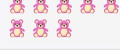
For instance, the student can break down 5 objects into the following combinations: 5+0; 0+5; 1+4; 4+1; 3+2; 2+3 without counting them individually.

- ⚠ If the student is counting the missing objects one by one, their **mental image of numbers from 0 to 5 is still developing. The aim is to develop conceptual understanding of quantity (numbers)** and their various combinations within the range of 0-5, laying the foundation for future numerical skills. At this stage, however, without using abstract recording.

For example, toss 4 pebbles and ask the student to count them and then close their eyes. Hide 3 pebbles, ask the student to open their eyes and ask them how many pebbles have disappeared.

140

Matching: count - number name - numeral (0-10)

		9
		7
		8
		6

 90 %



STUDENT'S OPINION :

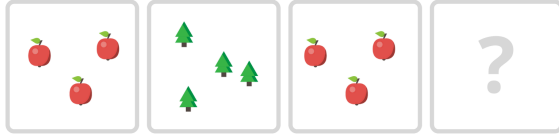
Just right



0 s

The student has successfully completed this exercise.

- The student understands **one-to-one correspondence** (linking quantity to numeral and number name) in the range **1-10**.



STUDENT'S OPINION :

Too hard



0 s

The student has successfully completed this exercise.

- ✓ The student can **compare objects**, analyse them, and discover the pattern according to which they change.
- ✓ The student can **resist the initial impulse** (e.g. focusing on the colour) and think the task through, **looking for a more challenging criterion**, such as quantity, frequency, ascending or descending number series (comparison).
- ✓ The student can **connect their knowledge of numbers with other variables**, such as colour, consider various strategies and hypotheses, and then compare and evaluate them.
- ✓ The student can **recognise the sequence**. They can determine the course of events, what precedes and what follows, and the concept of cause and effect. They can also arrange pictures based on how they fit into a narrative.
- ✓ The student demonstrates **good working memory** by mentally comparing different sequencing strategies.
- ✓ The student demonstrates a **thoughtful and analytical** approach to the task.