

## LESSON 13

### THE COORDINATES 1

#### BRIEF LESSON SUMMARY

- Make square numbers evident with visual symbols (the cones).
- Learning to read the letter coordinates using pieces of cord.
- Studying the coordinates with key symbols.

**EQUIPMENT:** giant chessboard – name cards and holders - plasticized key-shaped cards with printed coordinates (there should be 64 coordinates or at least a number of coordinates greater than the number of children)- Boletus the Gnome - pieces of coloured cord – prize caps (plastic soft-drink bottle caps)

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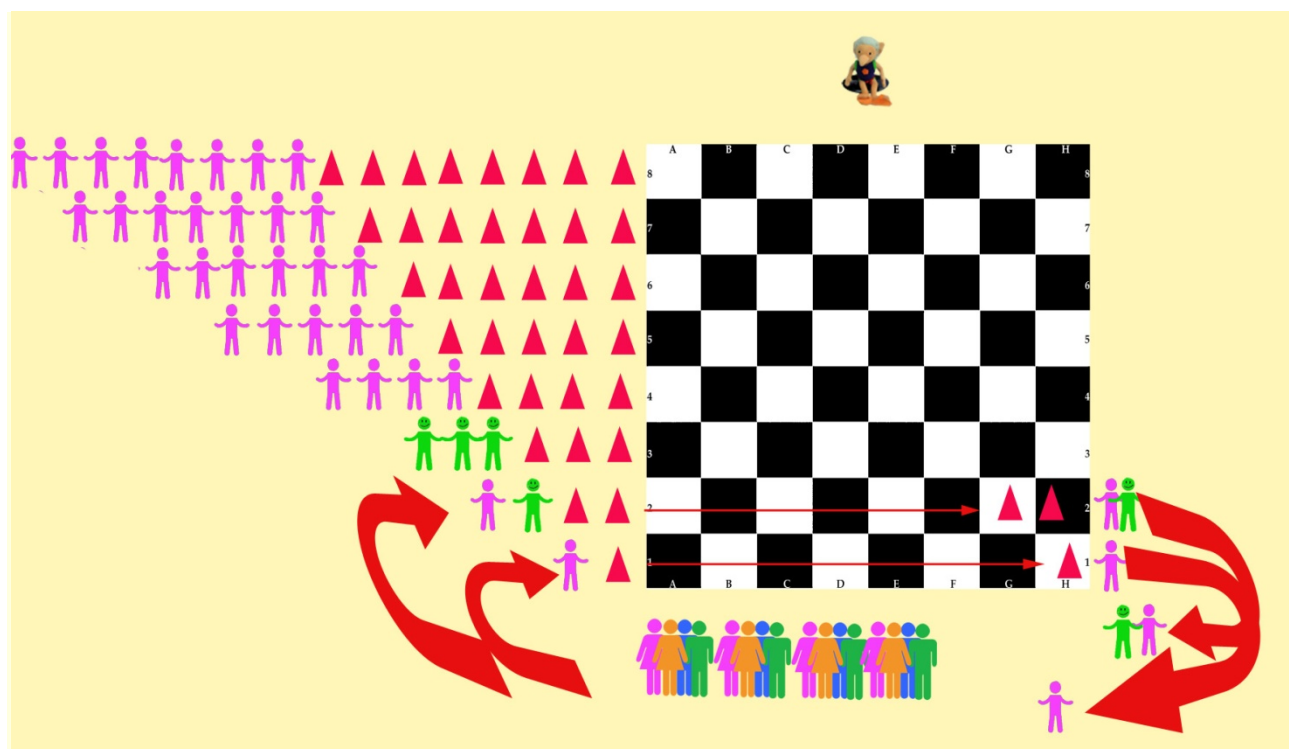
#### THE FAIRY TALE

"...When the king and queen returned from their state visit, Boletus was very happy as he had managed to remember the rhyme and teach everyone how to tell where they were. He was sure the king would be very pleased and give him a small treasure chest. Poor Boletus was in for a shock: - The king said that when the royal guards asked where people were they couldn't answer properly. So the king started to test Boletus about where he had been, with one very difficult question after another: What path did you take? What order did you use?... - (Children, please help poor Boletus!). Then came the most difficult question of all: How many rooms are there in path A? ...in B? ...in C? - Chiiildren! Help me! cried a desperate Boletus...- Then Boletus had an idea, he ran to the royal computer and started printing. What do you think he printed? ..."

Help the children to find the correct answer to the final question (there are 8 rooms for every path), bringing to their attention the numbers 1 to 8 on the sides of the chessboard.

#### ACTIVITY 1

## HOW MANY ROOMS ARE THERE IN EVERY PATH?



### Main instructions for the children

- Enter the castle holding a cone.
- Follow your path as far as you can; then put your cone into the empty room.
- Leave the castle and return to your line.

### Activity details for the teacher

- a) The children form lines on the side of the chessboard opposite Boletus (See the diagram).
- b) Before the lesson, place the cones outside the chessboard immediately next to each rank as follows: (one cone to the side of the first rank, two cones to the side of the second rank, three cones to the side of the third rank, and so on until all eight ranks have the corresponding number of cones).
- c) Once again, bring to the children's attention that on both sides of the chessboard there are numbers from 1 to 8.
- d) One at a time, the children take a coloured cone from next to one of the chessboard ranks, go onto and cross the chessboard, leaving the cone on the last available empty square. The children do this as follows:

NUMBER 1 is announced: the first in line must follow the 1-path until the end and leave a cone in the last square (the purple child in the diagram, who leaves from the A1 square).

NUMBER 2 is the next number: the second and third children in line (the purple child and green child in the diagram, who leave from the A2-square) follow the 2-path, leaving their cones in the last and second-last square.

NUMBER 3 comes next: the fourth, fifth and sixth children in line follow the 3-path, one by one leaving their cones in the last three squares.

After each child has crossed and placed their cone, they return to the back of their line.

This is repeated until the 8th rank has been reached and is completely occupied by cones.

**NOTE:**

36 squares in total will have cones on them and therefore some children will go onto the board twice.

## READING THE COORDINATES

Explain to the children that all the rooms of the castle have different names. A fun way to demonstrate the necessity of naming the rooms is to ask a child to go into a room of the castle and then keep moving them saying, 'Not that one! Move a little over there...not that one, I meant the other!' Ask the children what they think and question and encourage them until they say that if we didn't have names for the rooms we would end up getting lost.

This can be followed by reciting with the children all of the letters (from A to H) and all the numbers (from 1 to 8).

## ACTIVITY 1

### READING THE COORDINATES USING PIECES OF CORD

#### Main instructions for the children

- One of you enters the castle and goes into a room of your choice with a piece of cord in one hand and another piece in the other.

- Another child will then go to a side of the castle where there are letters and stand in front of the child in the castle; enter the castle and take one end of the cord from your classmate; leave the castle so the rope goes over the correct letter.
- Now another child does the same thing, but from the side of the castle that has numbers.
- The child in the castle has to name the room, first by saying the letter and then the number (which are indicated by the position of your classmates outside the castle).

### Activity details for the teacher

- a) The class divides up into groups of three.
- b) One child goes onto the chessboard holding two pieces of differently coloured rope. Outside the board the second child goes to the letter that corresponds to the position of the child on the chessboard, the third does the same but on the side with numbers.
- ⇒ Both of the children off the board go to take one end of the pieces of rope held by the child on the chessboard and return to where they were.
- d) Using the coloured ropes as a guide, the child on the board announces the coordinates.

### VARIATIONS.

All the children repeat the exercise to make sure that each one has understood coordinates correctly. If you wish, the class can be divided into teams and prize caps can be awarded so as to keep attention high. Possible team points are:

- a) 1 point if you have used the cord to read the coordinates.
- b) 2 points if only the position of the two children outside the board is needed to read the coordinates (i.e. no rope is used).
- c) 3 points if the coordinates are identified without any assistance.

### THE FAIRY TALE

"...One day the king woke up tired of seeing the same old faces! He thought to himself, 'This castle has too many rooms - many of them are always empty!' He decided to open the doors of the castle to guests, giving each one their own

room and key. On every key there was the exact location for finding the room; there was both a letter and a number so that it would be impossible for anyone to make a mistake, but of course finding your room still required a little thought...!"

## ACTIVITY 2

### THE ROOM KEYS (BY ANTONIO BATTISTI).

#### Main instructions for the children

- Sit around the castle.
- When I give you a room key, get up and go to the room indicated by the key's letter and number.
- Sit down once you are inside the room.
- If I call you, stand up and say which room you are in.

#### Activity details for the teacher

- a) The children sit evenly spaced around the chessboard.
- b) Give every child a key and tell them to go to the square that corresponds with the coordinates,
- c) As with all exercises, you should demonstrate how this is done before the children start: take a key and then let the children see how you figure out how to identify the square in question. Get the children to help you check that you did it correctly and sit down in the square.
- d) Make sure the children sit down when they reach their respective squares.
- e) Check that everyone has understood by getting each child to say loudly the coordinates for their squares.
- f) If the answer is correct, the child sits down again. The other children can help if the child is having difficulty.

**GROUP CHECK:** Children on the same letter (file) all get up at once (A, B, C etc.) or on the same number (rank) (e.g. 4, 7, etc.).

**Closing chant:** "Letters and numbers together they came, giving each room its own special name! Yeaaaaaah!"

#### OBSERVATIONS

## READING THE COORDINATES USING PIECES OF CORD

By using coloured cord to 'measure' the space the children find themselves in, they are enabled to experience it in a new way, vividly reinforcing the concept of direction.

Dividing the children into groups of three serves a double purpose: the first is to create the experience of a small group united in achieving the same objective; the second is to create different roles (one does an action, and the others check it is done properly) to contribute to the success of the game. In addition, the use of prize caps and the chance to 'gain' increases the attention of the whole group.