



# SHAPING THE NEXT AI INNOVATOR

FOSTERING 21<sup>ST</sup> CENTURY CORE SKILLS



# Computational Thinking for Future Leaders

Shaping the next AI innovator

## **Why should students learn computational thinking (CT)? \_\_\_\_\_ 4**

CT improves academic results	4
CT develops soft skills	4
CT prepares students for 21 <sup>st</sup> century	4

## **Why Coding Galaxy? \_\_\_\_\_ 5**

Certified educational quality	5
Comprehensive curriculum to grow students from CT to AI	6
Complete learning resources to make teaching super-easy	7

## **A complete learning journey in modern classroom \_\_\_\_\_ 8**

Interactive teaching	9
Collaborative training	10
Boost students' creativity	11



**Teaching and learning with mobile technology** \_\_\_\_\_ **12**

- Unplugged activities 13
- Game-based learning experiences 14
- Collaborative leadership skill practices 15
- All-in-one online teaching tool and measurement 16

**After-school and expanded learning** \_\_\_\_\_ **18**

- Coding Galaxy’s learning community 19
- Learning Kit – self-paced learning 20

**Getting started** \_\_\_\_\_ **21**

- Explorer Program 22
- Bring Coding Galaxy to your classroom 23

# Shaping the next generation of thinkers

From computational thinking to 21<sup>st</sup> century skills

## Why should students learn computational thinking (CT)?

There is growing recognition in the education field around the world that computational thinking is rapidly becoming a prerequisite competency for all fields. It requires students to think logically and algorithmically, and use computational tools to create and analyze wisely.



A high-quality computing education equips pupils to use computational thinking and creativity to understand and change the world.

– National curriculum in England: computing programmes of study

## Develop soft skills and get ready for the 21<sup>st</sup> century

In this globally and digitally interconnected world, if we want to prepare our children to adapt to the unexpected changes in the future, skills including communication, creativity, collaboration and critical thinking become essential.



# Certified educational quality

A revolutionary way to learn 21<sup>st</sup> century skills



“ Coding Galaxy represents **high educational quality** and is **proven to promote learning efficiently**.

“ The co-operation mode is really cleverly done... feels currently like **the most innovative and potential feature**.

“ **Comprehensive teaching materials** give lesson plans that complete the learning experience.

— KOKOA Standard

a science-based quality standard for learning solutions



In the development of Coding Galaxy, a wide range of references of education and curricula in 21<sup>st</sup> century skills were taken into account, producing an optimal delivery of knowledge and skills.



Linear Learning Approach



Enable Active Learning



Embrace Collaborative Learning

# Comprehensive curriculum to grow students from CT to AI

Full learning spectrum of Coding Galaxy

---

Build a growth mindset from an early age

## Computational Thinking and Coding Concepts

Available now

- Basic CT and programming concepts
- Block-based coding
- Collaboration and communication

**Start from age 5 or above:** Foundation, Elementary, Advanced

### Teacher driven with comprehensive curriculum

Teachers take a leading role in students' learning.

- Tools**
- Teaching Resources Portal
  - Collaborative Activity Panel
  - Learning Reports
  - Students' Mastery Analysis

## Coding with IoT and Robotics

Coming Soon

- Coding with syntax
- Internet of Things (IoT) and robotics
- Programming concepts for IoT

## Artificial Intelligence

Coming Soon

- Foundation of AI and machine learning
- Programming concepts and real life examples of AI

### Self-directed learning and project-based learning

Students create and deliver their own projects. Teachers take a supportive role.

# Complete learning resources to make teaching super-easy



Coding Galaxy has been designed to aid K-12 learners in the 21<sup>st</sup> century to develop computational thinking skills while broadening essential life skills with the 4Cs (collaboration, communication, creativity and critical thinking) and problem solving.



For ages 5-7

Getting started with computational thinking



For ages 8+

Basic concepts and problem solving



For ages 8+

Advanced concepts and interdisciplinary application

## Comprehensive teaching and learning resources

- ✓ Courseware
- ✓ Teacher dashboard
- ✓ Classroom app
- ✓ Student app
- ✓ AI learning analytics
- ✓ Learning community
- ✓ Unplugged activities

# A complete learning journey in modern classroom

Learn. Collaborate. Create. Measure.

---



## Teach & Learn

In-class teaching and learning with comprehensive courseware and interactive tools

1



## Collaborate

Foster communication and leadership skills with collaborative learning

2



## Create

Engaging learning missions boost students' creativity and encourage active learning after class

3



## Measure

Students' knowledge mastery level is assessed by technology-powered engine, pinpointing learning weaknesses and providing adaptive follow-ups to aid struggling students fill learning gaps

4



# The easiest way to achieve interactive teaching

Deliver a playful and engaging lesson



Coding Galaxy on Promethean ActivPanel\*

## Empower teacher with advanced technologies

### Teach with ease

Interactive teaching slides empower teachers to deliver clear learning concepts with activities and learning missions.

### Collaborate in class

Teachers can invite students to join collaborative missions during the class. Students need to work out the solution together to complete the challenge.

### Creative challenge

Spark students' creativity! Tasked with objectives and requirements, students create their own missions to challenge their friends.

### Extend learning after class

Assignments can be easily distribute to all students with simple steps. Assignments done in the Coding Galaxy App will have all the learning progress recorded in the Teacher Dashboard.

\*Coding Galaxy Classroom App is compatible with Promethean panels.

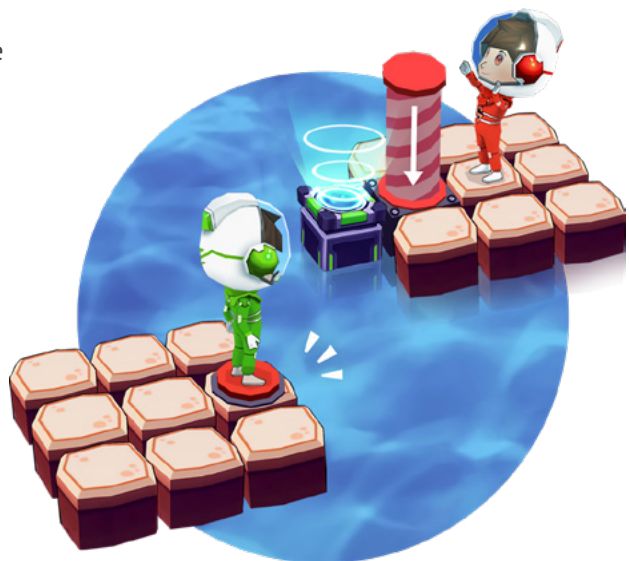
# Get students involved in collaborative training



Collaborative learning is recognized for developing higher level thinking skills and fostering interpersonal relationships. Collaborative learning in class not only reduces classroom anxiety, but also helps to engage students more.

The objective of the collaborative mission requires all members to reach their goals and escape together.

Through the mission, students not only practice their problem-solving skills, but also foster their leadership skills to communicate and help each other.



# Boost students' creativity

Creativity is about the use of imagination or original ideas to create something.

Once students mastered the concepts through activities and game missions, they can apply them in a more advanced way by thinking about and designing their own missions. *Creative Space* provides a place for students to exercise their creativity and bring the imagination to reality.



Build your missions in *Creative Space*

## Simple steps to create your own mission

Students can share their missions and invite others to play them. It gives them a sense of ownership and encourages them to connect with others in the learning community.

1. Select “**Start Point**”
2. Select “**End Point**”
3. Place “**Crystals**” and “**Obstacles**”
4. **Share** your mission to others



# Teaching and learning with mobile technology

Simplified teaching, amplified learning



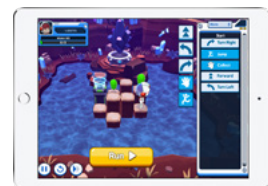
Classrooms with mobile devices provide flexibility to learners to learn at their own pace and embrace collaborative learning with the cloud-based learning environment. Teachers agree that students tend to have a higher engagement and motivation towards learning.

## Flexible learning solution for digital classrooms

To ensure all students can learn well regardless of their learning styles, Coding Galaxy combines the use of technologies and unplugged learning activities to create the best learning environment for each student.



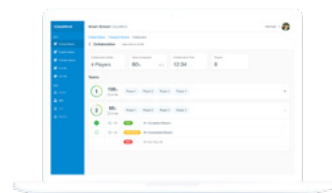
Unplugged activities



Game-based learning app



Collaborative learning missions



All-in-one Teacher Dashboard

# Enrich the learning experience unplugged

Flexible teaching aid that inspires the class

Motivate and enhance learning experience with AR



The courses contain more than 50 unplugged learning activities to facilitate teaching and learning. Exciting board games, game pieces and cards allow students to explore and visualize programming concepts before they code.

## Collaborative board game

The mission requires students to discuss their strategy to save Codi, their robot friend, together. Students experience how parallel computing works while fostering soft skills.

- ✓ Communication skills
- ✓ Collaboration skills
- ✓ Leadership skills



# Game-based learning experiences

## Achievement-driven learning journey

---

Coding Galaxy Student App contains over 200 self-learning missions on an ascending scale of difficulty with an exciting storyline. Students can **actively explore learned concepts and be evaluated through the process of problem solving.**



Functions



Loops

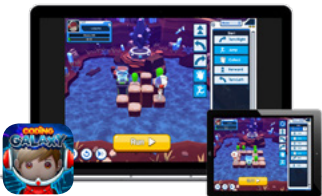


Conditionals



### AR assisted learning

Augmented Reality (AR) enables students to visualize the learning concepts such as relative direction.



### Support cross-platform



### Micro-response tracking

Learning behavior is captured and analyzed in the app. Teachers are able to gain insight into students' learning patterns and styles and enhance their teaching efficiency.

# Team up for better learning

An engaging activity of collaborative problem solving



...The co-operation mode is really cleverly done and requires more complex thinking than the single game play. Co-operation mode feels currently like **the most innovative and potential feature** in terms of game play. ...

– KOKOA Standard

Students work in teams to solve missions together. They help each other by unlocking the gates and clearing the way to the goal, while teacher can monitor the progress of all teams on the Teacher Dashboard.



## 1. Team up

Easy grouping in classroom

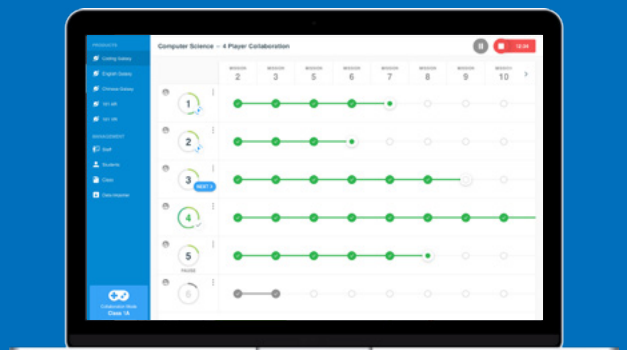


## 2. Collaborate

Face-to-face communication

## 3. Real-time monitoring

The teacher can easily divide the class into groups with the Teacher Dashboard. Once the teams are set up, students' devices will receive an invitation to start the mission immediately. The teacher can pause the mission anytime if needed.

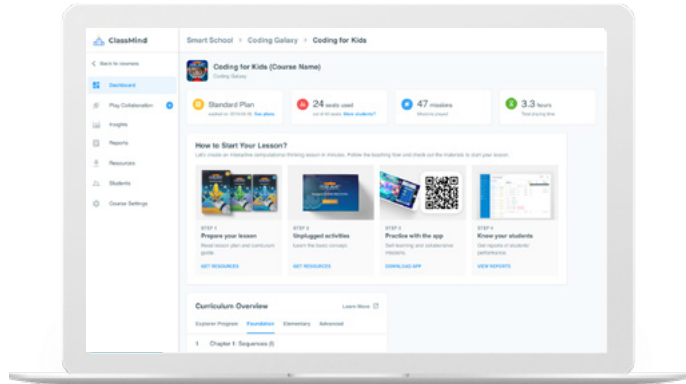


# All-in-one online teaching tool and measurement

Boost learning effectiveness with AI analytics

Teacher Dashboard is dedicated for teachers to monitor and manage class and students' performance. Intelligent learning reports provide actionable insights for teacher to enhance teaching efficiency and effectiveness.

- ✔ Class management
- ✔ Teaching resources
- ✔ Students' reports
- ✔ Learning insights



## Digital teaching and learning resources

- Get access to all resources on the Teacher Dashboard
- Available in multiple languages
- Prepare your teaching anytime



## Built-in collaboration trainer

- Start collaborative learning with a few clicks
- Real-time monitor teams' progress
- Challenge your students with different types of collaborative missions



## Students' reports and learning insights

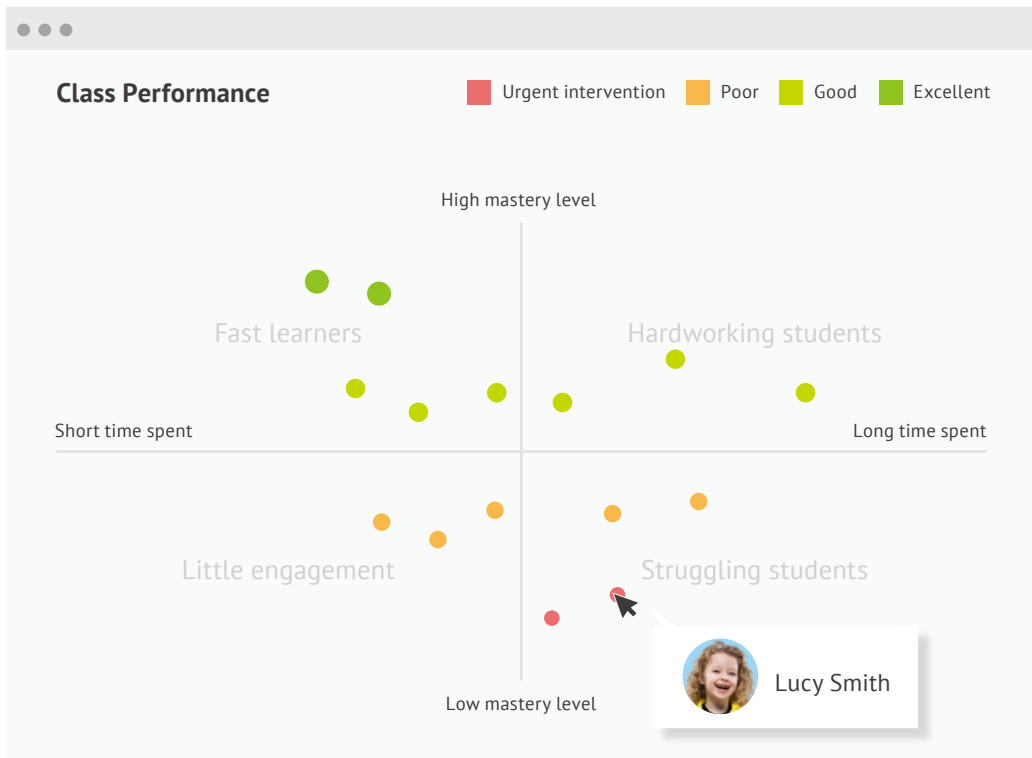
- Learning records
- Mission solutions
- Knowledge mastery level



# From insights to actions

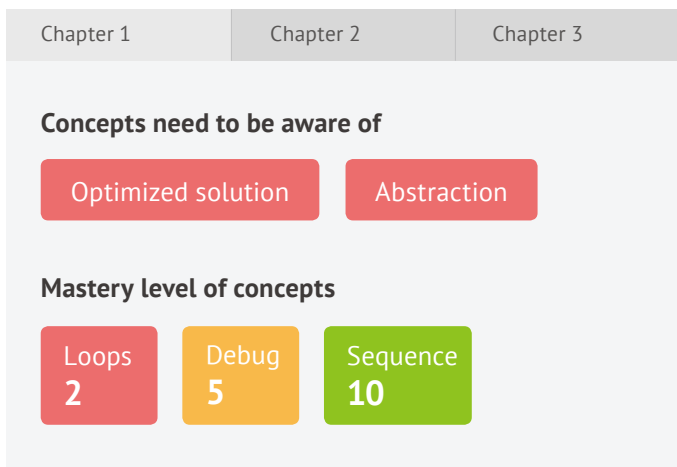
Recommended actionable insights to fill learning gaps

Teacher can view the class knowledge mastery level and learning behavior at a glance, spotting students who need urgent intervention.



## Advanced learning analytics

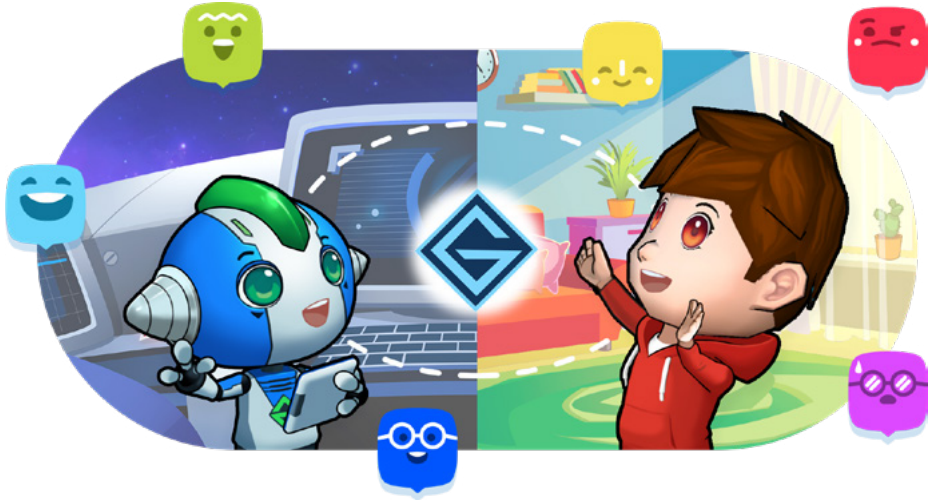
Class analysis helps teachers to monitor the progress and pinpoint the weaknesses in learning.



# After-school and expanded learning

Get connected with the world's largest learning community

---



Integrated with Edmodo



## Extend the classroom after class

Digital assignments extend learning after class with Coding Galaxy in a safe social environment.



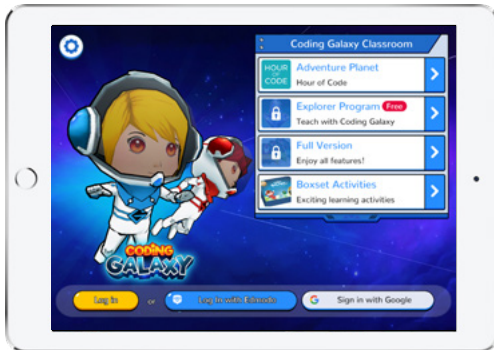
## Start a discussion with the global community

Millions of teachers have used Edmodo to reach their students, improve learning outcomes, and get more out of their lesson plans. You can discuss with teachers worldwide and get inspired anytime.

# Keep your teaching on track

## Integration with Edmodo to add premium features

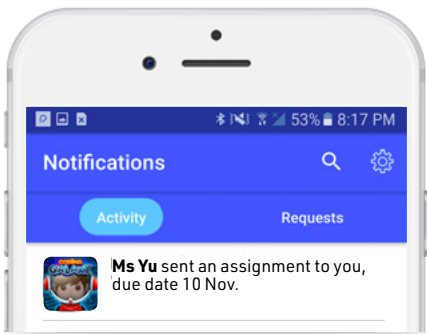
Teachers can enjoy the premium features including quick login in the app, assignment distribution and gradebook integration.



### Quick login

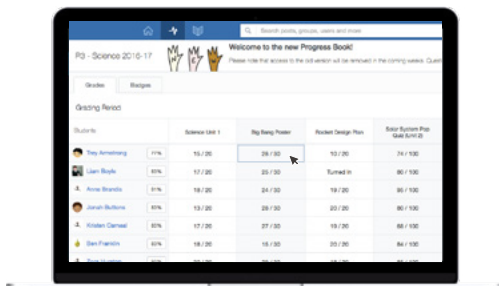


Simply pair with your Edmodo account on Coding Galaxy App. All the teaching and learning progress will be synchronized automatically.



### Friendly reminders and notifications

After giving out assignments to the class, a notification will be delivered to all students in the class, and they can start the assignment anytime.



### Gradebook and badges

Learning progress will be fed to the Edmodo gradebook. Teachers can view students' learning progress at a glance. Students are rewarded with Coding Galaxy badges by teachers.

# Learning Kit – self-paced learning

Empower kids to be problem solvers and critical thinkers



## Coding Galaxy Learning Kit

For ages 6+

Best learning takes place when the learner takes charge. Coding Galaxy Learning Kit provides the opportunity for parents and kids to learn and grow together.

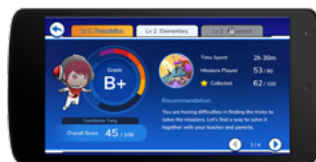
### Prepare for advanced coding and STEM education



Guidebook and Activity Books



Board game and learning activities



Personal learning reports

Decomposition & Sequences

1

Evaluation & Debugging

2

Events

3

Parallelism & Scheduling

4

Loop & Pattern Recognition

5

Functions & Abstraction

6

Conditionals & Flowchart

7



Problem Solver

## Scan and discover!

Turn on **AR mode** and scan the tracker in Coding Galaxy missions



Scan with the app

### Where to scan AR?

1. Open Coding Galaxy App
2. Choose a mission to play
3. Turn on the AR mode on the left
4. Scan the AR tracker above\*

\*For devices which support AR Kit, AR mode does not require scanning the tracker.



**Don't have Coding Galaxy App?**  
Scan the QR code to download

# Start your computational thinking classes!

## Explorer Program

Join the Coding Galaxy Explorer Program, a clear and structured guide for teaching computational thinking.

- Free course materials and lesson plans for 3 lessons
- 1 class with 2 students accounts
- 14-day free trial



**Get FREE resources now!**

<https://bit.ly/2MfjQ82>



**Join us on Edmodo to get the latest news!**



Edmodo : Coding Galaxy Classroom

<https://edmo.do/j/jqxdpp>

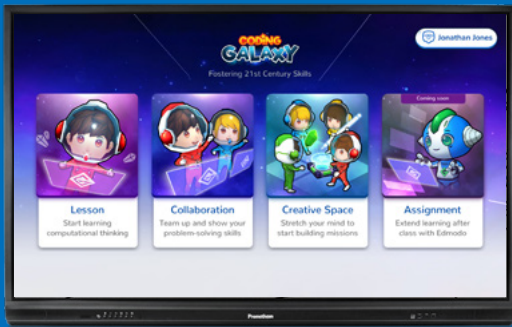
GO



# Bring Coding Galaxy to your classroom

Coding Galaxy fits for any learning environment, from modern classrooms settings to self-paced learning. Get one for your class now!

*For modern classrooms*



## Classroom App

Fit for Promethean ActivPanel, classroom teaching

- ✔ Interactive lessons
- ✔ Collaboration (2 or 4 players)
- ✔ Creative Space

*For co-learning spaces and learning centers*



## Lesson Kit

Fit for flexible classroom settings, personalized learning approach

- ✔ Teaching plans
- ✔ E-worksheets
- ✔ Student app
- ✔ Co-learning tool
- ✔ Class reports
- ✔ Learning analytics

## Additional materials

**Classroom Box (40 students) :** Foundation Class Box   Elementary Class Box   Advanced Class Box



*Self-paced learning for ages 6+*

## Learning Kit **Coming Soon**

- ✔ Guidebook
- ✔ 3 activity books
- ✔ AR game
- ✔ 45 unplugged activities
- ✔ Self-learning app
- ✔ Learning analytics for kids

