



## **TEACHING SCENARIO FOR IMPLEMENTATION OF THE INTERDISCIPLINARY PROJECT FOR STUDENTS**

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|                              |  |
|------------------------------|--|
| <b>Project title:</b>        | Live Geometry  |
| <b>Correlating subjects:</b> | Mathematics, English, Literature, physical education, technology and entrepreneurship, computer modelling,   |
| <b>Key terms:</b>            | Geometric shapes (triangle, rectangle, parallelogram, trapezoid), geometric bodies– (cube and parallelepiped), countable and innumerable nouns in the English language, color recognition, numbers, practical application of questions related to the nature objects - What is this....?, What are these.....?, Where is/are... ..?, How many.....?, How much.....? Developing the skills to create a poetic work, a poem or a riddle. |

|                                       |                |
|---------------------------------------|----------------|
| <b>Activity title:</b>                | I learn, I can |
| <b>Activity duration (min):</b>       | 45 minutes     |
| <b>Detailed activity description:</b> |                |

Creating a positive attitude and motivating students.

Start a conversation with students about geometric shapes and bodies by drawing the studied shapes on a large piece of cardboard hung on the board. Ask them if we can find geometric shapes around us - in everyday life. Where? Have each student write on a piece of card, under each figure, what object from his / her everyday life he / she can connect it with./

In this way you will motivate students to work.

#### **Introduce the topic**

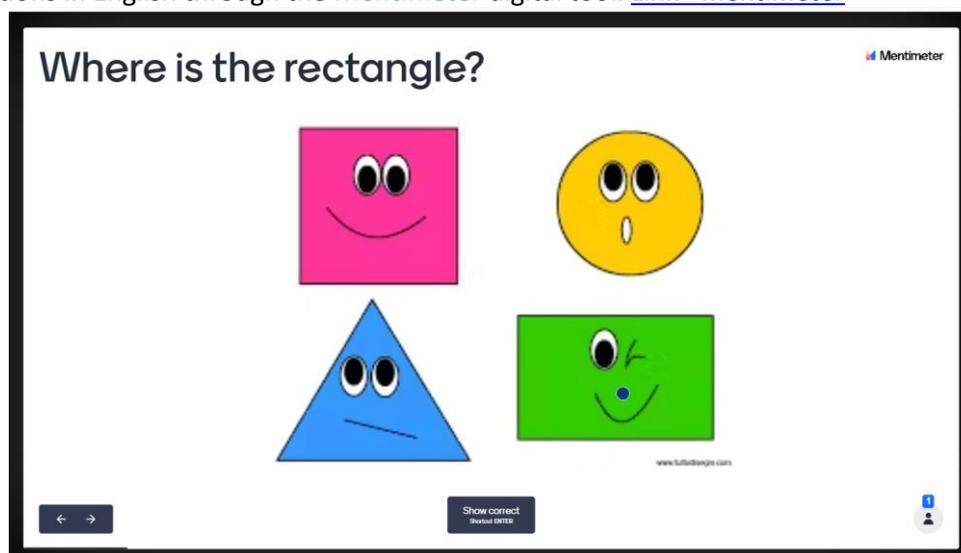
Make a summary of how important it is to know geometric shapes, their characteristics, their formulas for finding a circumference and a face that we can successfully apply in our lives.

#### **The main part**

Start the lesson with the song about the names of the figures in English on You tube.

Introduce the multimedia product, with which students recall, distinguish and apply their knowledge of figures, their differentiation according to colors, number of countries, formulas for finding a face and circumference of a figure.

Remind students of all the geometric shapes studied in math classes, figure names, numbers and colors, the formation of questions in English through the [Mentimeter](#) digital tool. [Link - mentimeter](#)



Then divide students into groups, give them the pre-prepared worksheets (SHEET) with a mathematical task with practical application related to applying facial knowledge into shapes, proper use of the measurement units and correct spelling of the corresponding color in English.

**(Annex 1)**

**Practical task:**

The courtyard of a school has a rectangular shape. One side of this rectangle is along the length of the school building and is 58 m long. The other three sides are surrounded by a fence which is 200 m long altogether. Calculate the area of the schoolyard.



**Final lesson part**

Allow a representative from each group to present the results of the work done. Congratulate the students on a job well done in class.

**Activity adaptation for students with difficulties**

If you have students with pronounced difficulties in the class, include them evenly distributed across groups and give them an adapted task related to the topic under question

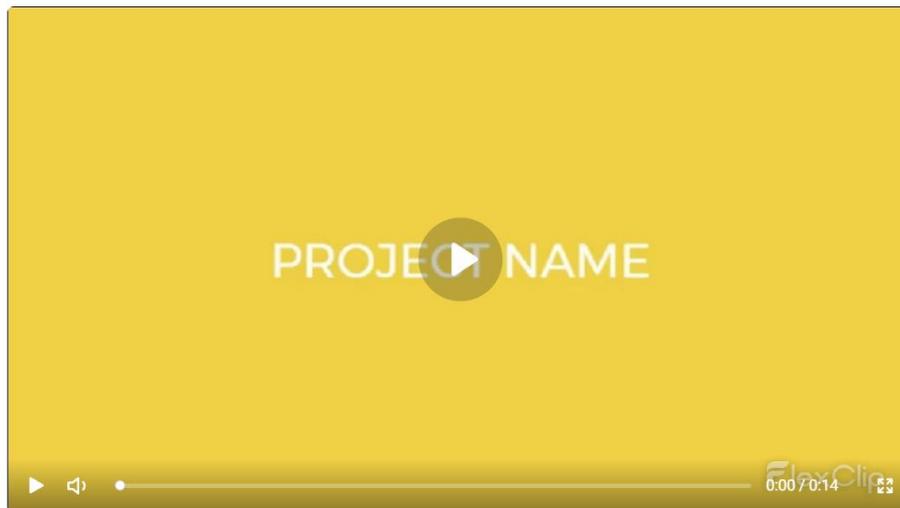
**Activity adaptation for gifted students and those willing to learn more**

If you have gifted students in the class, give them a task related to supporting among the groups.

|  |                   |
|--|-------------------|
| <b>Activity title:</b>   | I know and I play |
| <b>Activity duration (min):</b>  | 45 minutes        |
| <b>Detailed activity description:</b>  |                   |
| <p>Creating a positive attitude and motivating students.</p> <p>Update students' knowledge of the previous lesson by asking questions related to the name of the figures in English: Can you guess the figure? It has got four equal sides. It is ..... .It has two sides which are longer than the other two. It is ..... Ask students to ask questions related to the number of sides of the figure: Which figure has got 3 sides ?, How many sides has ..... .got?</p> <p>Let students try to describe the figure in English, using their knowledge. Recall the formulas for finding the circumference and face of the figures. Pay their attention to the most enjoyable method of learning - the game. Tell them that this class will be under the motto of the game for fun and learning, without winner, because everyone will be winners in the end, as long as they put in the effort and creativity.</p> <p>Present the topic, reminding them how important it is to have fun, but also to make an effort. Tell them that each step in the different games needs to be filmed so that they can end up making a short film or presenting the different tasks (challenges).</p> <p>Main lesson Part</p> <p>Divide the students into groups and give them the pre-prepared materials in the form of matchsticks or toothpicks, white cardboard, scissors, glue. On separate sheets, distribute the tasks for each group. The first is according to the instructions on sheet <a href="#">(Annex 2)</a>.</p> |                   |
| <p><b>Annex 2</b></p> <p>With the help of matchsticks, knowing that one unit of measure equals one match, show:</p> <ol style="list-style-type: none"> <li>1. Triangle with sides lengths 3, 4 and 5 units;</li> <li>1. Trapezoid with bases 5 and 7 units and hips of 4 units;</li> <li>1. Parallelogram with sides 9 and 4 units of measurement.</li> <li>2. Make a photograph of each of the figures.</li> </ol>  |                   |
| <p>Work out a geometric figure from the pegs at their disposal, with the lengths of the sides set in number of pegs (one unit of measure=one stick). The second task is according to the instructions on <a href="#">(Annex 3)</a>.</p>  |                   |
| <p><b>Annex 3</b></p> <p>How many sides does a dice have?<br/>What figures are these sides?<br/>Make a dice by:</p> <ol style="list-style-type: none"> <li>1. From the cardboard cut out six squares;</li> <li>2. On each of the squares, write a brief instructions guide in English for performing some actions with the parts of the body (example: raise your left arm, stamp with your right foot, etc.)</li> <li>3. With duct tape glue the squares in the form of a dice.</li> </ol>  |                   |

Each of the participants in the team throw the dice once and perform what is written, while another takes a photo or takes a short video.

Give them cards from which to cut out the required number of shapes, make a dice for play, and on each side write instructions in English related to the topic in question and perform them. Using the [Flex clip](#) LINK tool, children will create a short video of the photos taken during the game. [FlexClip](#)



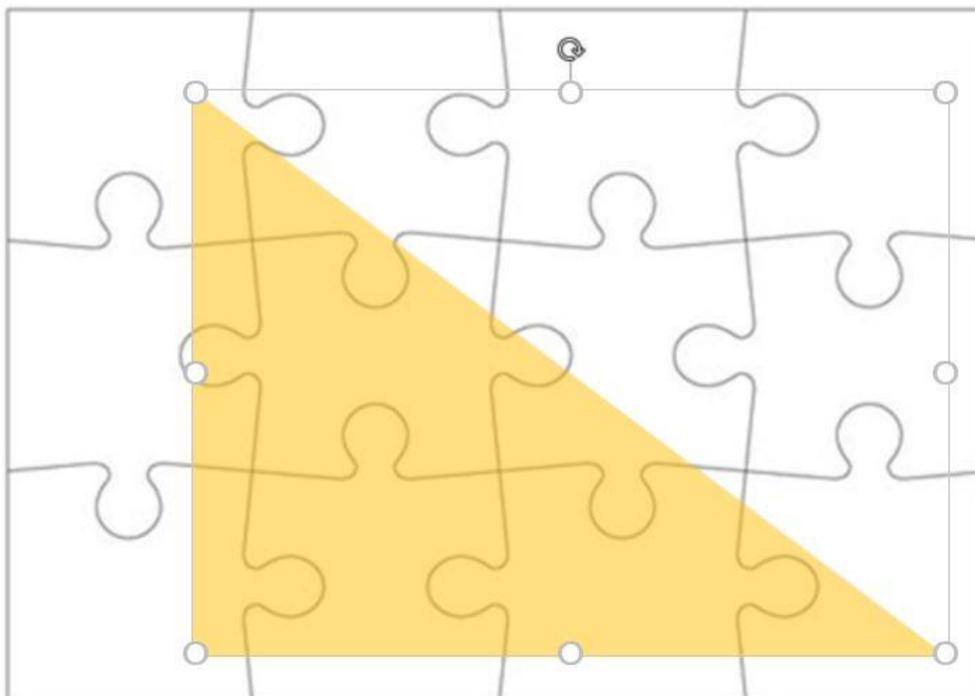
**Kids in Clouds**

Created by N. Stankova

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1 views Jun 08, 2022

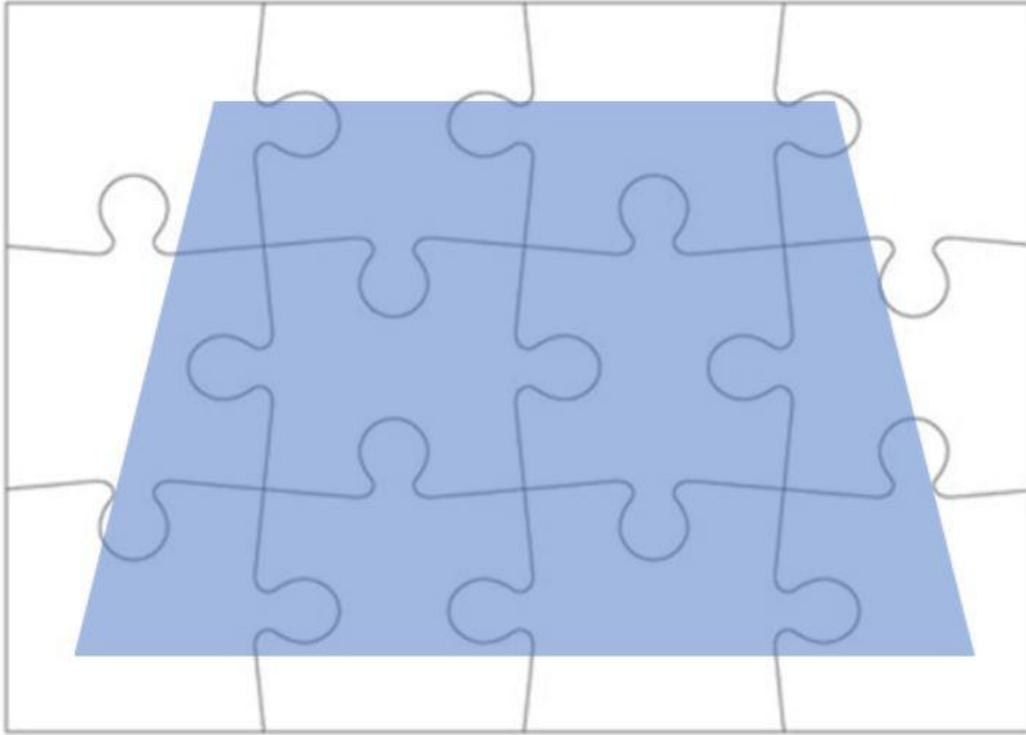
A third task is according to the instructions on sheet [\(Annex 4\)](#).

Team 1



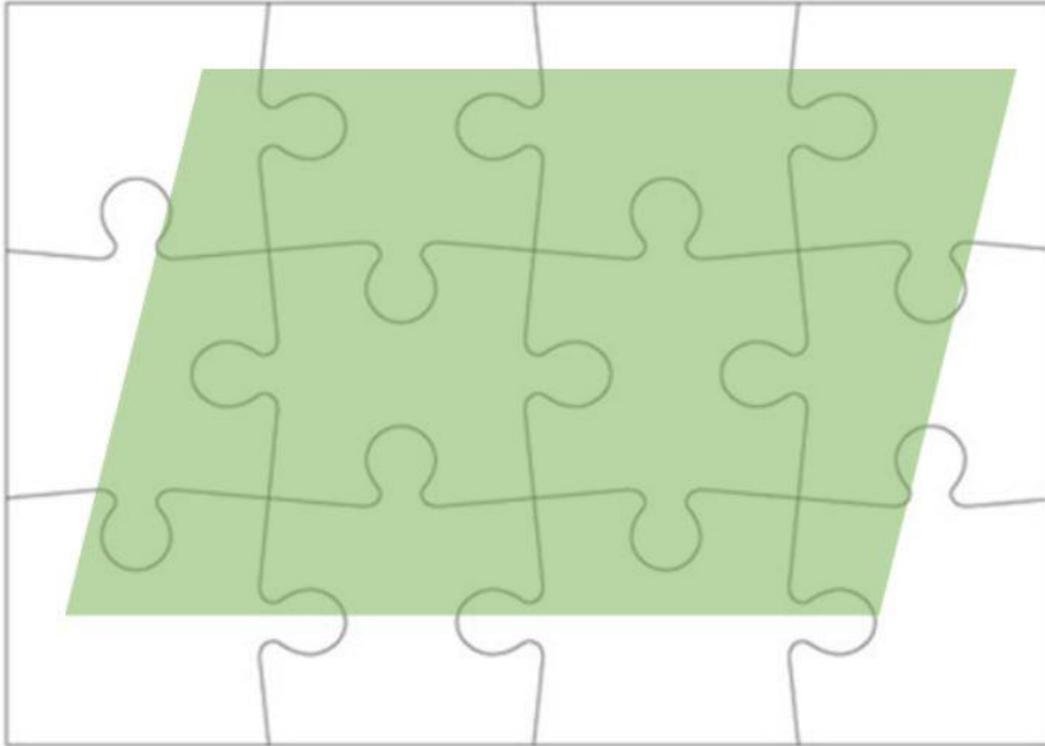


Team 2

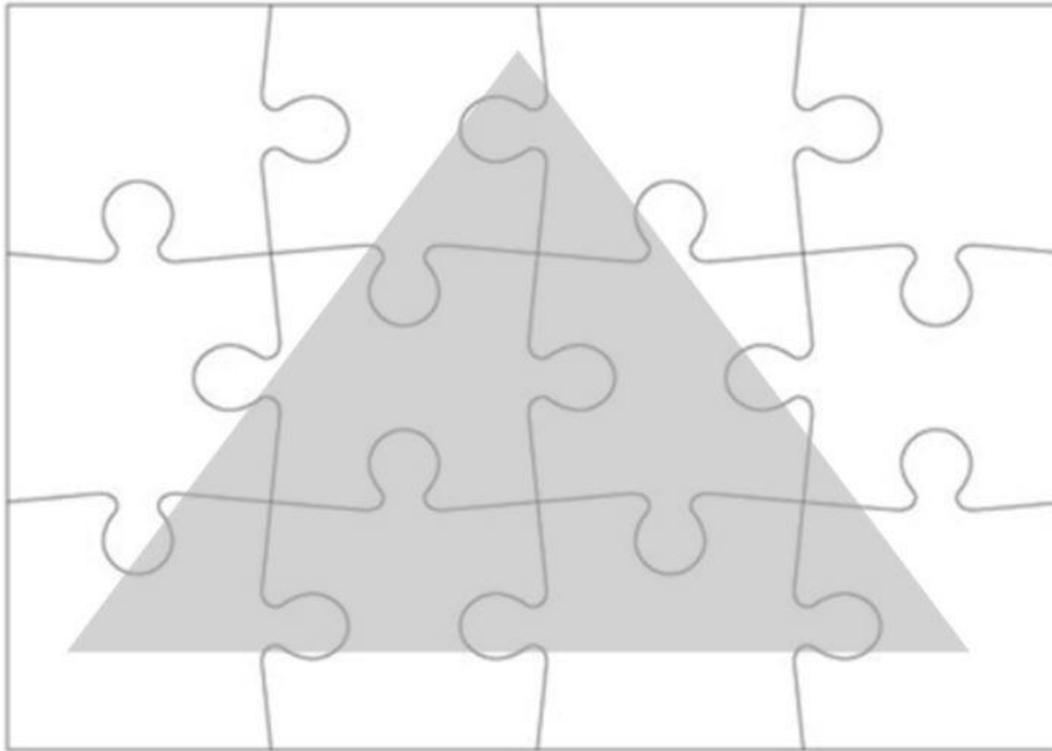




Team 3



Team 4



Give them a puzzle, after the arrangement of which they will receive a geometric figure. They need to take the necessary measurements with a line and find the face and circumference of the figure.

Final part

Evaluate the final products according to pre-set criteria, let the whole class be included in the voting for the best completed task. Congratulate the students on their successful work.

#### **Activity adaptation for students with difficulties**

Teamwork allows students with disabilities to be supported by more advanced students. Help them by including them evenly distributed in the groups and assign them a task according to their abilities.

#### **Activity adaptation for gifted students and those willing to learn more**

If you have gifted students in the class, assign them the task of being leaders in the respective team, to distribute the tasks among the other students in the team and to help the students with difficulties.



|   |                        |
|---|------------------------|
| <b>Activity title:</b>  | I create and I present |
| <b>Activity duration (min):</b>   | 45 minutes             |
| <b>Detailed activity description:</b>   |                        |
| <p>Creating a positive attitude and motivating students.</p> <p>Update the knowledge of the studied geometric figures from the previous lesson by writing on the board key words and concepts in both Bulgarian and English - triangle, sides, 3, circumference, face, square, <math>P = 4 \cdot a</math>, <math>S = a \cdot b</math> ....., rectangle, sides, two sides longer than the other two, Can you guess ....., This will motivate students to work.</p> <p>Setting the topic.</p> <p>Assign students with the key words written on the board to make one sentence. In this way you will introduce the students to the topic of the class. Explain to them what their task will be for this lesson - to compose a poem and a riddle for a geometric figure of their choice, and create a picture using the figure from the text they created.</p> <p>The main part.</p> <p>Continue the lesson by reminding students of the difference between the two genres - poem and riddle, giving them an example of a riddle and poem in both Bulgarian and English. Discuss the importance of students recognizing both literary genres and being able to create such types of text.</p> <p>Divide the students into teams. Distribute a worksheet (<a href="#">Annex 5</a>) on which to compose riddles or verses related to geometric shapes, applying their knowledge to compose the appropriate type of text. Invite the students to draw / make an application /, a picture / natural landscape /, including the studied geometric figures.</p> |                        |
| <p>Annex 5</p> <p style="text-align: center;"><b>We know .....</b></p> <div style="display: flex; justify-content: space-around;"> <div style="border: 1px solid blue; border-radius: 50%; padding: 10px; width: 40%;"> <p><b>The riddle</b> is a brief witty mystery based on inosaid, metaphor and parallelism, in which the properties of objects and phenomena are painted indirectly, but by their characteristic manifestations.</p> </div> <div style="border: 1px solid blue; border-radius: 50%; padding: 10px; width: 40%;"> <p><b>The poem</b> is a work of melodies, expressing feelings, melodicality, rhythmic. Very often it has rhythm and rhyming.</p> </div> </div> <p>1 After remembering the differences between the two studied genres of text, determine the type of texts given.</p>   |                        |

|  |  |
|--|--|
| <p>Have three sides and three angles,<br/>They're very sharp- you take care of yourself!<br/>Now guess and say my name!<br/>What's that?</p> | <p style="text-align: center;"><b>Triangle</b></p> <p>One, two, three sides,<br/>come with me and count to three.<br/>Three sides with three corners have come<br/>together<br/>and tablecloth have drawn.<br/>The "Attention" sign looks like me,<br/>and a triangle I call myself.</p> |
|--|--|

2. Use your knowledge of the geometric shapes studied and compose a riddle and a poem. You can use the following keywords and add more.

**Keywords:** four, sides, angles, straight, sharp, no tip, two longer, identical lengths, two shorter, equal, accurate, circumference, face, find, roof, wheel, horo, sun, count, calculated, called, love, ice cream cone, no end.

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3. Include the studied shapes in a drawing or application on the topic: A spring landscape of geometric shapes. As an example, you can look at the image. In a few sentences, describe in English the natural picture you created. Don't forget to put a title!





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**Good job!**

Each team should choose a person to represent the project task in front of the class.

**Final part**

Let the whole class to be involved in the evaluation of the completed projects and give the positive feedback. Congratulate the students on their successful work and award them with certificates.

**Activity adaptation for students with difficulties**

In the groups that there are students with difficulties and those who are advanced. Teamwork will help them to be engaged more easily and quickly in the task or include them in the activities of creating a landscape of geometric shapes.

**Activity adaptation for gifted students and those willing to learn more**

Gifted students can be the leaders in the team, they distribute the individual tasks in it and present the final product.

|  |                   |
|--|-------------------|
| <b>Activity Title:</b>   | Find, count, make |
| <b>Duration of activity/exercise (min):</b>  | 45 min            |
| <b>Detailed description of the activity:</b>   |                   |
| <p>Remind the students the projects details and aims from the previous class, as well as the landscapes they created with the help of geometric figures. Update their knowledge to describe a picture in English-I can see ..... Emphasize the discovery of geometric shapes in nature and in our daily lives.</p> <p><b>Introduce the topic.</b></p> <p>Focus their attention on the objects that surround us and how much they resemble the studied geometric shapes. Will they succeed if they have to find in nature objects consisting of the studied figures or make such a figure. Ask them if they like to play challenges and introduce them to the ActionBound app.</p> <p><b>Main Lesson Part</b></p> <p>Assign them the task of "Let's be explores" using the digital tool Actionbound (follow the link - LINK) .<br/> <a href="#">(Annex 6)</a></p> |                   |



## ActionBound - guide

Dear students, this challenge aims to show you that geometric shapes are all around us and how to use what we have studied.

1. Look around you and take pictures of objects that you liken to each of the studied figures.
2. On the territory of the playground there are hidden ropes, one for each team. With it, form each of the studied figures, with one participant from the team standing on each top, and the edges are from the rope. Let the captains watch for the correct execution of the figures and take a photo of each of them.
3. Find the face of a rectangle, the length of which is equal to the number of swings on the territory of the site, and the width is equal to the number of slides.
4. If the face of the rectangle from the previous task is in a square meters and the floor tiles on which you step are 30cm by 30cm in size, how many such tiles will cover the rectangle.
5. If you correctly calculate the perimeter of a parallelogram with dimensions  $a=80\text{cm}$ ,  $h_a=7.05\text{cm}$  and  $h_b=8\text{cm}$ , you will solve the clue that will lead you to the finish line, where we will find out how you handled the challenges.

Take students to a nearby park or playground. Divide them into teams (it is recommended that teams on different days are made up of different students, which would help improve teamwork overall in the class) Let each team choose a captain to work with the phone. Remind all students of the safety measures.

Give the captains a list of detailed instructions with which to familiarize the entire team and code for the **Actionbound** challenge. [ActionBound](#)



Bound: Find, count, make!



Start the challenge and ensure that the tasks are carried out safely and correctly.

#### Activity to adapt/involve students with difficulties

Teamwork allows students with difficulty to be supported by more advanced students and not to lag behind in the group.

#### Activity to adapt/involve gifted students and those wishing to learn more

If you have gifted students in the class, set them a task related to controlling and supporting other students in the groups.