

Give

A

Hand

A Game For Elementary Mathematical Exploration

Objective

Students will be able to perform mental mathematical operations using simple physical activity such as clapping hands.

Description:

Consider the following.

I clap my hands once and that signifies the number ten (10).

Ten is signified because I have ten fingers on my hand.

I snap my finger once and that signifies one (1).

One is signified because I only used one hand to snap a finger.

So now, if I clap my hands twice and snap my finger thrice, what is the number?

Two claps mean ten-twice, which is twenty (20).

Three snaps mean one-thrice, which is three (3).

The answer then is twenty plus three, which is twenty-three (23).

I have learned how to add "ten"s to "one"s.

Teaching elementary mathematics involves learning two components. One is the language of mathematics and the other is the actual process or computations.

There are two areas of confusion for elementary students. They understand the language but don't understand the language translating into computations and vice versa. The teacher has to observe both areas carefully.

How does one diagnose the deficient area in a student?

Let us consider the following example.

The teacher says, "I have a number in mind. I add five (5) to it. Now I get a new number. You can guess the number I have by observing my hands and the language of "Clap-Snap", ok? It is our language for now. You can also tell me the number by the same "Clap-Snap" language, ok?"

Now, the teacher claps twice and snaps finger thrice.

Some students will say twenty-eight (28), some will say Seventy-three (73) and some will say eighteen (18).

We can interpret the answers thus.

Those who say eighteen are perhaps more aware of the "ten"s operations. Others are confused.

What could be the reasons?

- Reason One:

Sometimes when children are exposed to something completely new, they are excited. They may make errors even if they "know" the right answer. The teacher should skillfully guide them towards the right answer without indicating that they have made a mistake. The knowledge has to be built through giving them many chances and opportunities to correct themselves from within.

- Reason Two:

Ones, who answer twenty-eight (28), know something about computations but have difficulty translating into language.

- Reason Three:

Perhaps the concept of one's position and ten's position is not clear. So, instead of twenty-eight (28) (adding five (5) to twenty-three (23) in the

one's position), they will say seventy-three (73) by adding five (5) to the ten's position for twenty-three (23) and coming up with seventy-three (73).

- Reason Four:

It also could be just the playful spirit of clapping and snapping and losing the idea behind the action.

So, how does a teacher continue to build on the interest of the student?

The teacher can skillfully add other simple physical actions to the language.

For example, one clap is ten, one snap is one, and now introduce: One tap on the head is a hundred (100).

The teacher can challenge the students in a subtle manner.

For example, the teacher taps his head twice and snaps a finger once.

What is the number?

Remember:

The teacher did not clap, means there are no tens, which in turn means that the ten's position holds a zero (0).

The correct answer is 201.

Now we have taught the students the importance of zero in whichever position, ten's or hundred's.

This game is even more effective when used in group environment by creating groups that may compete against each other.

Following are twenty objectives or outcomes for which the "Clap-Snap" or "Give a Hand" game may be used.

1: Add one to one.

2: Add one to ten.

3: Add ten to one.

4: Guess a number.

5: Hear a number and write it down.

6: Read a number and express in symbolic "Clap-Snap" language.

7: Make two groups. Have members of groups express numbers to each other in symbols and then write them down in ascending order.

8: Make two groups. Have members of groups express numbers to each other in symbols and then write them down in descending order.

9: Make two groups. Have members of groups express numbers to each other in symbols and then write only equal numbers from each group.

10: Make two groups. Have members of groups express numbers to each other in symbols and then write only numbers that are different from each group.

11: Make two groups. Have members of groups express numbers to each other in symbols and then write them down in order of equal numbers and then different numbers.

12: Use the previous activity but now have one group write numbers in ascending order and the other group write numbers in descending order.

13: Make three groups. One group specifies one number. Another group specifies another number. The third group will add the two numbers and express in symbolic language.

14: Make three groups. One group specifies one number. Another group specifies another number. The third group will multiply the two numbers and express in symbolic language.

15: Make two groups. One group will verbally say a number. The other group will write the number on board and then express in symbolic language (writing and expressing).

16: Teach the concept of zero by skillfully omitting certain symbolic operation to designate a number.

17: Teach the concept of zero through verbal communication: e.g. I have written the number three (3) on the board but that is three (3) more than my original number. What is my original number? The answer: Zero(0).

18: Teach the concept of multiplication tables. Make two groups. One group writes a number on the board with the multiplication sign, e.g.

X3. The other group specifies a number from two (2) to Nine (9) and multiplies by three (3) and constructs a multiplication table for Three (3).

19: It would be a nice challenge to adapt this game to work with fractions and whole number operations.

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