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July 2022

### Box 06, Folder 16 - "First Steps in Number" (E.M.S - ED-437 folder)

Edwin Mortimer Standing

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Search July 2<sup>nd</sup>

FIRST STEPS IN NUMBER ①

1 - 10

2 Pads  
notes

Different Ways of Regarding Arith<sup>c</sup>

" I cannot reckon - I have not the  
spirit of a taker -

Just Commercial

A Tool in business

So Too Drury & Co. To Academy Schools.

Three P's Tool subjects

No intrinsic interest

Learn about 6 or 7 when you

feel a need for it

— for something else

The idea eg shop: a shelf

Monks on Arith<sup>c</sup> Poles Apart

ditto Writing & Reading

The Human Mind is Essentially Math<sup>c</sup>

Blaise Pascal (Pensees)

Can often  
hear ---

" Those horrid sums! " — bad teaching

Academy School London one saw a graph.

① Play

② do Sums

In all my Experience

never known a child



Maha Bahulo Chudra  
I hale anti

(2)

① "Wah a hut - you will like it here" ② Two kinds of anti.

A Work of Genius ③ Students

If done nothing else.  
an immortal name. and  
That Spontaneous Creation

The Work Has Already Begun in Child

All children are interested in Cantrip

1 2 3 4 5 6 7 19 " "

Always with M. has focus on to  
Spontaneous Activity of the Intellect

The Plan of a Montessori School  
that makes it so?

The Precious Stream

This Spontaneous mental activity  
is limited

Varies a) In individuals (I.D.)

b) Different Ages

c) Different times

fatigue or sickness  
or - also - age

In to 4 1/2 Yr. limited but

Very precious

It is precious because it builds up to  
whole system of thought - will work -  
to Ego



The Precious Steam

See MS 1-3.



It is the Human Reason -

It is that part of us  
likest to God

abstraction + Death (3)  
no animals

So we must Preserve it

not waste or dissipate  
and use every bit -  
like a precious medal

not squander it - dissipate

① like a river lost in a desert

② Monks let it leak away

forget

→ ... Carrying Tom How 3 |||||  
PRACTICAL EXAMPLE

learning numbers different methods

1 cat 2 dogs 3 folders etc  
numberless others

The Inner Creation - Help it on

One Can: "Even to mistakes are significant"

Ⓐ

• — just adding one  
counting.

Each new no. lost - swallowed up -  
effaced as a footprint in to some  
by to waves

Ⓑ

•     •     •  
•     •     •  
Betha - but

Ⓐ The mind has to  
hold the words  
together

Ⓛ not permanent  
early wrecker



We want that "Said Grams"  
under our feet

(4)

Here it is. The Number Rod  
Segue

Remember To Previous Preparations  
in Sensual Materials

(a) 10, 10, 10.

(b) Long Stems - the same  
(only different)

As usual - To make the vague +  
Confused clear + orderly

Presentation

Segue in Italian

(1) Questo e uno  
due

(2) Give me.

(3) What is this?

Add another tre and quattro

Next day add more.

The Ciphers - Sandpaper

Segue Period.



## Two Things Essential

(4) (5)

- (a) Absolute Clarity
- (b) Certain meaning of sums  
How many feet Tom

## Defective Children

one, and one and one  
2 months. ---

## Advantages of No Rods

- 1) Cardinal and Ordinal
- 2) Remains to same "This is 7"
- 3) Size Counts  
Small imitations eg.  
Salt, unpoing, weight - to  
whole body comes into it  
"Real Sticks in Namda see illustration"
- 4) Very definite & clear - manipulate him
- 5) Lead on automatically to + and -  
An imitation to Research

$$9 + 1 = 10$$

$$8 + 2 = 10 \quad \text{etc}$$

$$5 + 5$$

So you are doing sums almost before  
you are aware of it



Leads on to new spheres

(6)

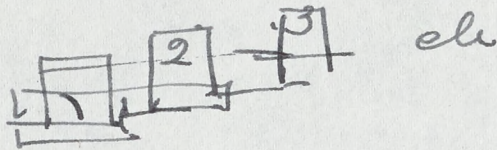
$$\text{eg } 7 + 6 = 13.$$

(above 10)

Rods and Ciphers

10

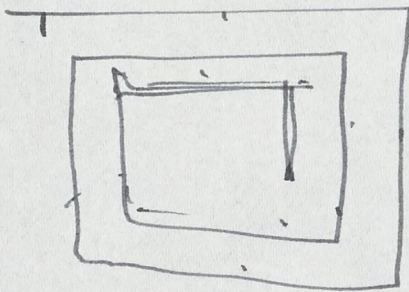
(a)



(b)

leave about 10 Room.

(c)



The Barcelona Incident.!



## THE FIRST STEPS CONTINUED

### INDIRECT PREPARATION

Tens in all the sensorial material

The Long Rods

### THE TWO REQUISITES NECESSARY

- 1) Absolute clarity in the concrete
- 2) A certain maturity of mind

Example of one not quite ready

"Tony , how many feet have you ? "

Always stopped 1 looked serious - and counted

" one two "

### REVISION ADVANTAGES OF THE NUMBER RODS

I- Clear , form unchanging - the units in the various numbers are held together by the wood of the rod .

This releases the mind completely to grapple with the idea of number

"The Precious Stream"

- 2) Ordinal as well as cardinal
- 3) The Size counts - the whole body comes into it
- 4) Very clear and definite .
- 5) Leads on automatically to the doing of sums .- and invitation to research .
- 6) Something very definite to attach the ciphers to

### THREE PERIOD WITH THE CIPHERS

not . . . . .

### THE SPINDLES

Number is a unity and multiplicity

Each number IS made up of separate units - it is not simply one thing ( the rod ) it IS a number of separate things also

This is made clear by the Spindles .



DEMONSTRATE THE SPINDLES

I-5 first - if very little .

The idea of Nought

This is a novelty !

"A little game ! " Here I 'll give you what should go in there ! "Put nothing in the tiny hand , which then puts it in the nought horse box .

The Control of error - in the number of the spindles .

If it is done right .

ODDS AND EVENS

Rather like the spindles - but more difficult .

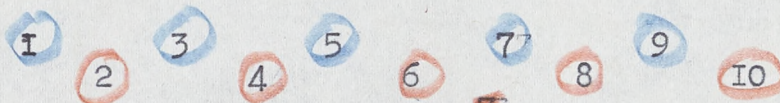
WHY ?

The ciphers are already there in their places .

In the Odds and Evens they have to be put out by the child himself .

TWO BY TWO "like a school crocodile - and some of them poor things have no one to walk with ."

Making the Odds and Evens stand out



Can put in little cards Odd even

Follow-up-Exercise

write out in a column the odd and even numbers putting the Odds in red - the evens in blue

This exercise comes in very useful later when we come to the multiplication Pattern Game .

e.g. all the multiples of two come out on the even numberzs .

Of three on alternately odd and even . Little observations which add interest .

THE NUMBER GAME

Play it with some of the students .

GOING BEYOND 10

10 + 1  
10 + 2 etc

Other + better ways - but .

1  
2  
3  
4  
5  
6

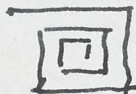


LEAD TO DISCOVERIES

E.G. How many do they come to altogether ?

The children put them all end to end in a long line .

Sometimes like this :-



A shorter way of counting them -- is this ---

Make the pattern

MONTESSORI's discovery

The patter equals

$$50 \text{ and } 5$$

$$\frac{10}{2} \text{ plus } \frac{10}{2}$$

$$\frac{n}{2} \text{ plus } \frac{n}{2}$$

Lets try again - say with 8

then with 6

Ah but those are even numbers lets try 9

comes to ~~fourteen~~ five nines

$$\frac{9^2}{2} \text{ plus } \frac{9}{2}$$

$$\frac{9^2}{2} + \frac{9}{2}$$

$$\frac{81}{2} + \frac{42}{2}$$

$$\frac{123}{2} = 61\frac{1}{2}$$

Have we discovered a law ?

Try any number --- e.g. 14

square of 14 is 196

Therefore

1 2 3 4 5 6 7 .....14



$$\frac{196}{2} + \frac{14}{2} = 98 + 7$$
$$= 105$$

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Hu 6. 7611

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