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Photon Board Games

1. **Classic board game:** Let's play with Photon
2. **Novelty board game:** A new take on the classic board game
3. **Mathematical moves:** Become the next maths genius
4. **Get to know your classmates:** Did you know this about Jack?
5. **Words race:** Dictionary? No need, we can manage!
6. **Boggle on the mat:** Much more engaging than Scrabble
7. **Smart moves:** Always plan ahead
8. **Bingo with Photon:** Fancy a game?
9. **Police and thief (two Photons):** Robo-chase full of excitement
10. **Mathematical rays:** Build rays using equations

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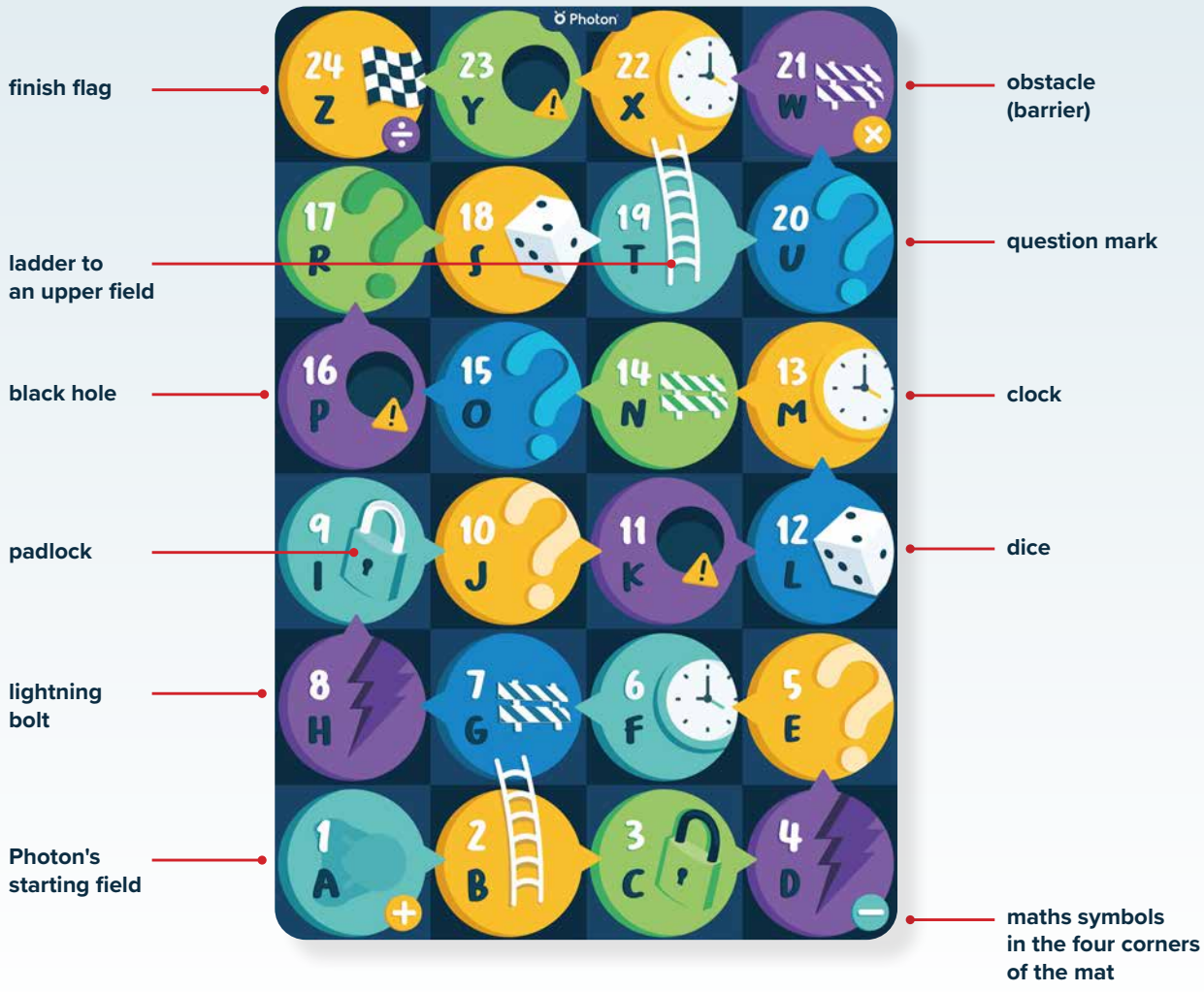
Mat description:

Designed for activities with the Photon Robot, this educational mat is an excellent tool for supporting interdisciplinary learning. The mat consists of a grid with symbols, letters of the alphabet and numbers in each field. All these graphic elements allow teachers to use the mat in a variety of ways and to prepare different activities and interesting educational games. Moreover, the mat is intended to be a universal tool for a wide variety of school subjects, including foreign language practice and mathematics.



Educational mat: Photon Board Games

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1. A classic board game

Goal:

- To improve basic maths skills
- To improve teamwork skills

Required items:

- Cards with tasks for students (to be placed on specific fields of the mat)
- A dice

Activity:

Before the class, prepare tasks and questions on your chosen lesson topic. Divide the class into two groups and place the prepared tasks on the corresponding fields of the mat. Explain to the students that they should roll the dice to find out how many fields they can move up the board.

There are tasks on the fields that the group controlling the Photon Robot must complete before the robot can continue on its route. The team that gets the Photon robot to the finish line first wins.

Sample actions you can assign to symbols:

- **Question mark**

The player must answer one question.

- **Padlock**

To receive a key to open the padlock and move to the next field, the player must complete a task.

- **Obstacle (barrier)**

The path is blocked, the player must move back 1 field.

- **Dice**

The player gets a second chance to roll the dice.

- **Lightning bolt**

The player gets a special power to move on one more field or make another player go back one field.

- **Clock**

The player is given a time-sensitive task to complete.

- **Black hole**

The player falls down the hole onto a field directly below.

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2. Novelty board game

Goal:

- To improve basic maths skills
- To improve teamwork skills

Required items:

- Cards with tasks for students (individual and group) to be placed on specific fields of the mat
- Three cards with dots: one, two and three dots

Activity:

Before the class, prepare cards with dots on them and several tasks for students (divided into individual and group tasks). Explain to the students that each turn begins by choosing one of the three cards. The number of dots on the card drawn will correspond to these activities:

- **One dot:** The Photon Robot can go one field forward.
- **Two dots:** The Photon Robot can go two fields forward and an individual task must be completed.
- **Three dots:** The Photon Robot can go three fields forward and a group task must be completed.

The game ends when the Photon Robot reaches the finish field.

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3. Mathematical moves:

Goal:

- To improve basic maths skills

Required items:

- The Photon flashcards – the Alphabet and Numbers set / or pieces of papers with digits

Activity:

Prepare cards with numbers before the class. Divide the children into two teams. Ask a representative from one of the teams to randomly choose a piece of paper with a number on it. Show this number to all students. The representative has to work out a simple mathematical equation consisting of three components that gives a result equal to the number on the card.

The remaining team members direct the Photon Robot one after another to the three numbers that make up the equation. The opponents must complete the equation by adding the necessary addition, subtraction, division or multiplication symbols to obtain the number from the card drawn. If the opponents work out the correct equation, they score a point.

For example: the number on the card is 85. The equation made up of three numbers can be: 8 × 10 + 5 = 85. The children from the first team direct the Photon Robot to numbers 8, 10 and 5. Knowing the result, the opposing team should guess the equation. To show their guess, the opposing team should guide the robot to the number 8 on the mat, then to the multiplication symbol (×), then to the number 10, then to the plus symbol (+) and finally to the number 5 field.

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4. Get to know your classmates

Goal:

- To improve basic social skills

Required items:

- A dice

Activity:

Each field on this edu mat has a letter of the alphabet assigned to it. Start guiding the Photon Robot around the mat, stopping only at the fields with letters corresponding to the first letters of the names of the students in your class. When going around make sure the robot's ears glow red. Turn them green when it stops on a letter you need.

Then the student whose name begins with that letter stands up and says something about himself / herself (which you must write down). Once you get the information about all your students, you can start the main part of the game.

Each student rolls a dice (to indicate a number of fields to move) and guides the robot around the mat (in any direction or in accordance to any rules you specify at the beginning). If the robot stops at the field with the first letter of the name of a person in the group, the student must say what everybody heard from that person. For example:
"I stopped at the field with the letter J for Julie, who loves dinosaurs."

Each time check provided answers with your notes (if necessary). Remember to praise the children for correct answers, then continue the game. For wrong answers, children drive back the Photon Robot by the number of pips on the rolled dice.

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5. Words race

Goal:

- To improve basic social skills
- To improve teamwork skills
- To improve vocabulary

Required items:

- The Photon flashcards – "The alphabet and numbers" set / or pieces of paper with the letters
- A dice

Activity:

If you do not have flashcards, prepare pieces of paper with letters of the alphabet before the class. Divide the children into two teams. Each team rolls the dice and guides the Photon Robot according to the board rules.

When the robot reaches the specific field, the child who controlled the robot must pick at random a letter of the alphabet. The other team members must come up with a list of words starting with that letter - as many as the number assigned to the field the robot is on.

Explain that each team has a limited time to complete this task determined by the colour of the field. For example, if the field is yellow/green, the time limit is 2 minutes, and if the field is blue/purple – 1 minute.

The team that completes this task correctly in the set time will move on to the next round. If the team fails, the Photon Robot returns to the point it was at before the dice were rolled. The game ends when both teams reach the finish line.

You can adapt this activity or combine with a spelling lesson.

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6. Boggle on the mat

Goal:

- To improve logical thinking skills
- To improve teamwork skills
- To improve vocabulary

Activity:

To begin with, divide the class into teams. Then say or point to several letters of the alphabet (fields) on the mat.

Explain that each team has to come up with as many words as they can from the provided letters. To present their words the team directs the Photon Robot to the appropriate fields with letters on the mat.

The team that presents more words will win.

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7. Smart moves

Goal:

- To develop analytical thinking skills
- To develop computational thinking

Required items:

- Sheets with specific criteria to meet when children plan their path on the mat

Activity:

Prepare criterion sheets for each student and score cards before the class. The criteria can be related to numbers or fields on the mat, for example: numbers divisible by 2 only, one yellow field, one blue field.

Ask each student to randomly pick a criterion sheet. Each student then plans the Photon Robot's route in such a way that it reaches the finish line and meets the criteria from the sheet drawn. Each successful student receives a point.

Students alternate the task until they reach the point limit (which you can set beforehand with your students).

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8. Bingo with the Photon Robot

Goal:

- To develop maths skills
- To develop presentation skills

Required items:

- Bingo-like cards with a selection of numbers on them
- Photon flashcards – "The symbols used in our app" set / or self-made set of cards with arrows indicating robot's moves

Activity:

Prepare and print the Bingo cards with numbers on them and the set with arrows in several copies to distribute among the children. Randomly pick the first student to control the robot by following the sequence of arrows in the set received. Each student can move the robot by at least one field. Exact rules, on how many fields the students can move, should be determined with the children at the beginning. Similar to the Bingo game, the children cross out numbers on their own cards, i.e., numbers assigned to fields on the mat the robot stops at. The game is over when one person crosses off all the numbers on their "Bingo" card.

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9. Police and thief (with two Photon Robots)

Goal:

- To improve basic social skills
- To improve teamwork skills
- To improve vocabulary

Required items:

- Three cards with dots: one, two and three
- Cards with tasks for students (individual and group) to be randomly placed on the mat

Activity:

Prepare the exact number of cards with dots beforehand. At the beginning of the task, divide the students into two groups and decide which one is representing the "Police" and which one the "Thief".

Next, the students have to program the two Photon Robots so that each has a different ear colour: the "Police" robot blue, and the "Thief" robot red. A Police group places their robot on field 1, while the Thieves group places theirs on field 4.

In order for a robot of one of the groups to make a move, children must randomly pick a card:

- **One dot:** The Photon Robot can go one field forward.
- **Two dots:** The Photon Robot can go two fields forward when a selected person from the group completes an individual task.
- **Three dots:** The Photon Robot can go three fields forward when a group completes a group task.

If the group fails to complete the task, they move three fields back.

The game ends when the "Thief" is caught or when it reaches the finish line.

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10. Mathematical rays:

Goal:

- To improve basic maths skills
- To improve teamwork skills

Required items:

- Envelopes with blank pieces of paper inside

Activity:

Divide the class into several groups and direct the Photon Robot to a field of your choice on the mat. Ask each group to pick up an envelope with blank pieces of paper (each envelope should have papers in different colour).

Ask each group to think of and write down on their pieces of paper several mathematical equations, where the result will be equal to the number assigned to the field where the Photon is at that moment. Set a time limit for this task, e.g., 3 minutes. After this time, ask the groups to place their coloured cards with equations around the robot. Place the papers in a circle to look like rays of the sun.

The team that adds the most correct equations, i.e., has the longest single-colour ray emanating from the Photon Robot, wins. Check correctness of equations with all the children to determine the winning group. The winning team (or the teacher) indicates the field number where the next round should start.

Sample solution: