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HANDBOOK

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PLAY INTERNATIONAL

PLAY International (PLAY) is a secular and apolitical French NGO founded in 1999. Its main goal is to promote sport and games as tools for education, inclusion and empowerment of young people and children.

Since its foundation, PLAY has provided sports programs in more than 20 countries and for the benefit of over **one million children**.

Today, PLAY has 6 structured and registered missions in countries such as France, Kosovo, Senegal, Burundi, Comoros Islands and Rwanda, and has promising prospects for further development at local and international levels. PLAY uses innovative and participatory sports methods to support inclusive and quality education and promote social inclusion.



TRAINING PROGRAM

2-phase program

This training program is accredited by the Ministry of Education, Science, Technology and Innovation in Kosovo.

Before starting this program, the trainee engages in a 17-hour training process, at the end of which he/she will be able to implement educational, comprehensive and quality mathematics-based activities in their school.

During this training, the trainee will learn about the methodology of using mathematics as a tool for education and personal development. The training is based on interactive and problem-solving activities, with the aim of promoting critical thinking and cooperation among children. The trainee will develop skills to facilitate educational sessions that make mathematics more attractive to children and motivate them to love and understand this subject better.

This training is divided into 2 phases:

1. Training on the method and specific topics of this training – 2 days (12 hours)
2. Implementation of activities – 5-7 hours

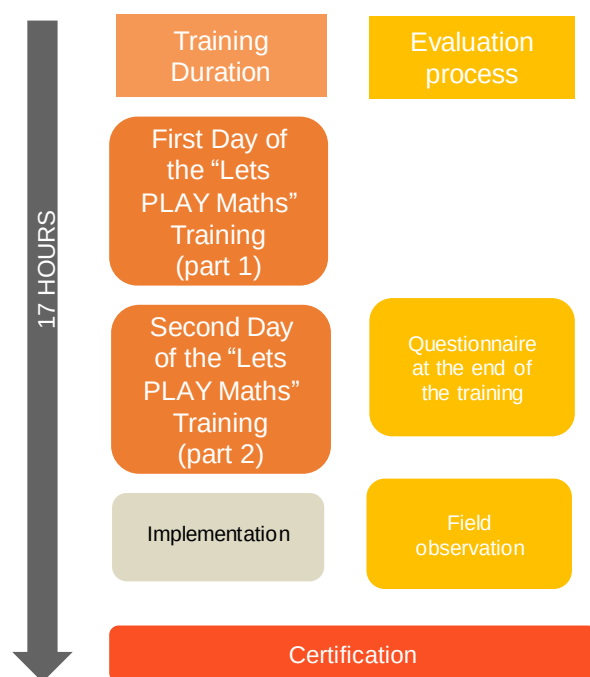


Figure 1: Timing and Evaluation of the "Let's PLAY Maths" Training

This handbook is intended to be a concrete tool for practitioners who lead mathematics-based educational sessions. As a practical guide, the manual will support you throughout your training program. It includes information and tools to promote children's engagement, build an inclusive classroom environment, and strengthen skills such as empathy, collaboration, and respect for diversity. The manual also provides tips for successfully leading educational activities that make mathematics more understandable and engaging for children. At the end of the manual, you will find 4 ready-to-implement sessions, along with their respective appendices.

REQUIREMENTS & CERTIFICATION

Minimal requirements

At the end of the training process, during a ceremony organized for its completion, the trainee will receive a certificate signed by PLAY International and the Ministry of Education, Science, Technology and Innovation as long as the trainee meets the following conditions:

Trainees must:

- **Have attended at least 80% of the training course.**
- **Have implemented in the field at least 4 sessions** learned in the training and have provided the relevant field reports and/or attendance lists.
- **Have benefited from a follow-up visit and summary discussion** in their field of intervention by a member of the PLAY International pedagogical team.
- **Have demonstrated the expected competencies**, according to the competency framework and the points system.

To ensure a successful completion of the program

If the trainee does not achieve a sufficient result to meet the certification requirements, he/she will have the opportunity to repeat it to improve the result:

- If he/she fails in the knowledge competence area: a written questionnaire will be proposed (a selection of questions rephrased from the knowledge questionnaires).
- If he/she fails in the competences assessed in the field: he/she will have the opportunity to be observed and assessed by a member of the PLAY team during an additional individual follow-up in the field (or a collective day organized by Play).

During the training program, PLAY International will support all participants to ensure their success!

CONNECTION TO THE NATIONAL CURRICULUM

Recent articles show that combining PE and mathematics promotes learning in both disciplines (Blanchoin and Pfaff, 2006), particularly by encouraging student involvement and motivation (Masson, 2018) and adding collaboration to mathematical problem solving (Augugliaro and Anex, 2016).

Through play, children explore their environment, manipulate objects and embody sensory-motor experiences with elements specifically chosen to ensure learning (Pelay, 2011).

This pedagogical handbook consists of four sessions covering different mathematical topics. They are structured to help students in grades 1 to 3 reinforce and develop the competencies outlined in the Core Curriculum for Primary Education in Kosovo. Through games and interactive activities, children build the foundations of mathematical understanding and develop a closer, more positive approach to the subject of mathematics.

Curricular competencies developed through this handbook

SESSION 1: “Cup Relay Game”

- **Focus of the game:** Counting, equivalence, cooperative strategies for counting
- **Grade suitability:** Especially for Grade 1
- **Curriculum alignment – Grade 1:**
 - Understanding the concept of quantity and using numbers up to 20
 - Developing one-to-one correspondence
 - Comparing and ordering quantities (“more than”, “the same as”)
 - Using non-verbal strategies (such as grouping or gestures), which appear in games like “Challenge 2 – In Silence!”
- **Curricular relevance:**

This session helps build the foundation for early counting and understanding equivalence (“the same as”). Individual and cooperative strategies strengthen problem-solving and communication skills, in line with the curriculum’s cross-disciplinary competencies.

LINK WITH THE NATIONAL CURRICULUM

THEME 2: “ADDITION”

- **Game Focus:** Mental arithmetic, iterative and strategic addition.
- **Suitability for Grades:** Primarily **Grade 2** (with overlap for Grade 1 and Grade 3).
- **Curriculum Alignment – Grade 2:**
 - Addition and subtraction of natural numbers up to 100
 - Strategies for mental arithmetic
 - Using objects and models to represent mathematical operations
 - Estimating and verifying results
- **Curricular Relevance:** The activities in this session emphasize the use of mental arithmetic strategies through scored points and final point objectives. This approach supports the development of logical reasoning and strategic planning, both highlighted in the curriculum. The games also strengthen the understanding of place value and prepare students for multiplication concepts in Grade 3.

THEME 3: “TENS”

Game Focus: Building tens, understanding place value, and concepts of the decimal system.

- **Suitability for Grades:** Mostly for **Grade 3** but can also be used in Grade 2.
- **Curriculum Alignment – Grade 3:**
 - Deepening the understanding of the decimal system
 - Composing and decomposing numbers (example: $43 = 4 \text{ tens} + 3 \text{ ones}$)
 - Working with rounded numbers and using concrete materials (such as boxes, charts, number lines)
 - Performing mental and written calculations with tens
- **Curricular Relevance:** This session strengthens students’ ability to build and manipulate tens, a key skill for understanding place value. The progressive activities follow the natural development of number sequencing through grouping. The use of concrete and visual materials aligns with the concrete–pictorial–abstract approach promoted by the curriculum.

LINK WITH THE NATIONAL CURRICULUM

THEME 4: “THE JUMPING GAME”

- **Game Focus:** Understanding and applying measurement, estimating distance, and exploring formal and informal measuring tools.
- **Suitability for Grades:** Strong fit for Grade 2 and 3; adaptable as an introduction also for Grade 1.
- **Curriculum Alignment – Grades 2–3 (Domain: Measurement):**
- **Grade 2:**
 - Introduction to standard units of length (cm, m)
 - Measuring and recording linear distances
- **Grade 3:**
 - Converting between units (e.g., cm to m)
 - Using measuring tools such as rulers, meter sticks, and measuring tapes
 - Exploring accuracy and precision in measurement tasks
- **Curricular Relevance:**
 - This session provides a practical and collaborative approach to measurement, through a physical and engaging activity. Students move from informal to formal measurements, using different measuring tools and experiencing the need for standard units. The games promote joint investigation, comparison of results, and justification of measurements – reinforcing conceptual understanding of measurement in line with curriculum requirements.

WHAT TO EXPECT DURING A FIELD VISIT

A field visit is an opportunity for teachers to demonstrate all the skills they have learned by participating in trainings and implementing activities with their students. The observations will focus on '*possession of knowledge*' and '*interpersonal skills*', which means that you will be assessed on your familiarity with the activity (rules, steps, objectives), as well as on the way you implement it (giving clear instructions, engaging all children in the game). Since this kit has a strong focus on the inclusion of all children in the activity, one of the main things we expect to see during an observation is the way you integrate boys and girls in your games and how you ensure that everyone is included and accepted.



DO



Include all children in the activity, including those with disabilities and from different communities, in your session.



Focus on explaining and ensuring that students understand the topic and the key messages of the games.



Plan your time accordingly to ensure that you complete all phases, including the discussion.



Adapt the game to suit your students.



DON'T



Indicate which children in your class have disabilities or are from different communities..



Pause the game to inform the observers about what you are doing at each step. Act as if we are not there, and it is only you and your class



Focus only on the children's enjoyment in the game – make sure you are delivering the game's messages and that the children have understood the game's objectives.



Do not be nervous or stressed! We are here to support you and want to see you succeed.



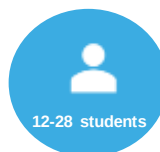
CATALOGUE OF GAMES

Mathematical Objective: Counting

MATERIAL

-  4 sets of 20 colored cups (one per team)
-  20 white cones
-  1 stopwatch
-  4 hoops (one per team)

For 24 students



SETUP & AREA LAYOUT

- Define a central zone and 4 outer zones (using 4 different colors) on the field. Each zone is marked with a hoop that matches the team's color.
- Form 4 teams of 6 students each (blue, red, green, and yellow).
- Place the 20 cones of each color in the central zone (either scattered or grouped), opposite the corresponding team's zone (see diagram).
- Distribute some of the white cups on the field or in the central zone, depending on the learning objective.



WARM-UP

During setup, students jog around the field. They can do one lap running, one lap with heel kicks, and one lap with high knees. You can also have them do a lap where, at the teacher's signal, they stop, do a vertical jump on the spot, and then continue.



Explanation of the game

Objective of the game: Be the fastest team to **bring back as many cones of your team's color** as there are white cones on the field.

Rules and How to Play:

The game is played as a team relay:

- Just before the start of a round, the teacher places a number of white cones on the field (based on their instructional goal)
- At the teacher's signal, one student from each team runs as quickly as possible to the central zone, **picks up one — and only one** — cone of their team's color, and places it in their team's hoop. Once they return, another student may leave and collect the next cone. The game continues until a team believes it has exactly as many cones of its color as there are white cones. At that point, the team sits down in the center of its zone.
- It is forbidden to enter the central zone and to touch or move the white cones.
- If a team believes it has taken too many cones, it may return one or more cones outside its zone.
- The game ends when all teams are seated.

End of the Round: Once all teams are seated in their zones, the teacher collects the colored cups from each team and places them one by one on top of the white cups. For each team, if the colored cups cover all the white cups exactly, that team wins the round. If there are too many or not enough, the team loses the round. Multiple teams can win. If playing multiple rounds and the students are familiar with the game, you can also assign points based on the order in which teams finish (e.g., 4 points for the first team, 3 for the second, etc.).



TIPS

- Make sure each student picks up only **one** cone of their team's color on each turn.
- Stick closely to the rule of “as many as — no more, no less,” and above all, avoid giving students counting strategies explicitly. From a teaching perspective, the goal is for students to develop and apply their own strategies. At first, they may be tempted to collect as many cones as possible, but once they fully understand the rule, they'll begin to strategize and, in particular, start counting.
- Choose the number of white cones and how to arrange them carefully (for example, in constellations or groups of 4 or 5). At minimum, make sure the number of white cones equals the number of players per team so that each student can participate in the relay at least once during the round.



The central teaching variable in this game is the number of white cones and the way they are arranged on the field.



IN-CLASS FOLLOW-UPS & VARIATIONS

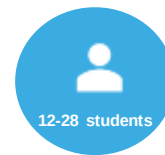
- Students may not immediately see the game as mathematical. It's important to make and reinforce the connection in class between the “as many as” game rule and the actual quantity of cones. Counting, in this case, is a strategy to develop—not a rule of the game itself.
- The counting strategies students develop during the game will depend on the number of white cones and how they are arranged. In the classroom, these strategies can be explored further in connection with the game, allowing you to build a learning **sequence that alternates between gameplay and meaningful knowledge building moments**.

Mathematical Objective: Mental Calculation

MATERIAL

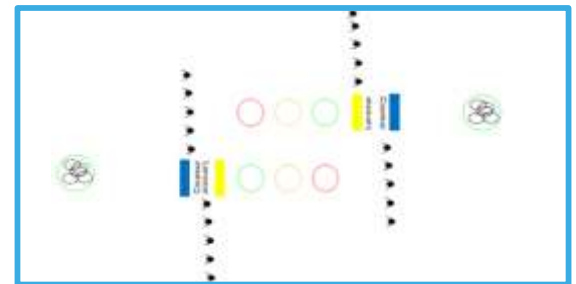
- 24 tossing bags (one per student)
- 6 hoops in 3 different colors (3 per team; 8 hoops total)
- Around twenty floor marking strips

For 24 students



SETUP & AREA LAYOUT

- Two teams of 12 students, positioned facing each other.
- Mark the bag collection zones where runners will go to pick up the bags (green circles in the diagram).
- Place one strip on the ground to mark the tossing zone, and another to mark the runners' starting zone
- Place three hoops of different colors in front of the tossing zones, and mark off access to them with ground strips.



WARM-UP

While the field is being set up, students jog around the area. Then, they practice tossing. They can try out different tossing techniques (sidearm or scoop toss).



RULES & EXPLANATION OF THE GAME

Objective of the game: Score as many points as possible by tossing the bags into the hoops and correctly calculating your score. Each hoop is worth a different number of points (for example: green hoop = 1 point, orange hoop = 2 points, and red hoop = 3 points).

Rules and How to Play:

The game is played over several rounds, and each round consists of two phases:

- **At the teacher's signal**, the first runners from each team dash off to collect a bag for their tosser. Once the bag is brought back, the runner high-fives the next runner, who may then go, and hand the bag to their tosser. The tosser chooses which hoop to aim for. They toss the bag while the runner moves behind the line of tossers. After tossing, the tosser joins the runner line and becomes the runner for their pair.
- This process continues until every student has taken a turn as both tosser and runner.
- When all members of a team have tossed, they may sit down — and if they're the first team to finish, they earn 1 bonus point.
- **Scoring Phase:**
- The scoring phase starts once both teams have finished their tosses. Teams calculate their points collectively, gathering around the hoops to agree on their total. Once agreed, teams return to sit in their game zone.
- The round ends when both teams are seated.

End of the Round: The teacher asks one student from each team to share the score they calculated, then confirms the score by counting the points in front of the group. If the score calculated by the students is correct, the team earns bonus points. These bonus points are added at the end of the round or at the end of the game to the team's total score.

End of the Game: The points from all rounds are added together to determine each team's final score. This calculation can be done in class.



TIPS

- Make sure each team forms two single-file lines to help the game run smoothly.
- Optionally, assign a team captain for the scoring phase who will help guide the group through the score calculation.
- Adjust the point values of the three hoops between rounds or between games, depending on your learning objectives.
Example: (1, 2, 3), (4, 5, 6), (1, 5, 10), (10, 20, 50), (100, 200, 500)



The key learning variable in this game is the number of points assigned by the teacher to each of the three hoops



IN-CLASS FOLLOW-UPS & VARIATIONS

- Make connections between the game experiences and classroom work. Back in class, review the challenges faced during the game and practice different mental calculation techniques.
- Create mental math exercises related to the game.
- Use the hoop worth 10 points to work on tens, and practice calculations like 10 plus 10.
- Also use this game to help with number building.

Variation

Once the students have a good grasp of the game, you can introduce a variation.

The goal is no longer to score as many points as possible; instead, each team must reach exactly a target number set by the teacher. The gameplay remains the same, but this time, students need to keep track of their score as they go. Each tosser must think strategically about which hoop to aim for in order not to exceed the target number:

- If the target number is exceeded or not reached, the team loses the round and scores no points. If both teams reach their target number, the team that has tossed the most bags into the bonus hoop wins.
- If the target number is reached before all 12 tossers have played, then they can toss their remaining bags into a bonus hoop that you add. This hoop should be set up beforehand by the teacher at a location of their choosing, depending on the desired difficulty level.

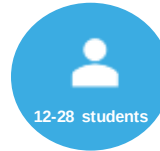
Make sure to change the order of tossers in each round so that everyone has an equal opportunity to think strategically and participate with the same level of importance.

Mathematical Objective: Calculating a score using a counter / Developing the concept of tens

MATERIAL

-  200 ping-pong balls
-  20 hula hoops
-  20 floor marking strips
-  40 small cones
- 4 boxes (1 per team)
- 20 collectors (each with 10 slots)
-  1 stopwatch
-  4 customized dice (1 per team)
- 4 score counters (1 per team)

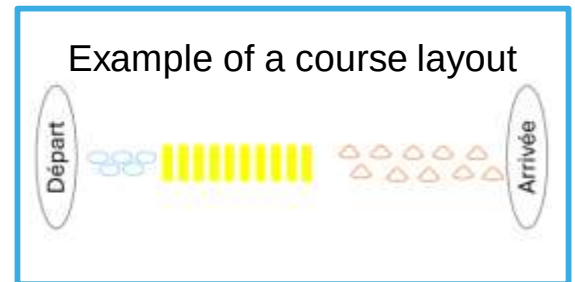
For 24 students



SETUP & AREA LAYOUT

- 4 teams of 6 players each
- Mark the starting area at one end of the field. Place the bags of ping pong balls, along with the boxes and the dice, in this zone.
- Mark the scoring area at the opposite end of the field. This zone will contain the empty score counters and the collectors.
- Set up 4 identical courses, one for each of the 4 teams, between the two zones. Divide each course into three sections based on the available equipment—for example, using 5 hoops, 10 floor strips, and 10 small cones.

Example of a course layout



WARM-UP

The students jog all around the field. Each team warms up on their course without the balls: hopping through hoops on one foot, jumping with both feet over the floor strips, weaving through the cones in a slalom, and so on.



RULES & EXPLANATION OF THE GAME

Objective of the game: Bring as many balls as possible to the final zone while correctly recording the number of balls collected on the counter.

Rules:

All the students on the same team line up in their starting zone, one behind the other. The first student rolls the die and takes the number of balls indicated by the die, placing them into a box. They then complete the course without dropping any balls — otherwise, they must return to the start and try again. Once they reach the finish area, the student places their balls into the collector, then updates the score counter to reflect the number of balls delivered. The player then runs around the course to return to the starting zone and high-fives the next runner. This next runner takes a ball and the process repeats until the teacher signals the end of the game.

End of the game:

At the end of the allotted time, gather the students around their finish zone. The teacher checks the score on the counter

together with the students by counting the balls. If the score displayed on the counter matches the number of balls counted in the trays, the team has successfully completed the challenge. Among the teams that have succeeded, the one that brought the most balls wins the game. If playing multiple rounds, points can be awarded as follows: 4 points for the first place team, 3 points for second, 2 points for third, and 1 point for fourth. Teams that did not complete the challenge do not earn any points.



TIPS

- Adapt the course to your sports goals and the equipment available at your school.
- Set the time so that all students complete the course at least once.
- Adjust the value of your dice according to your teaching objectives. The more balls collected, the more often students will need to change tens.

Examples:

- ➔ Two faces « 1 », Two faces « 2 », Two faces « 3 »
- ➔ -> Two faces « 2 », Two faces « 3 », Two faces « 5 »



An important learning variable in this game is the value assigned to the faces of each customizable die.



IN-CLASS FOLLOW-UPS & VARIATIONS

- Practice using the counter in class
- Return to class to review the most efficient way to count points during the scoring phase.
- Create game situations in class by simulating dice rolls, having students place the balls in the collector, and updating the score.
- Work specifically on the change of tens related to the collector.

Variation

Once students have mastered the game, you can introduce a new ball color worth 10 points. Include 10 as a possible value on the die, and optionally expand the counter to allow for counting hundreds.

Mathematical Objective: Discover different ways to measure a distance

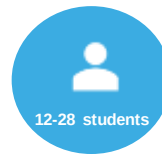
MATERIAL

S

 100 floor marking strips

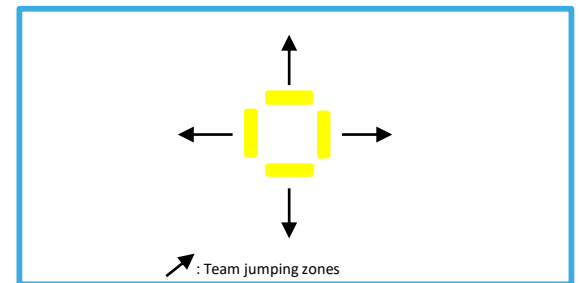
 1 whistle

For 24 students



SETUP & AREA LAYOUT

- Create 4 teams of 6 players (use jerseys).
- lace 4 strips on the ground to mark the starting zone (arranged in a cross shape as shown in the attached diagram).



WARM-UP

While the field is being set up, students jog around the field. Then they practice standing long jumps (with feet together). Line them up. Specify that knees should be bent, arms can be used as a balance, and at each whistle blow, all students jump at the same time. Emphasize the importance of a stable landing: both feet together, with no tipping forward or backward.



RULES & EXPLANATION OF THE GAME

Objective of the game: As a team, jump as far as possible without a running start, and then measure the total distance covered.

The game takes place in two phases:

- **Jumping phase:** Each team member takes turns jumping as far as possible with feet together. Every student waits for the teacher's whistle to begin their jump, so that all jumpers from each team jump simultaneously. The landing spot is marked by a strip on the floor, placed by the next jumper behind the heels of the previous jumper. If a student fails to stabilize their landing, they are allowed one retry.
- **Measuring phase:** Each team measures the total distance achieved by another team by aligning the unit strips from the starting zone to the landing zone.

End of the game:

The teacher validates the distances reported by each team. The team with the longest distance achieved is declared the winner.

IMPORTANT: Specific procedure for the first round

The first time students are introduced to the game, only the jumping phase is explained.

Figuring out who jumped the farthest becomes a collective discussion and exploration

The teacher asks the students how to decide which team won (which team jumped the farthest). Each student proposal is discussed, eventually leading to the use of the unit strips provided.



TIPS

10 min

- Ensure you have a sufficient number of strips, all of identical size.
- Make sure not to overlap the strips and to line them up properly.
- To assist in remembering the number of strips counted, students may use an auxiliary sheet on which they can mark them by coloring.
- Once students have mastered the game and understood how to measure, you can double the number of teams by having some teams jump and others measure. The game then has two rounds so every team gets a chance to jump and measure during the session.
- Gradually advance the measurement techniques as the games progress and in accordance with your students' academic levels.



A key learning variable is the measuring tool provided to the students.



IN-CLASS FOLLOW-UPS & VARIATIONS

- This activity goes hand in hand with classroom lessons on measurement and various measuring techniques. The game introduces questions about measurement, and as it progresses, it can connect to the sporting challenge of accuracy by improving how measurement techniques are used.
- You can introduce the idea of measurement accuracy when the total distance is between two unit strips. Students might suggest using a ruler instead of the last strip. For example, if the distance is between 15 and 16 strips, they can say: 15 strips and 18 centimeters.
- You can work on conversions by asking students how many centimeters (or meters) their team jump measured. They'll need to measure the length of one strip. This comparison will make it easier to understand why the meter is used universally.
- Show students different ways to measure. Bring in new tools (ruler, meter stick, tape measure, etc.) that they can use later in the game.



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