



Teacher's manual

A short introduction to the educational
philosophy behind KUBO



The future
starts now

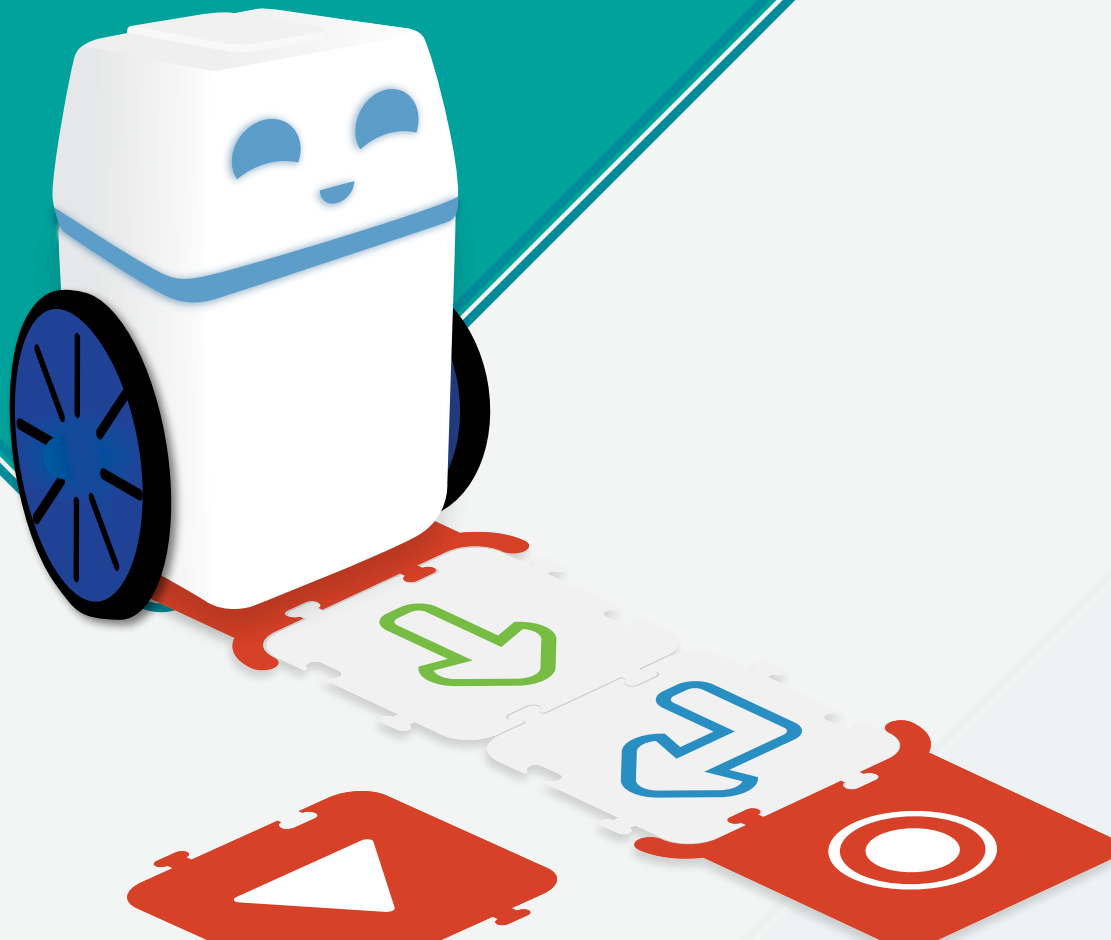
KUBO, the world's first puzzle-based educational robot, is designed to help turn students from passive consumers of technology into empowered creators.

By simplifying complex concepts, KUBO makes the abstract concrete, and teaches children how to code even before they can read and write!

KUBO and its TagTile programming language are the future of education. By combining a tangible programming language with abstract concepts in coding and computing, KUBO lays down the foundations for computational literacy. It is also designed to instruct students in four crucial 21st-century competencies: collaboration, communication, critical thinking, and creativity.

Together with its online curriculum platform, KEDU, and its curriculum, The Coding License, KUBO makes learning tangible, intuitive, and engaging.

Meet KUBO



Most educational technology falls short because few elementary school teachers are engineers and few engineers are elementary school teachers. KUBO was designed keeping pedagogical principles firmly in mind, and bridges this gap.

It greets students with a smile on its face and communicates through interactive lights, sounds, and movements. With KUBO, students can learn challenging concepts in coding, and have fun at the same time! It is also designed to teach subjects other than coding and computational thinking. In short, it is everything you need to help your students progress from one educational strength to the next.

KUBO is compact enough to be used on a standard classroom table, and can seamlessly be integrated into regular classroom teaching.

As tactile as
a TagTile

KUBO is a robot that can grow with students. TagTiles, KUBO's physical programming language, is designed like a puzzle – tangible, intuitive, and completely screenless. The tiles can be used to build increasingly complex code as students develop their capabilities, but are simple enough for beginners to engage with and understand.

Each coding set comes with a total of 46 TagTiles. They include two function sets, 26 movement tiles, 1 set of loops, and parameters from 1-10.

KUBO and coding

Coding teaches students how to break problems down into their composite parts and solve them in a logical way. KUBO and the TagTiles make abstract concepts in coding tangible, visual and simple.

KUBO's activities cover concepts like:

Sequences

Functions

Subroutines

Recursive functions

Loops

Debugging

Sequences

Sequences are one of the basic logic structures in programming, and consist of actions that are arranged in a predetermined, logical way. KUBO teaches them through its TagTiles, and activities that are designed around moving it between two or more points on a map in the most efficient way possible.



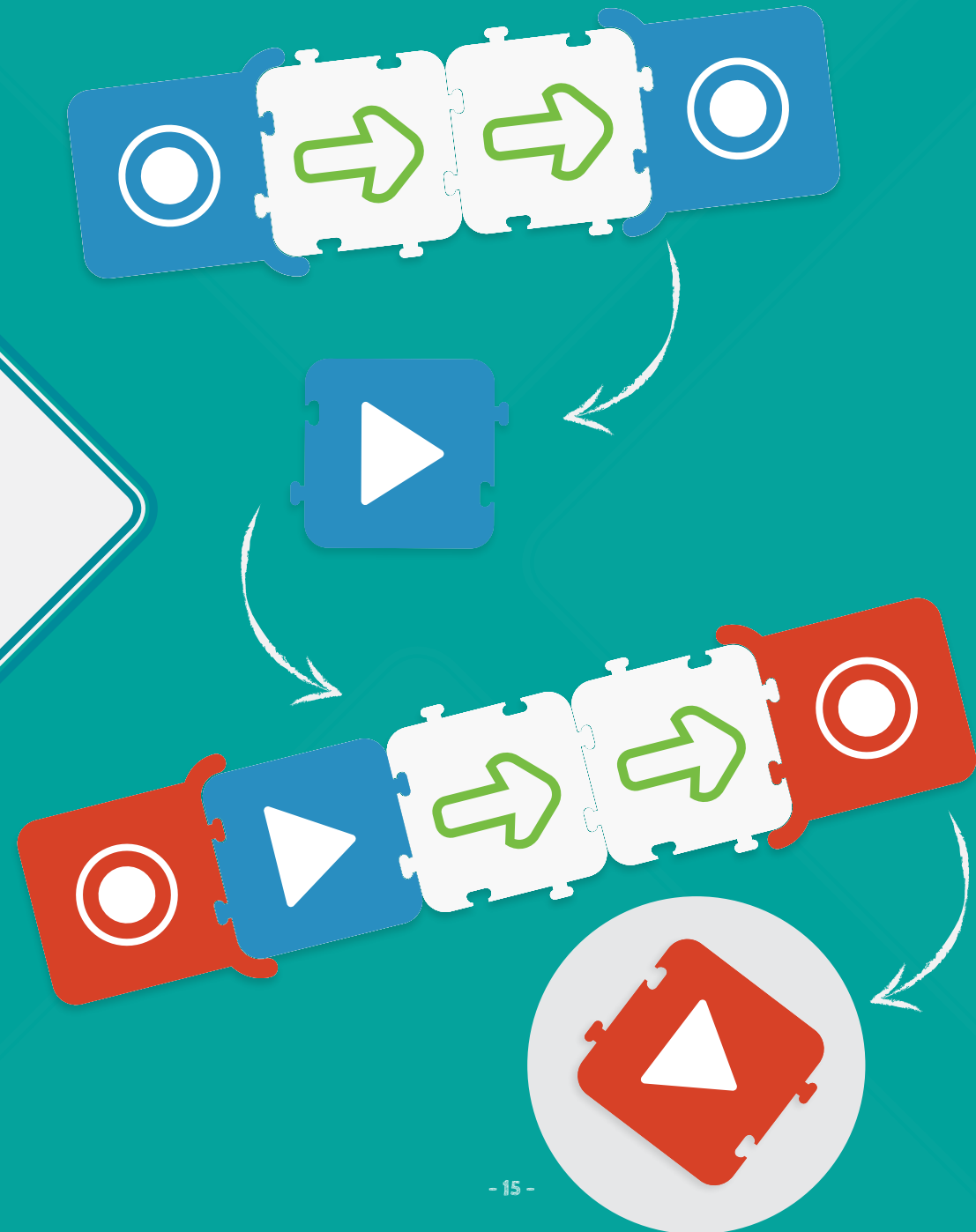
Functions

Functions combine instructions into a single line of code. Our function sets allow students to save sequences so they can be used as many times as needed. The function sets can also be used to create recursive functions and subroutines.

Subroutines

A **subroutine** is a sequence within a sequence. First, save a sequence between two function TagTiles and have KUBO drive over it.

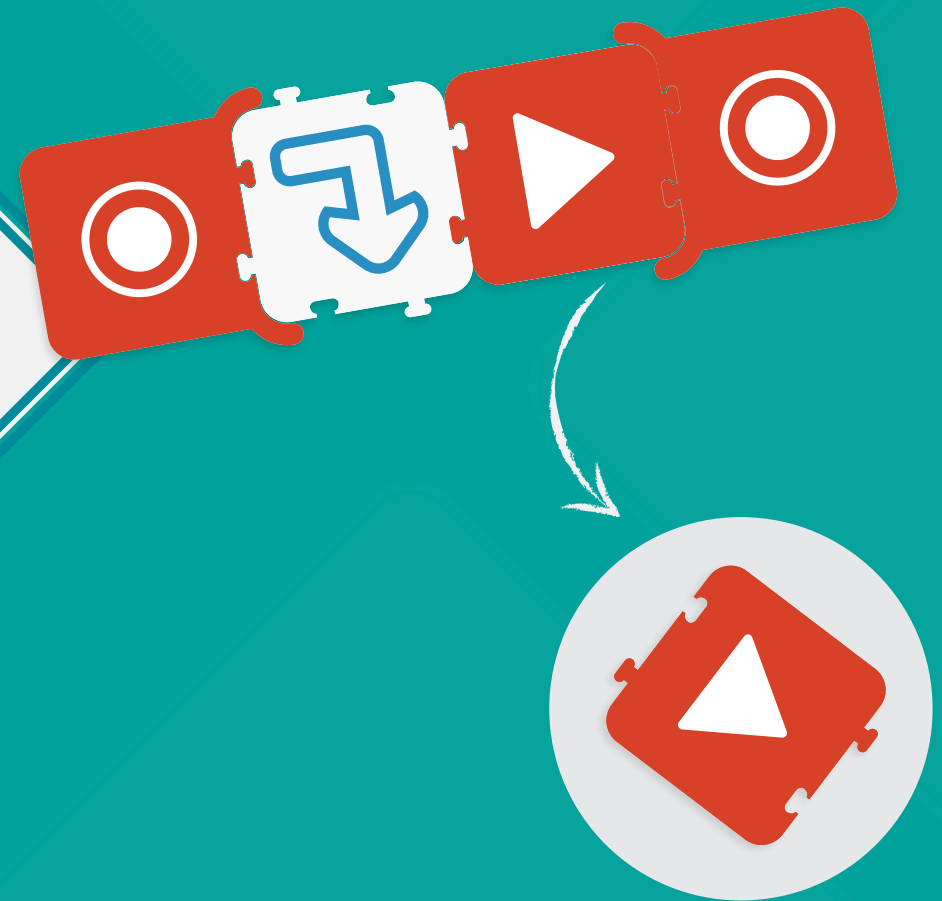
Then, place a play TagTile of the corresponding color within another function. After KUBO has memorized the new function, place it on the play TagTile to execute it.



Recursive functions

To make KUBO execute a function indefinitely, build a **recursive function** by placing a play TagTile within the function you want to build.

Once KUBO has run over it, remove the play tile and place KUBO on it. Watch as KUBO executes the sequence over and over again!



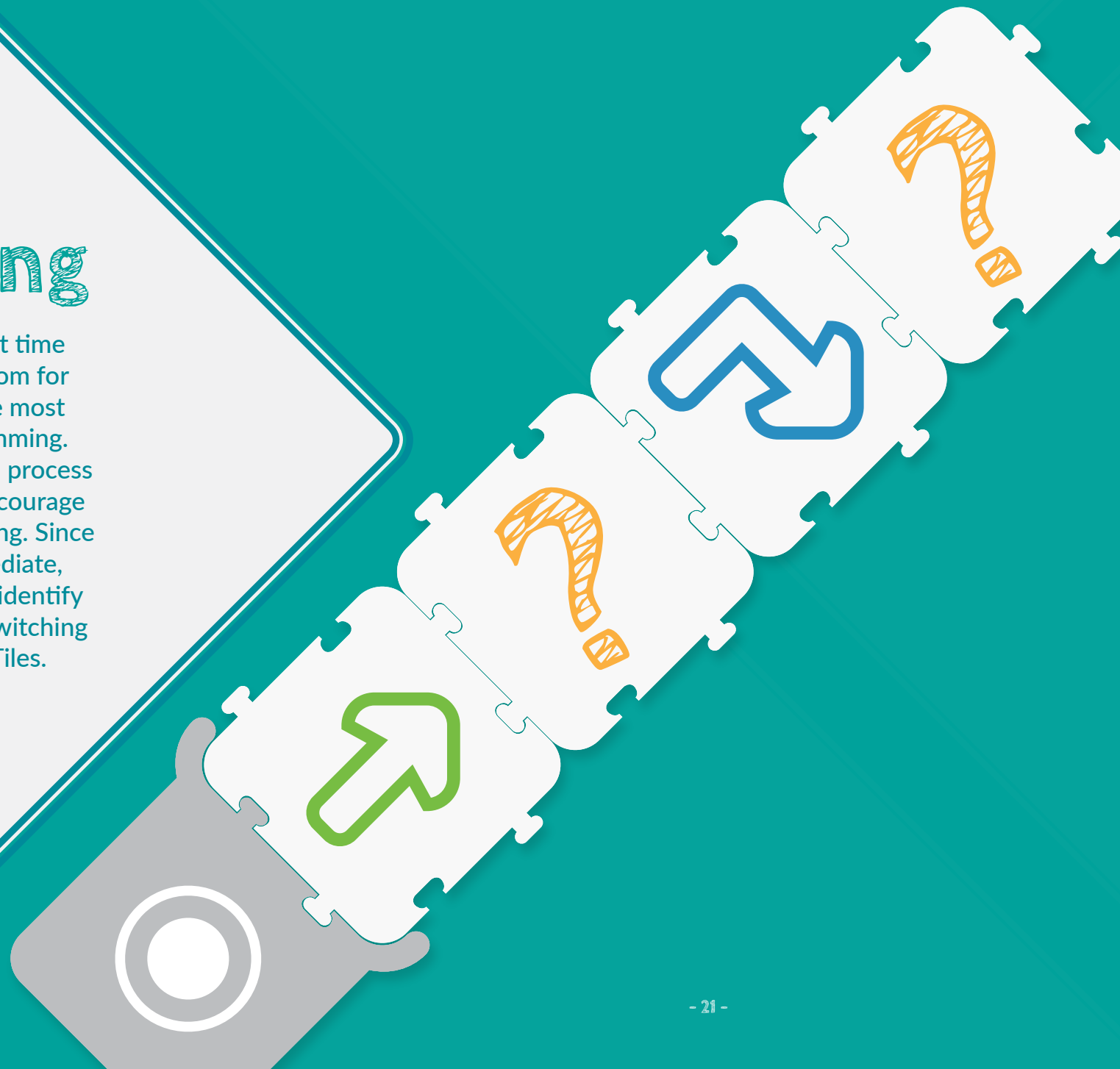
Loops

In coding, loops are used to repeat functions a preset number of times. In order to create efficient programs, children may sometimes have to program KUBO to do the same sequence of actions more than once. This is where KUBO's loop TagTiles and parameters come into play.



Debugging

No code is perfect the first time around, and identifying room for improvement is one of the most important tasks in programming. Mistakes are essential to the process of learning because they encourage reflection and problem-solving. Since KUBO's feedback is immediate, students will find it easy to identify errors and debug them by switching out and rearranging TagTiles.



Beyond computing

Coding and computational literacy are only two pieces of the puzzle, so to speak. KUBO is designed to support students as they make their way from one developmental stage to the next. It allows them to grow at their own pace, and reach their full learning potential. New subject and activity packages – including the latest spelling and language package – are always in the works.

KUBO's curriculum is also designed to foster learning in the Four Cs of 21st-century education:



Communication

While most parents and teachers encourage students to learn multiple human languages, they often forget about teaching them how to communicate with machines. This is where KUBO can help. By mediating all communication through KUBO, language and societal barriers are easier to break through. With it, your students can learn to communicate more effectively with machines, and their classmates from all walks of life!



Collaboration

In the future, students will have to work alongside both machines and people. The activities we've designed for KUBO all involve an element of collaboration – whether it's between your students and you, your students and KUBO, or KUBO and KUBO!



Creativity

With KUBO, students can tell stories and let their imaginations run wild by designing their own activities and maps.

KUBO's physical language, TagTiles, encourages a creative, visual approach to problem-solving and debugging code.



Critical thinking

Critical thinking is the fundamental difference between creators and consumers of technology. Without it, there would be no room for improvement. KUBO helps students develop this skill by encouraging them to constantly improve the programs they create. With KUBO, debugging code is as easy as switching out and rearranging TagTiles.



KEDU and the Coding License



Implementing new technology in classrooms can sometimes seem daunting. KUBO's online curriculum platform, KEDU, makes it easy. On it, you can:

1. Fill out your profile
2. Watch video tutorials
3. Keep track of assignments
4. Upload activities you're designed for KUBO
5. Download assignments other teachers have shared
6. Find KUBO's Coding License.

The Coding License is KUBO's coding activity package. It:

1. Contains activities designed around the Four Cs
2. Provides a comprehensive education in the basics of coding
3. Encourages conceptual thinking and reflection
4. Teaches children the language they need to communicate with technology

Once your students have completed every assignment, diplomas certifying their license to code can be downloaded from our website!

To get started, visit
www.kubo.education

Happy
to help



We're only an email away! If you have a question, feel free to write to us at **yourfriends@kubo-robot.com**

Visit our website, www.kubo.education/support, for more information. From lesson plans to how-to videos, we've got you covered!



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