



# Grade 1 Mathematics

## BrainBoosters

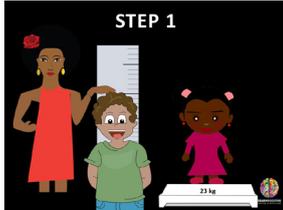
### Measurement



#### How children learn to measure

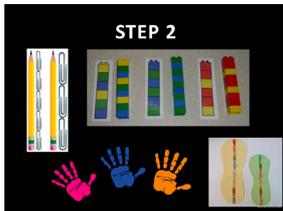
##### Step 1

Before learners engage in a measurement activity, it is important that they understand WHAT they want to measure. For example, they want to see how tall they are, or perhaps they want to know if they are heavier than their friends.



##### Step 2

The second thing that is important for them to know before they engage in the measurement activity is what UNIT they will use to measure, with for example, to measure how tall they are they will mark themselves against a wall and then they will fit their hands against the marked space and count how many hands will fit in the space. They will then count the number of hands that fit in the space.



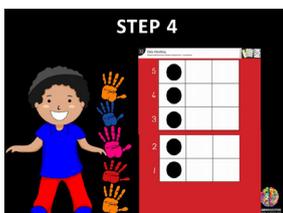
##### Step 3

Then they need to decide how exactly are they going to fit and count their hands, for example they will trace their hands on paper – about 15 hands- and cut it out. They will then place the first cut-out at the floor against the wall and will then paste the rest of the hands against the wall until they reach the place where the top of their head is marked against the wall.



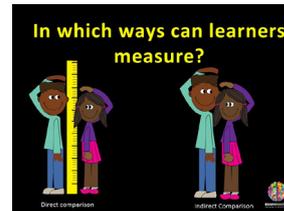
##### Step 4

The last thing they will do now, is to count how many hands 'tall' they are. Several other things can be measured and the lengths compared. This is where a graph chart can come in handy.



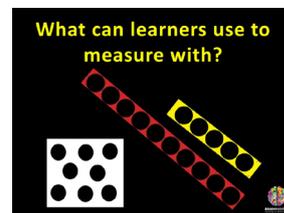
##### In which ways can learners measure?

Learners can either use direct comparison or indirect comparison to measure. Direct comparison is for example when learners weigh how heavy 2 different objects are by picking it up and saying which one is heavy or light or when 2 learners stand back to back to see which one of them is the tallest. Indirect comparison is when learners use other objects i.e. hands, strings etc. to compare for example their own length against those of a friend.



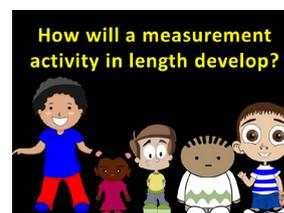
##### What can learners use to measure with?

Learners in the Foundation Phase first start to measure with non-standard units. That is, they use things like their hands, strings, paperclips etc. Once they are familiar with these units, they start to use standard units of measurements i.e. rulers. This is usually by the middle end of grade 3 but may slightly differ according to the context.



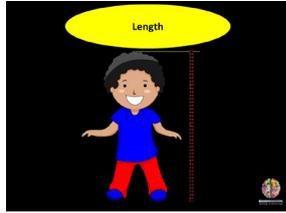
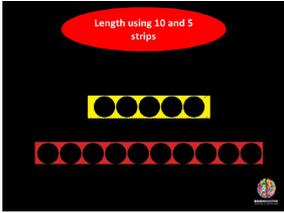
##### How will a measurement activity in length develop?

The teacher will pose a real-life problem to the learners, for example she may say that she wants to know who in each group of learners is the tallest boy or girl. She will then engage them in discussion of what their ideas are regarding who's the tallest. At this point learners might jump up excitedly to use direct comparison to measure their group members against one another. Then she will probe them for more ideas about how we they can measure their lengths. The learners will come up with ideas of their own for example to use a long string to measure their lengths and then compare it to those of the group members. Learners should be encouraged to use their own ideas and carry them out.

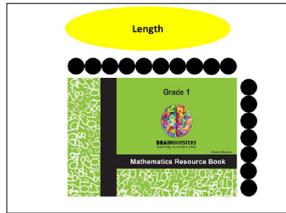
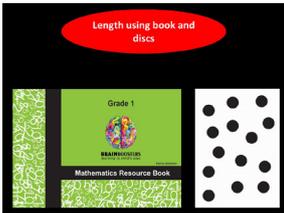


## Length

Activities concerning length can easily be done with any of the BB products for example to measure lengths with the BB counting strips. Learners can also measure their friends' lengths by making a mark against the wall where a friend stands and then count how many strips 'long' the friend is. This of course can be an introduction activity to data handling: who is the shortest or tallest learner in the class.

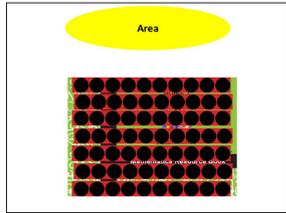
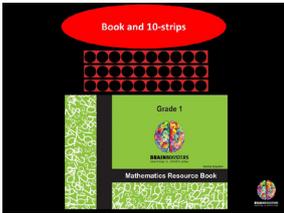


Which side of the book is the longest or shortest?



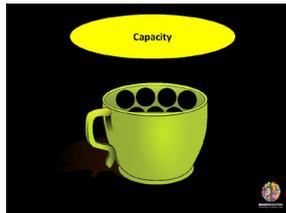
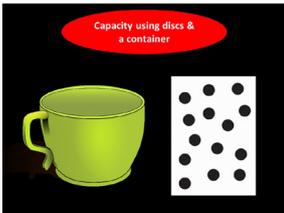
## Area

Although area is not specifically a branch of measurement that is explored in Grade 1, this almost flows directly from an activity of measuring the lengths of the sides of an object. To explore this branch of measurement, learners can cover the top of flat surfaces such as their desks to count how many objects, for example the counting strips supplied by BB, will it take to cover the whole flat surface.



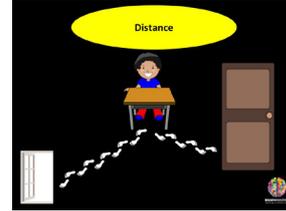
## Capacity

Capacity is linked to volume in Grade 1. For this purpose, learners need to understand how many objects will it take to fill up a certain container. The black discs supplied by BrainBoosters can be used to explore this concept.



## Distance

Learners come to Grade 1 with some knowledge of distance. However, this is not specifically addressed by the curriculum. Learners often confuse length and distance and we therefore recommend that distance is addressed by helping learners to discover that a certain object can be close to you or far from you. For example: Measure the distance between you and the table with footsteps; then the distance between the table and the door.



## Weight

Weight is another area of measurement that learners need to explore. This can easily be done with our BB products.

