Journey to the Tablet Kingdom

⚠️ SUMMARY:

In the Introductory lesson, the students will practice passing mazes and learn how to orally describe the character's actions required for passing the maze with the help of cards and a tablet.

To complete some levels on a tablet, the students will carefully study the worksheet (level 5 - they will find all the figures with numbers on the worksheets).

There are additional tasks on the worksheet; use them to organize the activities of students who complete tasks faster than others, or invite them to complete these tasks at home.

💾 LINKS AND ACCESSORIES:

- task on the platform (in the Coding Knight application);
- worksheet;
- a set of didactic cards;
- demonstration maze;
- mazes for games;
- a 3D toy;
- pencils/markers.

⏩ THE DAY BEFORE THE LESSON:

- ❑ complete the task levels on the platform (in the Coding Knight app);
- ❑ check the battery level on the tablets, put them on charge if necessary;
- ❑ install the Coding Knight app from the Google Play Store on tablets;
- ❑ print logins and passwords for the Algorithmics students;
- ❑ print the work sheets for each student on two sides of A4 sheets;
- ❑ print and laminate the didactic cards, one set of cards for 2 students;
- ❑ print the mazes for the games, one maze is intended for 4-6 students.

🔖 BEFORE THE LESSON STARTS:

- ❑ distribute the tablets among the students;
- ❑ prepare the tablets: turn them on, go to the Coding Knight app, and enter the login/password of the child to whom the tablet is assigned for this lesson;
- ❑ if the Coding Knight app does not work, then go to the Google Chrome browser, type learn.alg.academy, and enter the logins/passwords of the children the tablets are assigned to;
- ❑ distribute the work sheets to the students.

🎯 EDUCATIONAL OUTCOMES OF THE LESSON

After the lesson, the students will:	*The result is achieved when the students:*
• know what a maze is; • can pass mazes using the one-hand rule; • with the help of cards, can describe the Knight's actions when he is passing the maze; • can control the Knight when he is passing the maze using an app on a tablet.	• can perform tasks with mazes; • have successfully completed the main tasks in the Coding Knight application.

Ideas:

★ the students want to study in the Algorithmics school.

RECOMMENDED LESSON STRUCTURE

Time	Stage	Stage aims
5 min 	Greeting and acquaintance	❏ organize a group acquaintance.
15 min 	New topic: "Mazes"	❏ discuss what a maze is and methods for passing mazes; ❏ have the students complete the tasks in their workbooks; ❏ organize the students' activity before working with the computers: passing a maze with the help of cards, orally;
5 min 	Physical activity	❏ conduct an action game aimed at reinforcing the theory;
13 min 	Working on tablets	❏ have the kids complete the tasks on the tablets;
5 min 	Wrapping up. Reflection	❏ discuss the lesson outcomes.
10-15 min 	Communication with parents	❏ tell the parents about the course and how it contributes to forming logical and algorithmic thinking in children; ❏ convince the parents of the course's quality, answer their questions, and explain the importance of studying programming.

Greeting and acquaintance

(5 min)

During this stage, you need to set the students' minds on educational activities, to interest them.

> *"Good afternoon! My name is... . In our classes, we'll travel to the Tablet Kingdom and get acquainted with its inhabitants. Why do you think it is called this and where is it located? (The Tablet Kingdom is located inside the tablet.) We are going there to discover many different programs, games, and applications on the tablet. That's where we can learn what programming is."*

Getting acquainted with the children should be carried out in a playful manner, you can start the game by playing yourself.

> *"Before we go to the Tablet Kingdom, we need to get ready for the road ahead, and everyone should take one item with them. This item's name should begin with the first*

letter of your name (simplified version: name an item that they can take with them; more complex version: the item should rhyme with their name).
The first participant introduces themselves and says what they're taking, for example, “I'm John, and I'm taking games with me.” The next participant repeats what the previous one said and talks about themselves, for example: "This is John, he will take games with him. I'm Tanya, I'll take my phone with me."
Each subsequent participant repeats what was said before them and adds some words about themselves."

New topic: "Mazes"

(12 min)

At the stage of completing tasks 1-3 in the worksheet, you need to discuss what a maze is, and practice describing how to pass algorithms with the help of flashcards to make it easier for them to complete the tasks on the tablet.

"Great! Now we're ready to go to the Tablet Kingdom. Look carefully at your worksheet. What do you see on it? (Knight, castle, dragon, maze).
Just look how many mazes there are. The path to the Tablet Kingdom will be interesting. What is a maze? (A maze is a set of crossing paths. Not all paths lead to an exit, which is the goal. You can get lost in a maze).
How to get through a maze without getting lost?
One of the rules says that for this, you should move relative to one side and turn in one and the same direction. Let's consider this through the example.
To perform this exercise, you will need a 3D toy, preferably with arms or paws (no more than 10 cm in height). The event format depends on the number of children in the Introductory lesson.
If there are not many children and they can gather around the table comfortably, then take the printed maze and place the character at its start.
If it's not to gather all the children around the table, then display the algorithm on the screen using a projector. Place the toy at the maze's start so that it looks like the character is about to walk through the maze.
Using one of the demonstration forms, proceed with further explanations.
We will go through our maze according to the right-hand rule. Where is your right hand? Lift it up. Is this the right hand/paw of our hero?
We will go along the line that is to the right of our character. If suddenly the line is interrupted, then we'll turn to the right . It may take a long time, but we'll definitely get to our goal and not get lost.
Pass the maze using the right-hand rule.

*Look at **task 1** on your worksheets. Where is the Knight hurrying to? (To the castle). We will help the Knight get to the castle and draw a path for him. Let's go through the maze using the right hand rule.*

*Look at **task 2**. Is it possible to pass this maze? (Yes).*
Complete the task.

> When completing task 2, you can hold a small competition; for example, invite the kids to draw a path for the Knight with an uninterrupted line, or draw a path against the clock.
> *Look at **task 3**. How can we help the Knight get to his goal? (Draw arrows). Draw the Knight's path to the goal.*
> *What actions should he perform to get to the flag?*
> *Will the Knight reach the flag if he goes a step forward–step up–step forward–step down–step forward?*
> Draw the actions on the board using arrows. Say them out loud and ask the children to swipe the cells with their fingers."

Physical activity

(5 min.)

Conduct a game activity to reinforce the principles of composing algorithms with the help of arrow commands.

> *"We did a great job together with you. It's time to do a little warm-up. It will be an algorithmic battle."*

The game "Algorithmic battle"

To conduct the game, you will need the cards with the commands.

Using these cards, you need to lay out the dance algorithm on the board, and the children will repeat it. To add dynamics, you can turn on music. For example, step forward–step forward–step back–step right–step left–step forward.

Complication:

You can divide the children into pairs and give each pair a task to compose their own dance: put the cards on the table and demonstrate it. The winners can be determined both by the complexity of their algorithms and by the quality of performance.

Working on tablets

(13 min)

Hand out the tablets to the students, logged in with the logins and passwords. The students should open **task 1.**

Further, especially when they solve their first tasks, they should work individually. However, you should pay attention to the difficulties the children experience, and lead them to the correct solution to the problem with your guiding questions.

You can demonstrate the first level on the screen using a projector and explain how to perform the necessary actions, passing it together with the students.

To complete levels 4 and 6, you have to use the worksheets.

If you notice that the children are tired during the working process, or they become less active or lose focus when solving tasks, then take a short warm-up with physical activity. For example, you can do the following:

Children stand in a line or are scattered.

The teacher explains the rules of the game: for the word "earth" the children will put

their hands down, for the word "water" they stretch their hands forward, for the word "fire" they raise their hands up, for the word "air" they stretch their arms forward and rotate their hands.

The teacher pronounces the words randomly, the children perform the appropriate movements.

Wrapping up. Reflection

(5 min)

Wrap up the lesson. Discuss what the students learned in class today, what they liked, what they managed to do or what they didn't.

> *"Together with the Coding Knight, we have just started our journey through the Tablet Kingdom. But then we encountered some trouble. A strange storm began, and all the energy in the Kingdom disappeared afterwards. The Knight is calling for our help in restoring order in the Kingdom during the following lessons. Are you ready to help him?*
> *Our lesson is coming to an end.*
> *I suggest you play the game "Finish the phrase". I'm going to say a phrase, and you need to finish it.*
> - *Today in class I learned...*
> - *I've managed to...*
> - *In the next lesson, I want to... help the Coding Knight restore the Tablet Kingdom."*

To assess the emotional state of the students after the lesson, you can ask them to paint the Knight on the last lesson page with one of the colors.

Examples of colors:
green — the lesson went well, I've done everything effectively;
yellow — the lesson went well, but I had some difficulties;
red — I was not interested and the lesson was very difficult.
Colors and their meanings can be discussed with students.

Communication with parents

(10-15 min)

When communicating with parents, invite the children to complete tasks with mazes that can be solved by several people at the same time.