Algorithmics

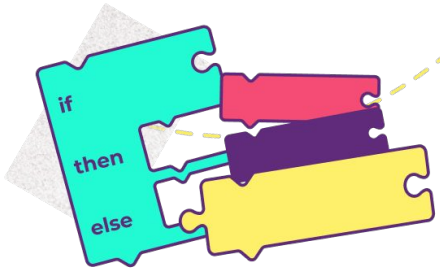
Visual programming

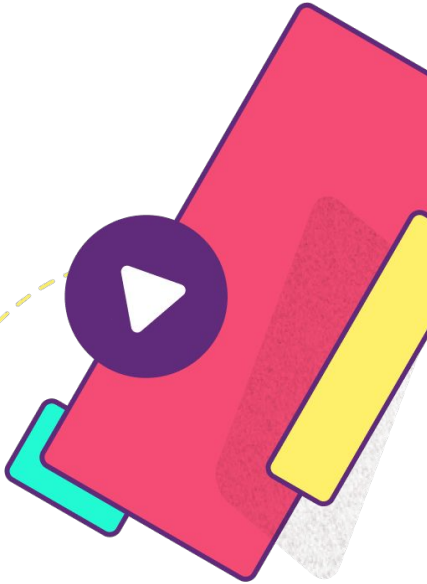
A course for kids aged 9-10

From their first line of code
to complete projects

Study. Play. Create.

The children learn programming basics in Scratch, a language designed for kids. Our students create original projects, from basic animations to real games and cartoons





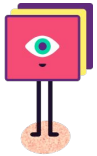
Everyone
will enjoy it!

We learn by having fun

A storyline about adventures in space helps us to retain the attention of students who find concentrating difficult

We nurture mathematical thinking

By studying the basics of programming and algorithms, we deepen students' knowledge of maths



We find their motivation

We don't do tests, instead we apply what we've learned in practice straight away, by creating projects and bringing our own little dreams to life

Your child will learn:

- About the basic concepts and practices involved in programming – from creating algorithms to correcting errors
- How to create cartoons and games in the block-based programming language Scratch, making their stories more sophisticated as their knowledge grows
- To apply the main principles of graphic design and vector graphics in practice

Your child will learn:

- To adopt a creative approach to solving problems, to experiment, and not to worry about making mistakes
- To work in a team: allocating tasks, searching for compromise, and expressing their ideas effectively
- To not fear public speaking and confidently present their projects in front of a live audience

Course structure

Module 1. Introduction

- Linear algorithm
- Loops
- Initial arrangement
- Events
- Project. Showpiece

Module 2. Space

- Coordinates
- Turns and direction
- Rotation and degrees
- Messages
- Project. Cartoon

Module 3. Game creation

- Selection conditions and operators
- Change of coordinates
- Procedures
- Game planning
- *Testing games
- Game presentation

Module 4. Logics

- AND/OR/NOT logical operators
- Conditional loops
- Random numbers and value ranges
- *Coordinate areas
- Group project
- Group project. Refinement and presentation

Module 5. Variables

- Variables in loops
- Data types and operators
- Variables in games
- *Variable as a parameter
- *Chat bot Project
- Finalization and presentation of the project

Module 6. Clones

- **Classes and objects
- **Local and global variables
- *** Interfaces
- ***Creating the "Mirrors" game
- ***Completing the “Mirrors” game

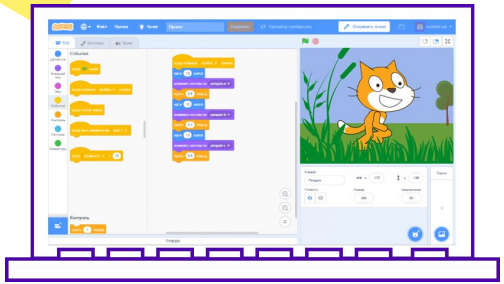
Module 7. Final project

- **Preparing for the final project
- ***Completion of the final project
- ** Graduation. Visual Programming

* — lessons with a star are conducted for courses designed for 28, 32 and 36 classes;
** — lessons with two stars are conducted for courses designed for 32 and 36 classes.
*** — lessons with three stars are conducted for courses designed for 36 classes.

What is Scratch?

Scratch is a visual programming language created specially for teaching kids:



Their first encounter with programming

In Scratch, programs are assembled using blocks, just like Lego: the child starts learning through play rather than memorizing complicated syntax

A fast start

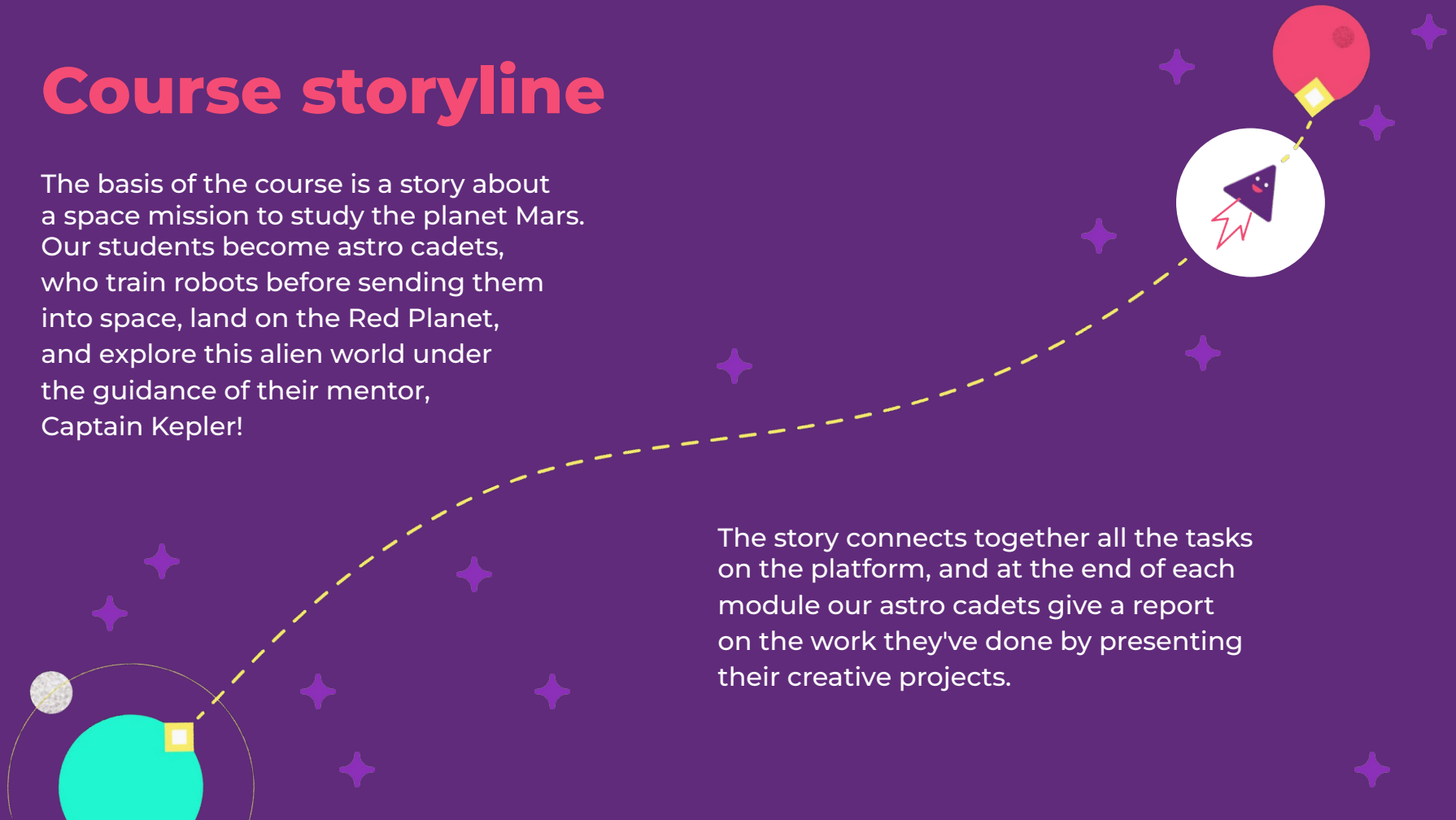
Thanks to Scratch, children can progress quickly from generating ideas to launching their first program, without losing their interest and motivation

Developing algorithmic thinking

Scratch offers the best way to train algorithmic thinking, which will help your child not only in programming, but in their wider studies, career and everyday life

Course storyline

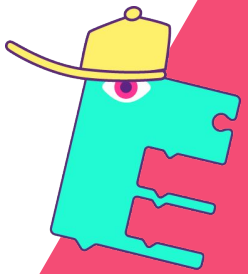
The basis of the course is a story about a space mission to study the planet Mars. Our students become astro cadets, who train robots before sending them into space, land on the Red Planet, and explore this alien world under the guidance of their mentor, Captain Kepler!



The story connects together all the tasks on the platform, and at the end of each module our astro cadets give a report on the work they've done by presenting their creative projects.

A project-based approach

- Our children create mini-projects right from their first lessons, applying the knowledge they've gained in practice
- Kids share their projects with their classmates directly in the platform, and learn to give and receive feedback
- At the end of each module, they present a full individual or group project



What are our classes like?

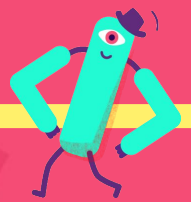
- **Online** or **at the Algorithmics** school in your city
- In groups of **up to 6** online or up to **12** offline
- Classes last for **90 minutes** with a break in the middle
- **1-2 times a week** , at a time and on a day that's convenient to you

The teacher explains the material in an interesting way and **gets the kids interested in the new topic**

Your child won't ever fall behind in the program: **any classes they miss can be taken on the platform,** 24/7

You won't need to check any homework: at Algorithmics, **there are no obligatory homework tasks**

You'll be given **access to the platform** and will be able to follow your child's progress



How much does it cost?

starting at ___ per class

4 classes

Online

_____

_____ per class

Offline

_____

_____ per class

18 classes

5-10%

Online

_____ _____

_____ per class

Offline

_____ _____

_____ per class

36 classes

10-15%

Online

_____ _____

_____ per class

Offline

_____ _____

_____ per class

Why do people choose Algorithmics?

- The curriculums for all our courses are developed by a team of professional **educators, pedagogues and psychologists**
- Algorithmics' **teachers** talk to the kids in understandable language, love their subject and know how to captivate children
- Our **IT learning platform** is 3 in 1: it's a smart task book, an environment for creating projects, and a community of shared interests

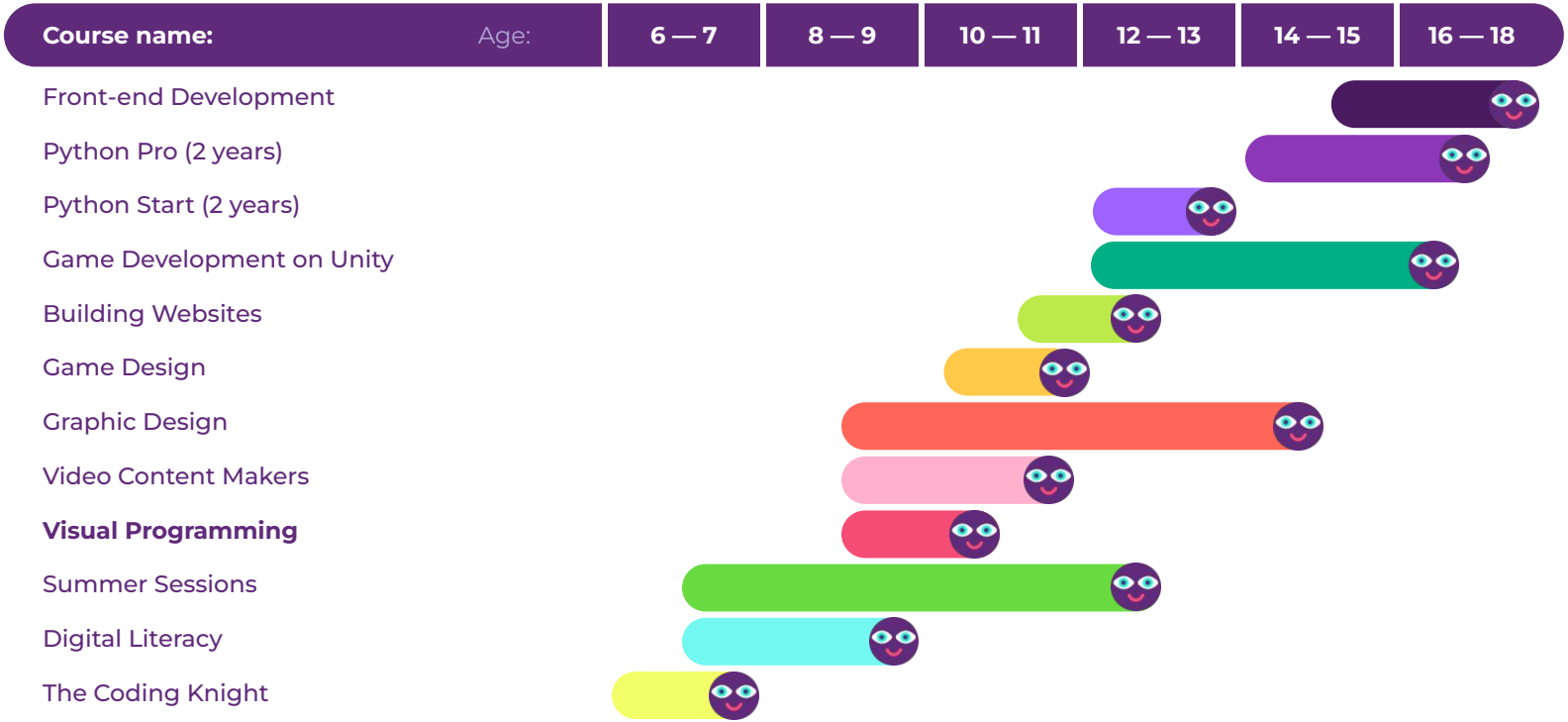
Algorithmics

International School of Programming
for children aged 6 to 18

- 1 100 000 graduates
- 90+ countries
- 515 partners

Courses for kids aged 6 to 18

Kids can start studying at Algorithmics at any age. At the end of the course, students can move straight on to the next one to continue studying in the new academic year



Algorithmics

Book a place in one of our groups

Please wait for our manager to call you and help you select a class start date that works for you

[link to the website]