

FUNEXPECTED

# Funexpected Math way of learning

Changing the way students experience  
mathematical concepts.



PROGRAM POWERED BY

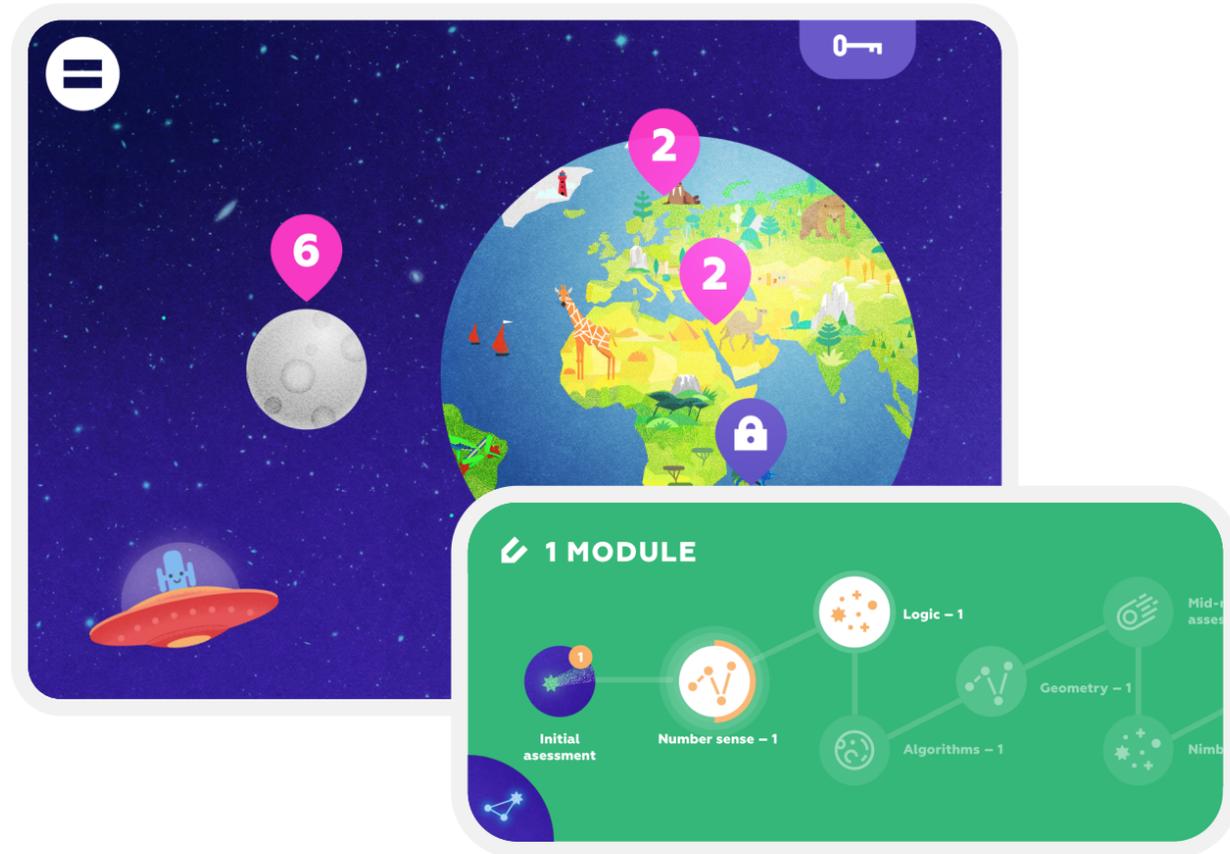


**HSE**  
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# Wide curriculum: connecting ideas for a deeper understanding

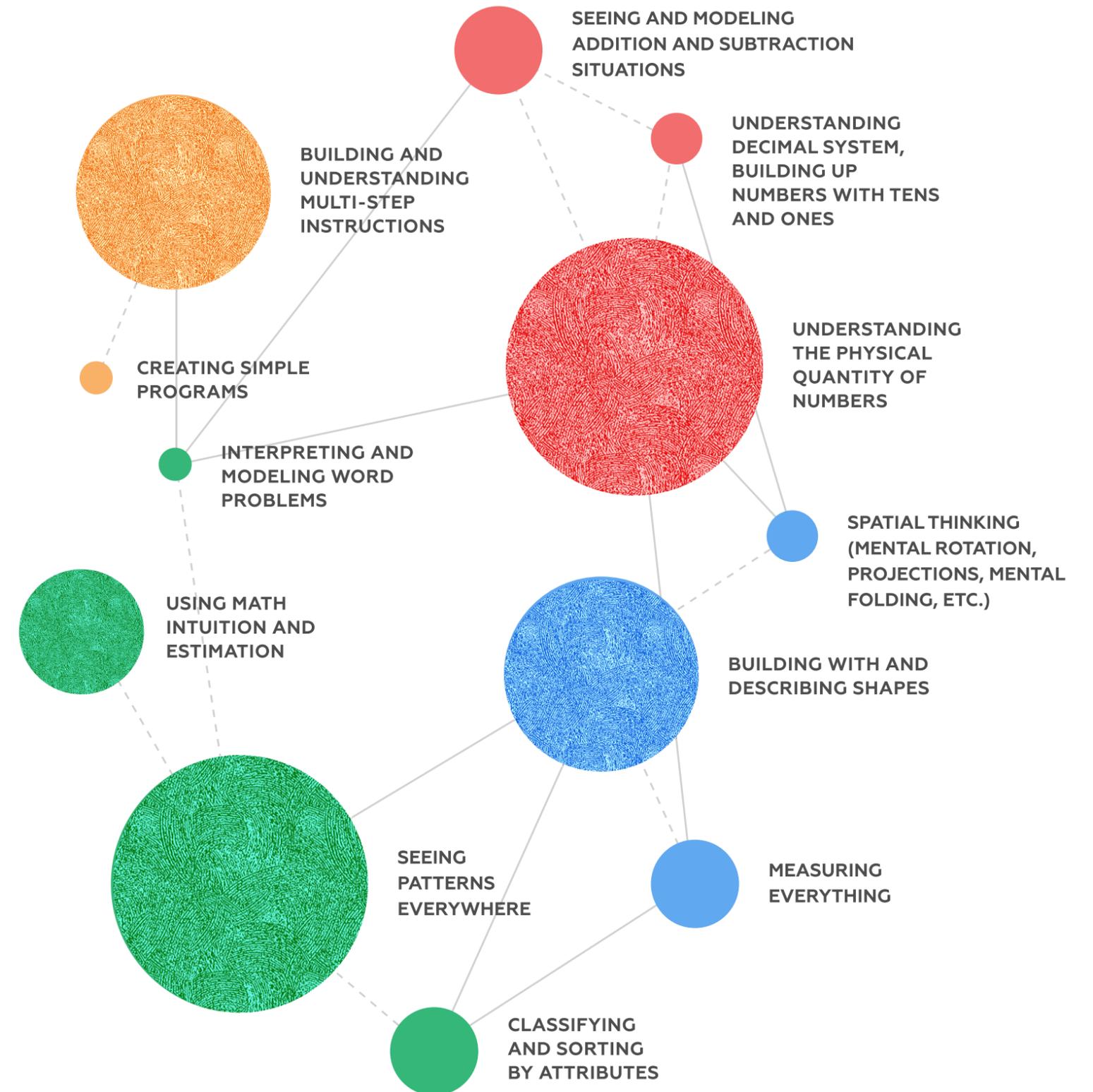
Getting children aged 3-7 interested in math can be challenging. It takes a lot of time and effort to meet each child on their level, and to help them achieve math mastery without becoming bored by repetitive tasks.

## Funexpected math makes learning fun and intuitive.

An engaging story poses problems that children actually want to tackle, a wide curriculum helps interconnect ideas, and low-floored, high-ceiling tasks allow kids to progress at their own pace.



Funexpected teaches math the same way that you would teach a kid a new language: immersing children in a certain environment, helping them express themselves and focusing on successes rather than mistakes.



# Teaching approach and formats

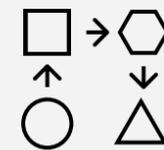
Every new concept starts with children playing and experimenting. Then, they move to summing up their experiences and trying to answer oral questions. Finally, it's time for more tricky challenges.



## Play and experiment

1 step

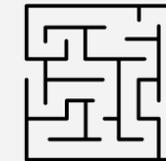
Students experiment with games to gain a hands-on understanding of new concepts. They can share observations with the class.



## Oral questions

2 step

Using their freshly-acquired experience, children tackle oral questions to deepen their understanding. This is a good time to formally introduce new concepts and promote math talk.



## Tricky tasks

3 step

The class is presented with a tricky question in which the same themes can be presented in new settings. The digital tutor helps children find the solution.

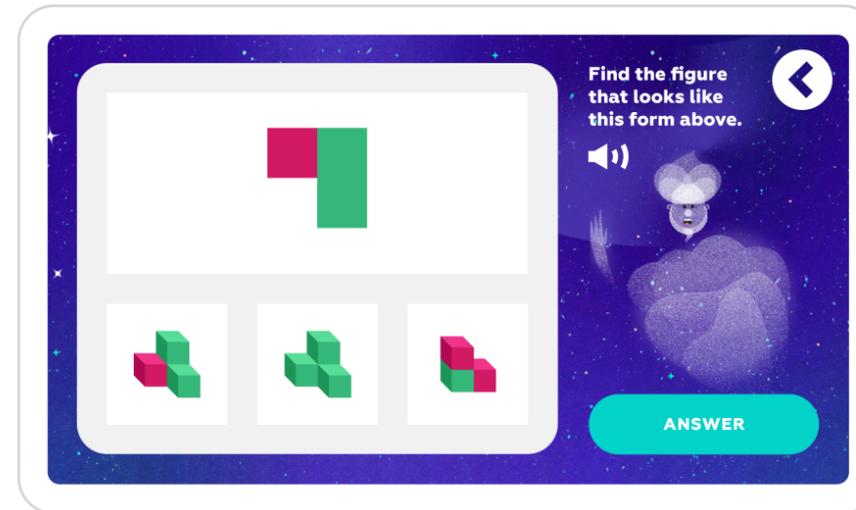
# Example: 3D shapes and projections

THEME Learning about 3D shapes and projections.



## AR game

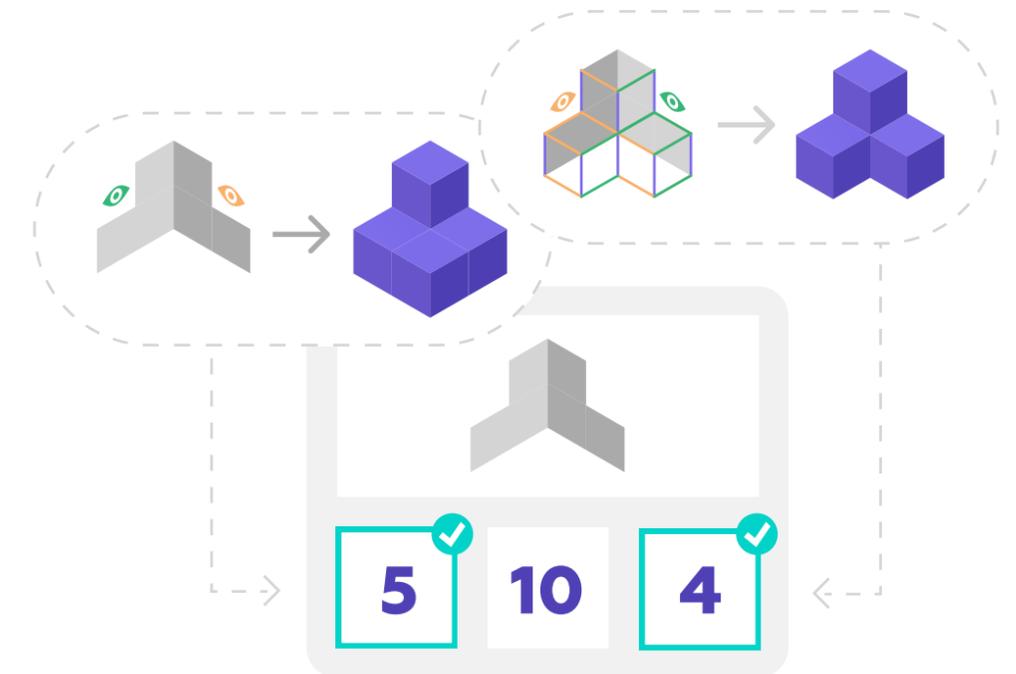
Exploring how various 3D figures look in AR mode, children experiment and come to conclusions of their own. They will discover that a sphere and a cone might look the same in some situations, or how to recognize a more complex figure by its projections.



## Oral questions

Oral questions help children to sum up and share their observations. Here, it's a great place to ask them about their reasoning for choosing the answers they arrive at.

**Task:** Find the figure that looks like this from above.



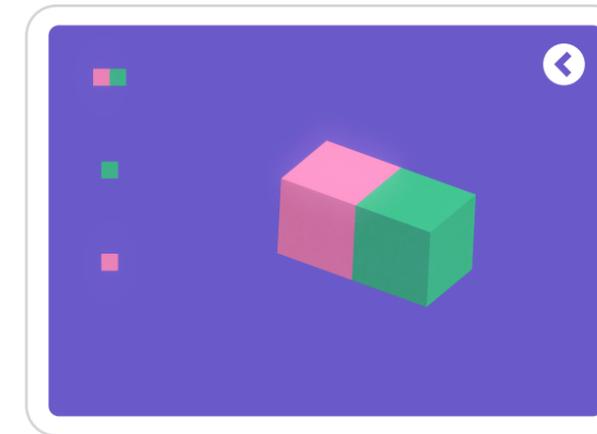
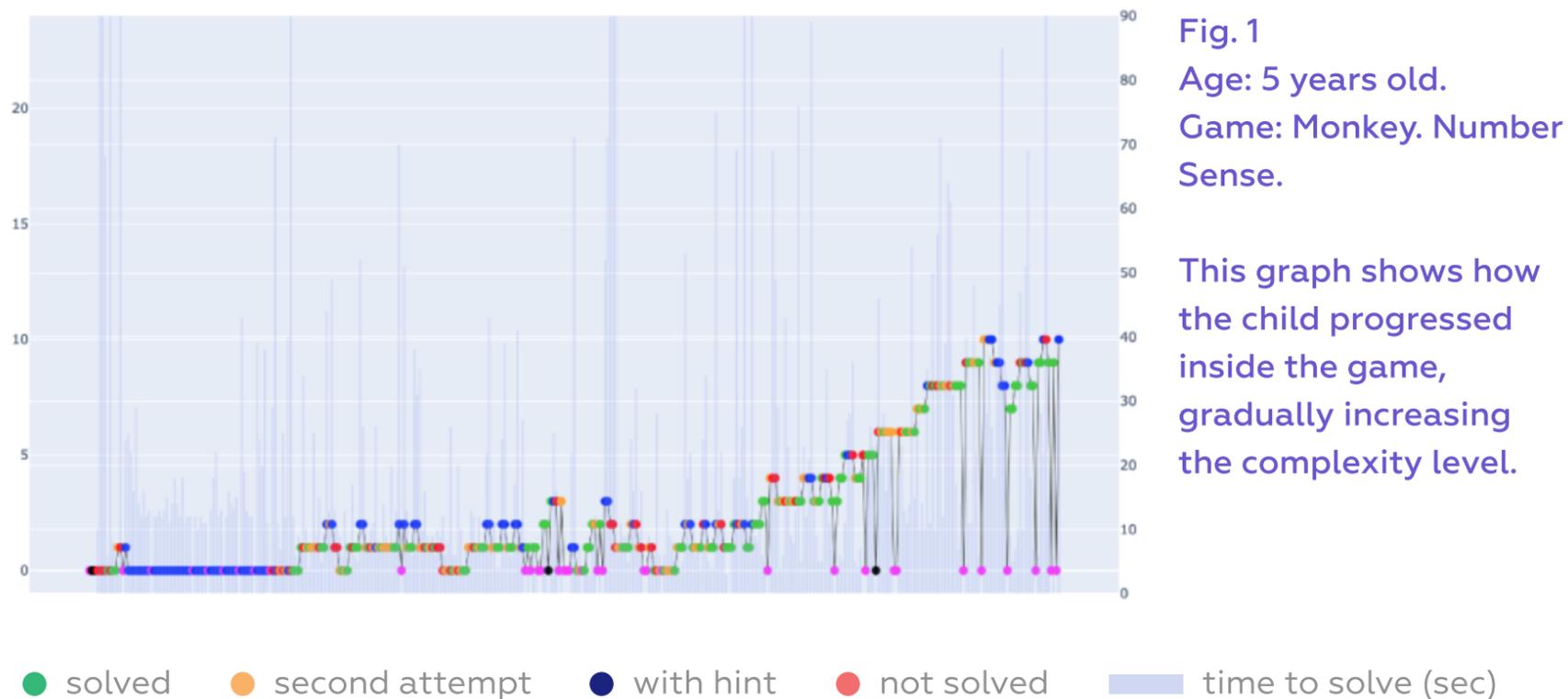
## Final challenge

At this point, children have the opportunity to apply their new knowledge in various situations, while also being encouraged to work in their proximal development zone.

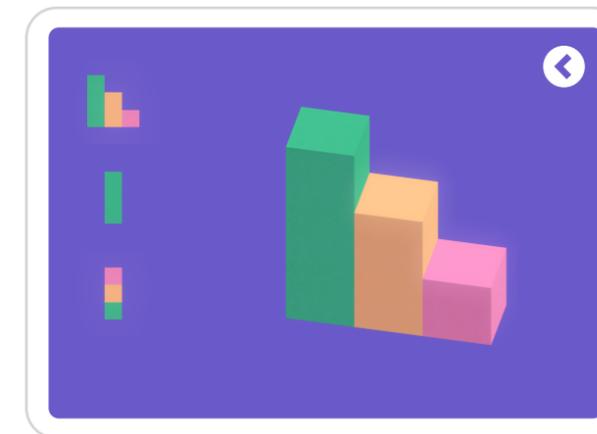
**Task:** I built a shape from cubes and drew it from two different sides. How many cubes does this shape consist of? Choose all possible answers.

# Differentiation and meeting students at their level

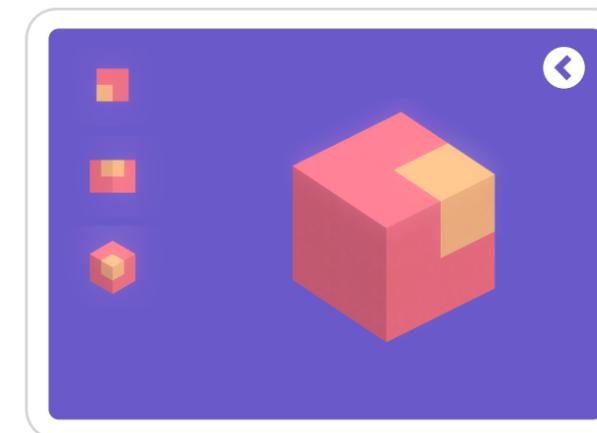
To encourage every student to realize their potential and feel capable of mastering math, every format includes low-floored, high-ceiling tasks that help children progress gradually as they gain a deep understanding of concepts and interconnecting ideas.



LEVEL	1
DIFFICULTY	low
AGE	3-4



LEVEL	5
DIFFICULTY	medium
AGE	4-5

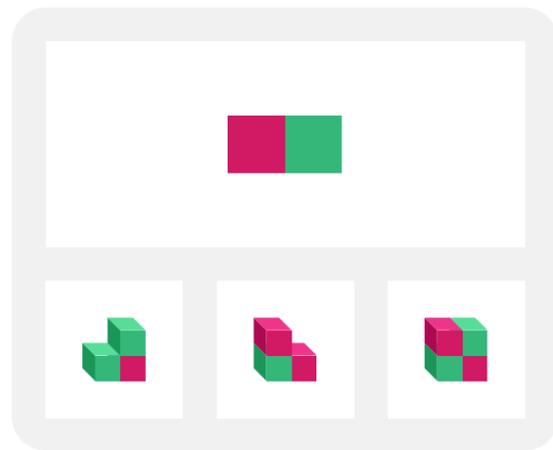


LEVEL	15
DIFFICULTY	high
AGE	5-7

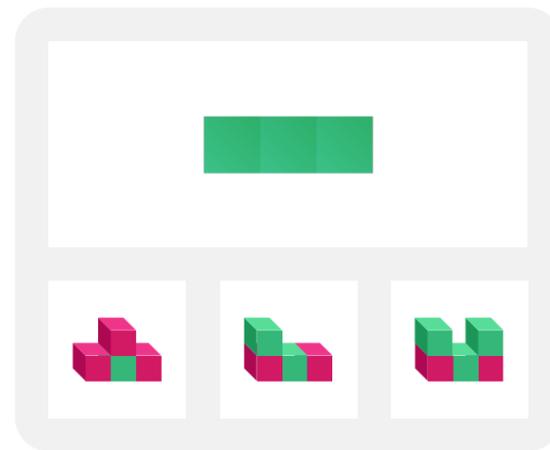
**Fig. 2**  
AR game. Various complexity levels.

# Each task has several levels of difficulty

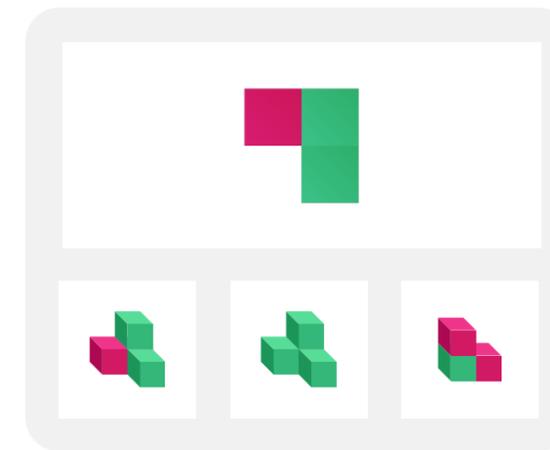
TASK Find all figures that look like this from the top.



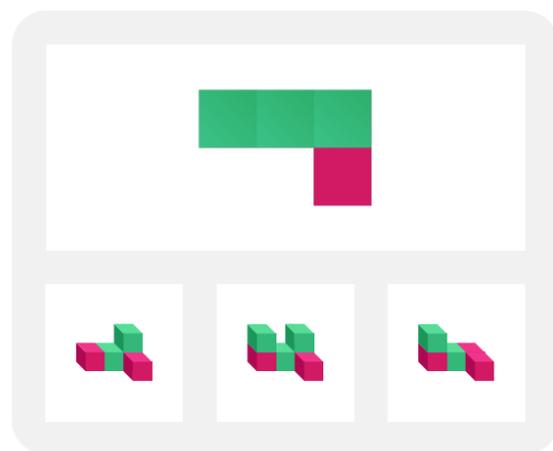
LEVEL 1  
DIFFICULTY low



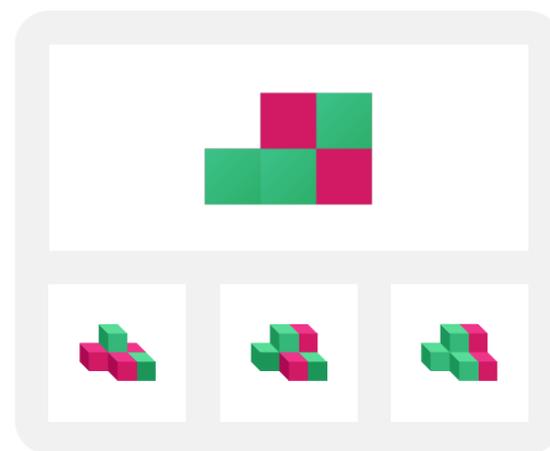
LEVEL 2  
DIFFICULTY low



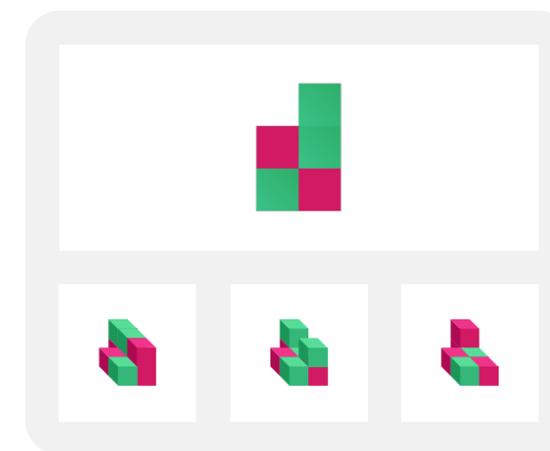
LEVEL 3  
DIFFICULTY medium



LEVEL 4  
DIFFICULTY medium



LEVEL 5  
DIFFICULTY high

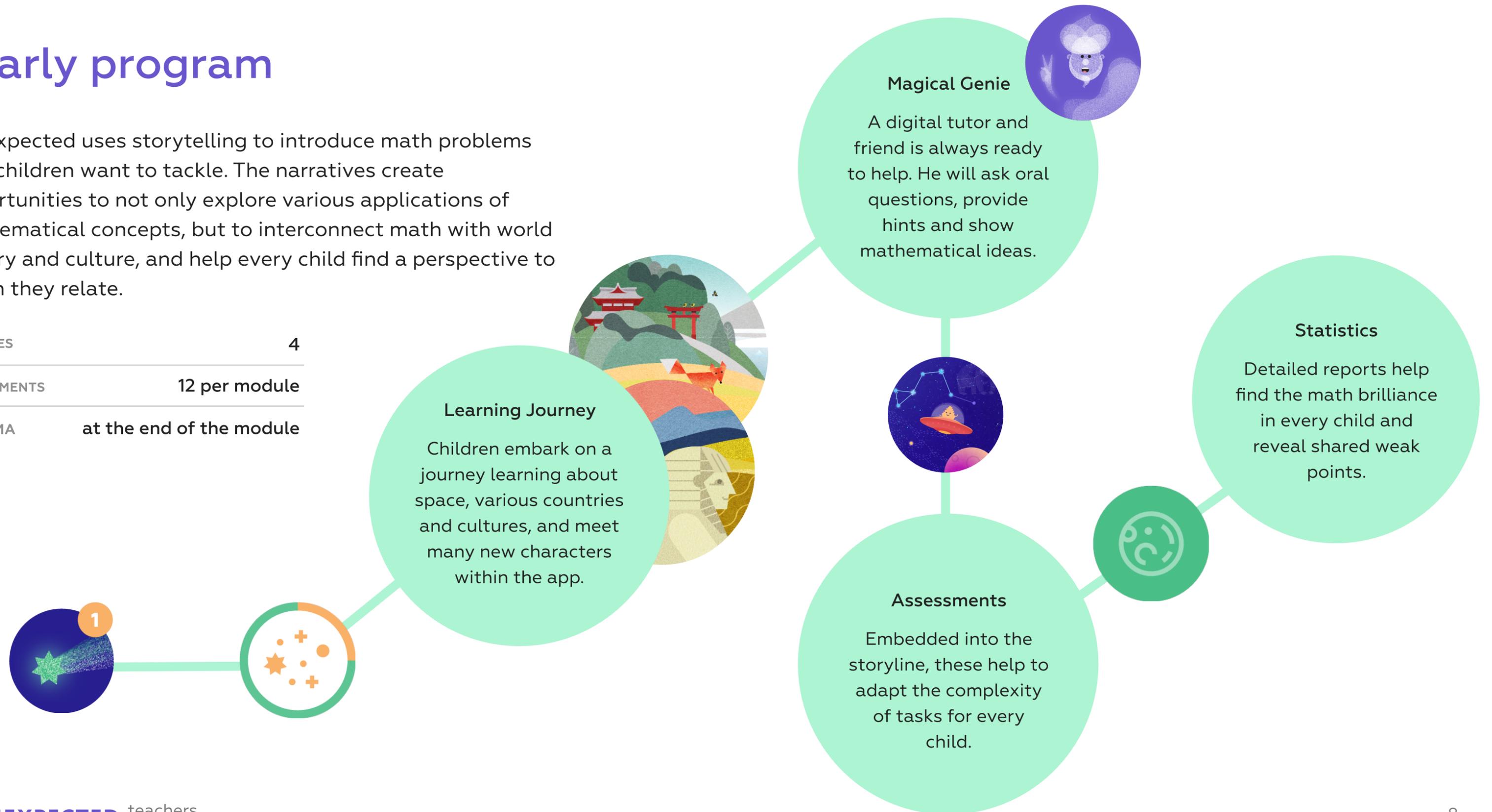


LEVEL 6  
DIFFICULTY high

# Yearly program

Funexpected uses storytelling to introduce math problems that children want to tackle. The narratives create opportunities to not only explore various applications of mathematical concepts, but to interconnect math with world history and culture, and help every child find a perspective to which they relate.

MODULES	4
ASSESSMENTS	12 per module
DIPLOMA	at the end of the module



# Curriculum

## Number Sense

- Numbers and quantities
- Addition and subtraction
- Comparing numbers
- Number line
- Skip-counting
- Word problems
- Equations
- Subitizing
- Number patterns\*
- Multiplication and division\*
- Ratios\*
- Fractions\*
- Estimation\*

## Geometry

- 2D shapes
- 3D shapes
- Relative positions
- Composing and decomposing shapes
- Measurements
- Equal shapes
- Projections\*
- Mental rotation\*
- Mental folding\*
- Symmetry\*
- Geometrical patterns\*

## Logic

- Patterns
- Interpreting schemes and models
- Understanding complex instructions
- Formal logic\*
- True and false sentences\*
- Sets and subsets\*

## Algorithms

- Simple programs
- Coordinates
- Tables
- Functions\*
- Logical operators AND, OR, NOT\*
- IF-ELSE constructions\*

\* — topics that complement the school curriculum.



Funexpected uses an interleaving approach and returns periodically to the same themes to deepen task complexity and compound development.