



Mathematics track 3 – 4. For pupils. 1.5h.

Measurements and understanding geometrics.

5 min

All the pupils stand in a circle. The teachers introduce themselves and explain the ideas behind the mathematics track.

10 minutes First game. Everyone stands in line.

The teacher asks the pupils to form a line in silence. The pupils write with their finger a number on the back of the person in front of them. (The pupils can stand in a circle on behind the other so that everyone has someone else's back to write on). With your hand show the place by making gestures (no talking) ask the pupils to line up in order of height, number of siblings, order of height, length of thumb nail or even the size of their shoes.

10 minutes Meter rope

- Ask the pupils to think how long 1 meter is. They can guess the length with their hands. Once the pupils have all shown how long they think that the meter is, the teacher shows the actual length with the help of a meter long rope and compares it to the pupils estimate.
- The teacher asks the pupils to form pairs; each pair gets a rope of a meters length. The pupils have to find an object from the surrounding area that is either one or one and half meters long. Once the pupils have found such an object they can either show the teacher or one of the other pairs of pupils.
- The pupils have to find tree that is one and a half meters in circumference.
- The teacher asks the pupils jump as far as possible and then to estimate how long their jump was. Once the pupils have estimated their jump they can measure it with the help of their meter rope.
- With the help of their meter rope, the pupils are asked to measure each other.

15 minutes Measuring with your body parts

- The pupils are given cards on which are written old fashioned measurements. CORD, CUBIT, FOOT, SPAN, PALM, THE LENGTH BETWEEN THUMB AND FINGER. The pupils are asked to measure with their rope how long these old fashioned measurements are.



- The teacher will place ten one meter ropes on the ground in a line. The pupils will walk the length of the ropes and count how many steps it takes to reach the other end, they will then be asked to remember their final tally. It is important that they remember this number as it will help them to measure a hundred meters. Five pupils will then be asked to walk a hundred meters and see the difference between them once they have reached the number of steps for a hundred meters.

20 minutes Scales

The teacher shows the pupils a 4 x 4 meters square which has been constructed with the use of four meter ropes. Within this square the teacher will place different objects. The pupils, in pairs, will then make their own square and place each object within their own squares in exactly the same place as the teachers' original square. Once this task has been completed all the pupils go around seeing each others work.

20 minutes Secret picture

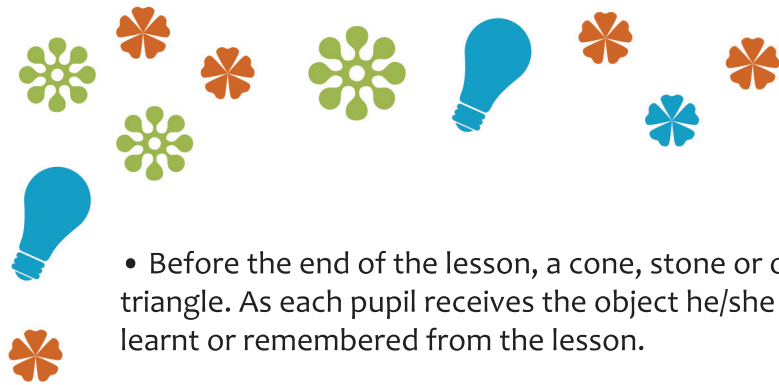
Pupils are asked to make pairs and each pair is asked to search for forest objects, sticks, stones, cones etc. Each member of the pair has to find exactly the same number of objects as his/her partner. If no natural objects are available you can use pictures or geometrical objects found in the classroom. Each pair of pupils are asked to sit back to back so that they can not see what their partner is doing, one of the pair is making the picture and telling his/her partner what he is doing. The partner is then making his/her own picture a copy of the original picture using the information that He/she is receiving. The picture has to be a mathematical picture, line, square, triangle etc.

Example: Pupil tells the partner, "On top I have 3 cones in a line, first a small cone then a bigger cone and then the biggest cone. I then have 3 sticks and all the sticks are pointing to the smallest cone". Once the picture has been completed, everyone stands and looks at each others work. The whole class discusses what was similar, what was different, what was difficult, what was easy to understand. How the instructions could be given more clearly.

20 minutes Final circle

The pupils are asked to stand and make a triangle shape. The pupils themselves agree who are the sides and who is at the points.

- When the triangle is ready the pupils will close their eyes and stand in their places. The pupils are asked to be silent for one minute. The pupils will try to measure themselves how long the minute is. When the pupil thinks that the minute is up he/she will raise his/her left hand and open his/her eyes. Once the minute is really up, the teacher will ask any remaining pupils with eyes closed to open them and then ask each pupil how close to the actual time their guess was.



- Before the end of the lesson, a cone, stone or other object is passed around the triangle. As each pupil receives the object he/she tells one thing that he/she has learnt or remembered from the lesson.



The things that you will need for this lesson.

- Enough small mats, one for each pupil.
- Enough ropes of one meter in length for each pupil.
- 4 meter ropes for the scale task.



Matematiikkaa ulkona luonnossa

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