referring to the compass. Then I told them to try laying off on the circumference the radius and find how many times it would go around. They found that it went 6 times and then by dividing this in half we had $1/12$ of a circle, which with some help they told me would be $30^\circ$. It was then possible to measure the quarter of a circle in $30^\circ$ and to divide the $30^\circ$ into $15^\circ$. This work only one child was able to do. The rest lost interest before they got that far and seemed confused by the steps to be taken, although they have had the division of the circle into $45^\circ$ and $22 1/2^\circ$ in the winter quarter when they were studying Latitude and Longitude. None of them seemed enough interested in making the quadrant to warrant the continuation of the work, so the rest of the time has been spent in reading to them the story of Magellan crossing the Pacific from Butterworth. One period was spent in writing and one in reading.

Miss Runyon.

History (b).

I gave them the plan of the quadrant and they were able to take hold of it more intelligently and readily than the other group, but did not care to work it out. I did not ask them directly if they wanted to but simply drew my conclusions from the way in which they went to work upon it. It had served its purpose, I think, in bringing clearly before their minds the fact that the sun is at different altitudes at different seasons and that its maximum in this latitude is some degrees from the zenith, and the reasons for this.—The rest of the time has been spent with them about as with a. They have gone
farther in the story of Magellan and have come to the description of his death in the Philippine Islands, which was of course quite exciting.

Miss Runyon.

Number Work (a).

They have gone on with the measurement of their garden and the division of it into plots. They were given the problem of measuring what was left for IVa and b have their part. They were to measure what was left and divide it into 6 parts, 2 of which were to be large and 3 small. From a diagram on the board they concluded to divide it first into 1/2, then to divide the 1/2 into 2 halves again and the other 1/2 into 3rds. Then they went to the garden and measured with the yard ruler the distance and the leader appointed certain ones to divide these portions into halves and other children to re-divide the halves. They also measured off and divided the plot for the kindergarten.

Miss Bacon.

Number Work (b).

My object in the first lesson this week was the finding of the relations of the number series 4, 8, 12, 16, 20 & 24. I took a 6" block and named it 24 and then asked a child to show me a block by which the 24 block could be measured. After several measurements a 1" block was found. The name for this block was found out by the children themselves. I showed a 5" block and the name was given. One child was then asked to give the name for each block. The 5" block was called 20 the 4" 16, the 3" 12, 2" 8 and the 1" 4. The series of blocks was then arranged and the child was asked to close his
eyes and give the names of the blocks beginning at 4; another child gave the series down from 24 to 4 and another with his eyes closed was asked to think of only the 24 and tell me the name of successive numbers as I in imagination sawed a 4 off. Another child with eyes closed was asked to tell me the number of 4's left after successive sawing; another told how many 4's were in 24, 20, 16, 12, 8, 4; and another told with his eyes still closed what block represented six 4's, five 4's, four 4's, three 4's, two 4's and one 4. They were all then sent to the board to see how quickly they could write the series.

The relations of the numbers to each other was to be brought out in the next lesson. Cordelia worked by herself: I gave her the 12 series to work over 60. This is preparatory to giving her the problem of finding how many degrees the earth passes over in one hour of its revolution on its axis.

In the next lesson my object was to find the relations of the number series they had used the day before. The children were rather slow, several of the brighter ones being away for printing. I am anxious to interest the class in such a way that the members may find problems in their own environment which they will want to solve.

Mrs. Warfording.

Science (a).

They weighed the beans for the experiment they started last week and wrote their record of it. They also measured their garden and began digging it. Part of the measuring was done in the number time with Miss Bacon. In Science time they finished it and marked off the ground by means of a string.

Miss Hill.
Science (b).

They found that their pea seedlings in the nutrient solution had not used up the food stored in the seed and so the growth in the different fluids could not be compared. They finished their record of these experiments and spent an hour in the garden.

Miss Hill.

Art (a & b).

They worked in still life one day and spent another day in working on designs.

Miss Cashman.
History.

We have continued the story of the Pilgrims, taking up their life in Holland, reasons for leaving, the difficulties of getting a charter and finally the trials in getting off and crossing the Atlantic. I brought in the relief map of Europe and pointed out the route from England to Holland and from Leyden to Plymouth and then across the Atlantic on the other map. This was the first time the children had had the relief map of Europe since their own relief map when they were studying the Phoenicians and I was pleased to find that they remembered most of the countries they had had around the Mediterranean. They were much interested in Russia, which they saw for the first time and asked about the other countries, such as France, Norway, etc. Most of the facts concerning the Pilgrims, even those I had not expected them to know, seemed quite wellknown to several of the children, which they had gotten either from hearing other children talk or having them read to them at home; so that a good deal of the lesson is simply bringing out the points which I think ought to be emphasized, finding out how much they know about it and then discussing their importance and contrasting the coming of the Pilgrims with that of the people of Virginia. I have read to them from "Stories of the Old Bay State" descriptions of the trip and of the compact signed on board the "Mayflower". In the reading a good many new words come up and I get the children to give the meaning of them as far as possible. In one case James I. was called "an obstinate, conceited Scotchman". The children defined obstinate as "not wanting to do
a thing when everybody else did" and conceived "thinking you're the whole thing."

Two periods were spent in reading with Miss Brüère.

Miss Runyon.

Number Work.

Two periods have been spent in Number Work. The children who had finished their diagram of the multiplication table were being taught formal multiplication, as explained last week, taking simple numbers, like 12 and 13, to multiply together. I also spent a little time in getting them simply to say the multiplication tables, as the children have gotten so in the habit of adding, that they do that more readily than knowing the tables; for example, in telling what 3x4 is, rather than say two 4's are 8, three 4's are 12.

I have used their number period as a time when I could leave them to work by themselves occasionally. One time this week I did not appear at the time when the class assembled and ten minutes later the leader came and found me and said that he had gotten number work out and gotten the children started but wouldn't I please come up. I found the children all had their own work and were going ahead with it without any supervision.

Miss Runyon.

Science.

They spent their time in writing a record and discussing tree blossoms and wind pollination. Some of the children had brought in some box elder blossoms. The absence of the bright colors which would attract the insects and give that
method of pollination was commented upon. The significance of
the absence of color was regarded as showing the primitive
type of life in plants. We considered this an old form of
pollination and that pollination by insects was a later
development.

Miss Andrews.

Art Work.

Are continuing their clay figures.

Miss Cushman.
History (a).

They have been working at the campaign in northern New York. They took the relief map in their geographies and traced where the invasion would be most easily made from the north. They chose the Richelieu River, Lake Champlain, and Lape George. They said also that they might come down from Montreal and up the St. Lawrence to Lake Ontario, up the Oswego and then would have only a little way to cross to reach the Mohawk. They were told then of the feeling of friendship toward the British that existed among many people in the Mohawk Valley, due to the influence of Sir William Johnson, who was a loyal subject of the king, and were also told of his influence on the Iroquois and that through him many of them had sided with the English. Then they thought that since the British were having trouble with so many of their colonies, both in India and the West Indies, and needed many soldiers, they would be glad to get the help of the colonists in carrying on the war and would use the Tories in New York and the Indians, and would be likely to come down the Mohawk Valley to raise troops. The children were sent to their books to read up the campaign of Burgoyne down Lake Champlain and that of St. Leger down the Mohawk. The children of their own accord asked to make a map of the U.S. and to put into it the battle fields, and for this they thought they would need a relief map to show why the battles were fought there. They expected also to put down the forts.

A half hour was spent in electing a chairman and planning what parts of the country they would illustrate and how.
For the facts concerning Sir William Johnson I used "Conspiracy of Pontiac" by Parkman and for a large view of the war "The War of Independence" by Fiske has been used for reference by the teacher.

Miss Bacon.

History (b).

They have been reading in Froissart the story of the siege of Calais. On each day there have been several questions concerning the geography of places which they have had to look up at home. They spent two periods in working out the story orally and in writing it.

Miss Bacon.

Number (a).

Their number work has been a continuation of that of last week with more difficult problems and working out of long division.

Miss Hill.

Textiles (a).

One of the boys has been trying to bleach some linen. He made chloride and saw that it took the color out of some leaves. He let it act upon the linen but without much effect, and is now boiling the bleaching powder. The others have gone on with the dyes and have mounted samples of the different colors on cardboard with typewritten slips giving the dyes used.

Miss Hill.
Science (b).

They planted germinated wheat kernels in distilled water, lake water, nutrient solution, nutrient solution with iron. The children who had started the cubic measures finished them covering them with paraffine. I asked three of the children to find out how many cc. were in the cube measuring 15 cm. each way. They could tell how you would count up but were not able to carry out their idea on paper. Thus, one boy said, there would be 15 15's on the bottom and then 15 layers, but he began multiplying 15 by 30 because 30 is 2 15's.

Miss Hill.

German (b).

We have taken up some more names of the tools used in the shop and have reviewed the names given last week. The method of carrying on the lesson is indicated in the following, which is as nearly as I can remember the way in which the conversation with the class took place.

Grammatik, die Grammatiken.
Haben Sie alle Ihre Grammatiken gebracht? Wie, Theodor?
Haben Sie kein Buch gebracht? Dann bitte verlassen Sie die Klasse und kommen Sie nicht wieder zurück bis Sie das Buch herbringen. Und, Wilbur, haben Sie auch Ihr Buch vergessen? Dann kann Sie was Theodor gegan hat. Verlassen Sie auch die Klasse.
Group VII. April 27, 1900.


Miss Schibaby.

Art Work (a).

They are working on designs with Mrs. Brown for their textile work and in their second period continued their work in clay.

Miss Cushman.

(b).

One period was spent in working on design and another in continuing their work in still life.

Miss Cushman.

Number Work (b).

My object in this lesson was to make the children more ready in the use of the multiplication table and the division tables, and for this purpose I took the Speer blocks and let each child take a set for himself and gave each child the name of one block and let him find the names of the others; for example, Call the largest 30, what would you call the others? or Call the smallest 9, what would you call the others? As soon as a child had made up his series, I asked for it either with or without blocks, as the child himself chose. We gave not only the series but all possible relations. There was good interest in the class throughout the work. I
then attempted to make the children more ready in their use of numbers. I put six lines on the board, the largest one at the top, in a ratio. Each child was given the name of one and asked to find the name of the others. When the series was made out, the child was asked to give not only the names of the series, but also all the relations. If he gave the series 9 18 27 36 45 and 54, he was asked to close his eyes and tell how much was 4x9, then 18 divided by 2, then 36-18 and 54-36; then I asked what part of 54 18 is, etc. Some are very ready in getting the series, but slow in seeing the relations. There is a decided change in the class in their interest when they use the blocks. Some asked to use their own numbers and name them and were allowed to do so. No problems have been given in this group, as I felt that mental action was being impeded by their inability to deal with numbers. I am in hopes that their science, shop or cooking work may develop problems which will be brought to class by the pupils.

Mrs. Warferding.
History.

Same as VIIb.

Number Work.

In working the problems of last week, that is, the comparing of two wheels, the children found that they must know the circumference. I wanted them to see that they need not go to the trouble of comparing the circumferences, but could use the diameter, since you multiply the diameter of each wheel by $3 \frac{1}{7}$ and then divide the circumference of one wheel by another, they could get the same result by dividing the diameter of one by the diameter of the other wheel.

I wanted them also to learn the general principle that multiplying both dividend and divisor by the same number does not alter the quotient. To work out this principle, we used the Speer blocks, taking first the group $4 \times 3 \times 1$ and dividing it into inch cubes; then we took a block $3 \times 3 \times 2$ and divided it by $2 \times 2 \times 1$; they then saw that the blocks representing the dividend were in the ratio of $1:2$ and the blocks representing the divisor were in the same ratio, that is, the answer was the same. They then carried out the knowledge into larger numbers and then went back to the example of the wheel.

Miss Bacon.

Latin.

They are making charts of their verbs, taking both the active and passive voices of the verb "to be" in English. They took up the different tenses—the present, past not completed and future of the indicative mode. They worked out the present in the active and passive voices of the four Latin conjugations and put them on their charts.

Miss Schibbye.
Science.

The work this week has been a continuation of the work on clocks, especially the relation between the wheels, the question why one wheel goes faster than another, and how much faster, why the minute hand goes twelve times as fast as the hour hand and finally the use of the pendulum.

In this connection they were given pendulums of different weight but the same length and were told to find the rate of vibration of each. From this they learned that the weight does not affect the rate of vibration. They were then given the problem of finding by repeated trials the length of a "seconds pendulum". This they soon found to be a meter. They next learned that a pendulum a quarter of a meter long vibrated twice a second, and that one ninth of a meter long vibrated three times a second and thus discovered the law that the number of vibrations per second varies inversely as the square root of the length.

Mr. Gillet.

Art.

They have continued their studies in still life and have spent one period in working on designs.

Miss Cushman.
The children decided that the result of Hudson's explorations would be a desire on the part of the Dutch merchants for trade in America. At first the East India Co. was selected to carry on this trade, but after some discussion it was agreed that a new company would probably be formed. The teacher then told of the plans for a Dutch West India Co., of the political conditions which delayed their execution, and of the founding of the company at the end of the truce with Spain. The rights and duties of the company were outlined, and the coming of the Walloons described. We then read from Roosevelt's "New York" the account of Peter Minuit's administration. The children were asked in this connection whether they thought that the Dutch people would be as eager to come to America as the Pilgrims had been. They knew enough of the conditions of political and religious freedom in Holland to conclude that the Dutch would need special inducements to persuade them to leave comfortable homes for the New World. They were then told of the privileges and exemptions granted to the patroons in order to promote colonization. One pupil thought that it was not fair to grant so much power to the patroons but another replied that if the colonists voluntarily agreed to the terms proposed, there would be no injustice in that. Different plans were suggested for the relation between patroon and tenant. One was that the latter should pay back what it had cost to bring him over and then work for himself. It was easily shown, however, that under this plan the patroon would reap no benefit. The
children at last hit upon the plan of renting and were then given the terms on which the tenants could take up land. One child thought that if the colonists could sell their crops to the patroon, they would be the ones to make all the money. But when asked what the patroons would probably do with the produce from so large an estate, she saw that he would probably sell it again at a higher price. The feeling was strong among several of the children that the Dutch farmers would be better off at home than in the New World. As one expressed it, "They ought to be given more privileges in the new country and they had less." One boy, however, stood out stoutly on the other side, and illustrated by saying that if anybody would offer to pay his expenses to a new country——say, to the Paris Exposition——he would go "in a minute", on almost any terms. The others tried in vain to make him see or acknowledge that in this case there would be special privileges which he could not have at home.

Miss Hoblitt.

Number Work.

The object of the lesson was the finding of the rate per cent in small numbers. I intended also to ask the children to give problems involving finding percentage, but when they came together, Paul asked to have help on finding the ratio of 1 1/3 to 1 2/3. I told him to find two blocks, one of which would show 1 1/3 and the other 1 2/3. After some time he succeeded in finding the blocks and then easily arrived at the ratio. While he was at this work I asked the rest of the class to find blocks representing 4/3, 2/6, 5/6, 4/6, 7/8, 6/5, 3/2, 2/3, etc. of another block. There was
much confusion in their minds for a while, as each one was given his own problem to think out for himself. Before the period was over, each child became quite ready in finding the parts. I then changed, asking for blocks showing 20 25 33 1/3 66 2/3 75 and 80% of some other block. They had no trouble the next day in doing this and were interested throughout the whole period. Each one chose and measured his own blocks. Sometimes, indeed oftentimes, blocks of different denominations were shown me; for example, 4x4x2 would be measured by a 4x1x1 and the same result given as if the measuring were 4x4x1. In one instance a child brought me two blocks totally different in form but having the same length. This indicated a lack of mastery of the number principle. Things must have the same denomination to admit measurement.

In my next lesson the object was to work out the process of finding the rate per cent when the base and percentage were given. I gave them problems with small numbers involving the process. They were easily and accurately worked mentally by all except Evelyn and Dudley. The class asked to be allowed to give their own problems to each other. Such problems were given by them as: 150 is what per cent of 30? 75 is what per cent of 150? 15 is what per cent of 45? I then took the blocks, one a certain part of another, and asked for the per cent one of the other. Only two of the children were able to work it out at first, but the interest kept up throughout the process:

The next day I reviewed the formula bxr equals p to find whether the pupils would work as readily with per cent when not an equal part of a hundred. I gave them three problems simi-
lar to this: What is the percentage of $641 when the rate per cent is 28? Each of the problems was worded somewhat differently. For a fourth problem: Given the base 648 and the rate 63%, what will you find? Then I inserted this problem:
A man sold 125 sheep. He had 475 sheep at first. What per cent did he sell? intentionally making each part a short sentence. Several applied the right process after a little thought though all hesitated at first. Two children I gave the problem:
"A degree at the Equator is 69.49 miles. How many miles in the degree of a circle 50% the size of the equator circle?" The children worked this out at home without help and without consultation with each other.

Mrs. Warferding.

Science.

They started their seeds in a different solution, the same as Vb. had done and wrote a record of the experiment.

Miss Andrews.

Latin.

We have begun a second chart showing the past completed, the pluperfect and the future perfect tenses and a great deal of work has been done in finding forms by the use of the stem and pointing out the personal endings and in that kind of grammar work in connection with their stories.

Miss Schibsby.

Art.

They continued their color work in still life and spent period in drawing from a cast.

Miss Cushman.
History.

I have given them this week some definite questions to look up at home. They found that their general history by Fiske did not tell enough about any one thing to be interesting, so they have been using "The War of Independence" by the same writer. This week they have read the chapter called "Stamp Act and Revenue Laws". Some of the questions given them to look up at home have been: What were the causes up to this time which had brought the colonies into union? Why at this time was it hard for the colonies to unite? (This last was to bring out the idea of the constant quarrels over boundary disputes and it was only when driven by danger that they came together in union). They were given also the First Continental Congress to find out where it met, some of the important men that attended it and what was accomplished. They were to look up the committee of correspondence, how they were appointed, what their work was, the Boston Tea Party, the Boston Port Bill, the Regulating Acts and how each of the measures of Parliament was met by the Congress. One half hour was spent with Miss Pruère in looking over the work of the week in science and history and correcting it from the point of view of composition.

Miss Bacon.

Latin.

They have been translating from their books and for grammar work have put together the paradigms for the relative and demonstrative pronoun and have analyzed sentences both in Latin and in English. Miss Schibsby.
Science.

They found that many of their seeds had not germinated, so it was necessary to start others. They looked at the results of other children's experiments and examined the experiment which they had started last week by shutting off parts of a growing leaf from light by means of two pieces of cork, one above and one below the leaf. On taking off the cork, the chlorophyle had to some extent decreased. They made a test for the starch, first boiling the leaf in alcohol to take out the green color and then putting on iodine. They found there was no starch where the leaf had been covered by the cork and concluded that light was necessary for starch formation.

Miss Andrews.

Art.

Their art work has been a study of Greek architecture, partly by discussion and partly by looking at pictures. They took up the location of the pre-historic cities and found that they were located usually on the top of hills. We looked at the ground plans of palaces in the Mycenaean period and I read them a description of the various things found in graves of that time. Then I told them about Athens and we discussed the building of the Acropolis and its destruction during the Persian War and then the epoch of rebuilding. I found that the children did not know the myth of Athena, so told them that, and showed them pictures of the restoration of the Parthenon. This was a general talk leading up to the discussion of the Doric, Ionic and Corinthian orders.

Miss Cushman.
Number Work (last week's report).

At present I am simply showing them how to look up logarithms. I found that they did not understand the method of interpolating exactly, and so that had to be done again. The former time I gave it to them I gave it to them abstractly with the numbers, but this time I thought it best to use two lines, one line representing the distance between the two logarithms and the parallel line of a different length representing the distance between the two numbers; then when they had to find the logarithm of a number, it was a comparatively simple matter to find the position on that line for a given number and then they know they have to get the proportional distance of the other. The exactly same method will hold if they have given the reverse. Then I gave them several numbers to find the logarithm in which they would have to interpolate.

Miss Moore.
Social Occupations (a & b).

They spent all their time in the garden, getting the ground ready after it had been spaded and planting their seeds. This year each child has his own plot. Group III. planted grains and a few radishes.

Miss Andrews.

Cooking (a & b).

Cereals (Wheat)

In talking about wheat one of the children was asked what we would find in a grain on cutting it open. The answer was "Bubbles". From this it seemed apparent that a study of the parts of the grain was necessary and each child was asked to cut one in two and examine it. He thus found what he called "flour". The children then talked about flour and tried to think of some way by which the white part of the wheat could be separated from the dark, in order to make flour. With considerable help they were able to work out a plan for doing this. A mortar was used to crush the grains and the product sifted through cheese-cloth. The effect of moisture and of heat was tried on both the bran and the starch thus separated. The moisture revealed the third part--gluten. Owing to the time consumed by this work, the children were not able to prepare their luncheon as usual but had it done for them.

A portion of the period was spent in talking about the way in which wheat grows. The children were found to be familiar with the primitive method of sowing by hand and several of them went through the movements involved, while it was being
talked about. Some who had seen the work done by a machine told what they knew about it. The statement was made by one boy that the sowing by hand was still practised in some places but all decided that the machine would be quicker and probably better because the seed would be scattered more evenly. The method of harvesting the ripened grain was talked about and the means of separating the wheat and chaff. The uses for the straw, the chaff and the grain were discussed.

Number Work: The children balanced flaked corn and farina and found that 4 1/2 cups of the former balanced one of the latter. Flaked corn required 1 cup of water to 1 of cereal, farina therefore taking 4 1/2. For luncheon farina was cooked.

Miss Tough.

Hand Work (a & b).

They have been working on their mats and in the shops have completed standards for their mail boxes, and worked on larger boxes for collecting material on excursions. One child in making this box was asked whether the end pieces should be the same length as the bottom piece and after some thought decided that they would be 1" shorter since the wood used was 1/2" thick and this would enable the end piece to be fitted in.

Miss Jones.
The work has been approximately the same as that reported last year. They have begun playing out of doors that they are living in a semi-agricultural village. When they assigned their occupations they wanted the real things to work with, so we have been making dishes, weaving baskets and cooking in their open fire-places. They have begun trading with IVb. whose village is situated below theirs on the river.

Miss Camp.

Cooking (a).

Vegetables--Beets.

The same general plan was followed in the analysis of this vegetable that had been used with the carrot last week and the results were compared with those of both potato and carrot. The children were very much interested in the coloring matter which they found and were anxious to experiment with it but for this there was not time.

For luncheon beets were boiled and in slicing them the children spoke voluntarily of the difference in the hardness of the vegetables before and after cooking.

Number Work: Count the number of pupils in the class and two who are to be invited. The recipe for cocoa (which is to be made for the class) is for 1 person, how much of each part will be necessary for the class of 10? Cocoa--2 t.s. sugar 3 of cocoa, 2 t.sp. water, 1 cup milk. What will we have to pay for the milk at 2c a cup? One boy said that when you bought a glass of milk you paid 5c and he thought a cupful would be more than 2c. It was finally decided, however, that when a great many cupfuls were bought at one time, they could be cheaper. The figure 2 was made on the board to express the
price and one child said, "You have not put the cents". This led to the question of what other ways it could be expressed aside from writing the word cents after the figure. When asked to write what they thought, the only form the children used was "$2\frac{1}{2}$".

Instead of cooking, the children were taken on an excursion to the Washington Park Greenhouse and luncheon was taken out of doors, which, a number said, was much nicer than having it in the dining-room.

Miss Tough.

Cooking (b).

I had the children in turn whisper to me the different vegetables they had cooked and then wrote the names on the board and they whispered to me the name when they knew what it was until all had found out. As review we took each vegetable and I had them tell me what it was made of. After we had gone over the different kinds, we found that water and cellulose was found in each one and discussed the reasons and the condition of the vegetable without either of these. New work was the analysis of the beet. We made a list of all the things that had been found in vegetables and wrote them on the board and then the children were to see how many of these they could find in the beet. They examined the woody fibre and found whether it was tough or tender. Slices of it were cooked in water and tasted when they found the sweet juice. In cooking they noticed that the color came off in the water and that the beet turned white. They noticed the pink color changed to brown after cooking for some time. We are to find out how to preserve the color and the sweet juice in the next lesson.

Miss Harmer.
Hand Work (a & b).

They went on an excursion on Thursday to the park instead of doing their textile work. In their sewing period they have been finishing the baskets and working on their canvas mats. In the shop they completed their bows and arrows and tried them and also worked on a potter's wheel. IVb. have not brought the umbrella rods necessary for their bows, so spent the time in finishing the potter's wheel.

Miss Jones.
History (a & b).

The history for these groups has been practically the same this week, though the attitude of the children and their ability to suggest possibilities differed in each group. We have taken the story of Magellan to the time of his death in the Philippine Phillipines. This has been given partly by reading from "Magellan" by Putterworth and partly by telling the story and getting the children to talk. It was more exciting than anything they have had connected with his life. When asked what the effect would be on the native chief who had promised to belong to Spain, they thought that Magellan's death and the defeat of his men would react against the sailors and were told that this was true and that they had thought it best to leave. The children suggested the election of a new leader and, with some help, that the sailors would attempt to get a load of spices before returning to Spain. I then told of their visit to other islands and read to them accounts of the cinnamon, nutmeg and clove in its native state. Some of the children had never seen cinnamon except in the powdered form. Most of them knew what nutmegs were like. I then told them that when Magellan's men got back to the Cape de Verde Islands they found that they had lost a day in their reckoning. I asked the children to explain how this could have occurred. Some of them thought it was an error but most of Vb. were able to explain at once just how it would occur and did it graphically by going to the globe and turning it around, showing with their finger how the ship would be going in the opposite direction. In Ve. none of the children were able to bring
Group V.  May 4, 1900.

together the fact that the sailors had started west and gone all the way around, that the position of the sun at noon indicates the local time of the place and that places further west have earlier time. While I think they understand in a way how this could be, no one was able to make a statement as three or four in b. had done. The discussion on the last day brought out a curious difficulty on the part of Stephen. He wanted to know when the sailors went round the world, where the end of it was. He was asked if there was any end to a ball and said "No, he couldn't see how there could be any end and he didn't see how there couldn't be any". The class were at first inclined to make fun of his trouble but finding that the teacher took it seriously they entered into the attempt to help him out. I think his difficulty was a real one to him but am not sure whether he went away with any clearer ideas. Both groups have been copying a short story of Magellan written for them and are beginning to show much more interest in writing than they used to. The usual time has been spent in reading. In Va. now nearly all the children can read simple sentences, though Dorothy needs a good deal of help. In Vb. Thomas and William read with great difficulty, William not being able yet to make out the simplest words.

Miss Runyon.

Cooking.

As all the preparatory work for the making of gluten wafers had been done last week, the children were ready to begin the practical work immediately but it was found that two children who had been absent did not know what to do nor the reasons why certain processes were necessary, so
who did know were asked to explain the matter to them and this they seemed to consider a privilege.

Number Work: Rice was to be prepared for the class for luncheon, as the recipe given was for 1 person, the amount necessary for 7 had to be calculated. Rice—\(\frac{1}{4}\) cup rice, 8 times as much water and 3 saltspoons salt.

O.K. Miss Tough.

Cooking (b).

We reviewed the different ways of making batter light. They told me of cream of tartar and soda being used for quick breads. Each child tasted of the two powders to see if he remembered the taste. All succeeded except William. We mixed the two powders together in water to get the gas. Lindsay wanted to know what it would taste like and they tasted it and found it tasted of soda. This suggested securing a balance of the two in order to prevent the flavor from getting into the biscuit. They planned an experiment to find this balance. They thought that an equal portion of each would give it and tried it but the mixture gave a strong flavor of soda.

One child then suggested beginning with one and adding part of the other and tasting. So we began with one saltspoon of soda in a tablespoonful of water and then added a quarter of a saltspoon of cream of tartar at a time. William not being able to detect the difference in the flavor made this test rather uncertain. So they were shown the effect of cream of tartar and soda on litmus paper as giving a more accurate test. There was no red litmus paper, so we made some with vinegar. The children washed the litmus in clear water afterwards. This brought in very accurate work in measurement.
and careful observation in examining the change of color and involved also the keeping of records of the proportions used. Each child got a different result, which will be worked over in the next lesson. While waiting for their luncheon to cook, which was baked macaroni, prepared by one child, we talked about the source of cream of tartar and soda and its general preparation in factories. They realized the difficulty in getting a balance of the two powders and were told that certain factories prepared a mixture which could be used. We opened a can of baking powder and the children were told of the mixture of starch to keep it dry so that no gas would be lost by the two powders coming in contact. They were also told of the expense of the cream of tartar and of adulterations used. If possible we will work out a few simple tests for pure powders.

Miss Harper.

Textiles (a).

Those of the class who have not yet finished their looms are doing the work in sewing reported last week. The others are putting the warp threads on their looms preparatory to weaving. A great difference is noticed in the difficulty which some experience in comparison with others in doing this work.

Miss Tough.

Textiles (b).

In the development of the loom from the primitive form we took up the construction of the navajo but instead of showing the children how it was done they were given the different steps to work out. When they could not succeed in getting
something that could be used, they were told of the Indian method. The children showed great interest in trying to find the best way. We had one loom in construction and each child tried in turn to find a way of making different attachments for it. In the next lessons the looms which the children were making in the shop had not been finished and the children experimented in finding the best way to do pattern weaving. One child suggested weaving the solid color and then cutting it out in the form of a design and then filling in with another color; the class rejected this. Another suggested tying on the color where it would appear in the design: the class objected on account of the knots. Another suggested weaving in one color and leaving a space for the other color to be woven in afterwards: this was rejected because of the tediousness of fitting in the second color where the heddles could not be used. They were then permitted to examine a navajo blanket and see how the threads crossed and quickly discovered the proper method. In the next half hour they took turns in doing some pattern weaving and in overcoming little difficulties in making even cloth and keeping the selvage straight. The next hour was spent in the shop finishing the looms and in the following half hour the looms were brought in and the children from their previous work were able to warp them without help.

Miss Warmer 8½

Number (a).

They have gone on measuring beds for themselves and group VI. Some of the children chose to measure with the meter sticks instead of the yard. Robert was one of these; when
asked how he would change it into yards he said he would take his meter stick and measure the length by a yard stick and then take off 3" from each meter and see what part of a yard it would make. We preferred to use this in place of the yard stick. In working out the length of the meter stick, the children used No. 12 and 2 and 3x 12; then what part of 36 12 was and what part of 24 and what part of 36 24 is.

Miss Bacon.

Number Work (b).

Cordelia and Leonard added by 12's to somewhere over 300. Leonard has divided a circle of 360° into such parts that the earth in its rotation on its axis must pass over 15 degrees in one hour of time. Cordelia will take up the same problem later. I have been spending a good portion of the time of this class in having them form series by measuring, by units. If they are measuring by a unit called 4 their first measurement would give them one 4, the next two 4's or 8, the next three 4's or 12; but the interest is very far from being what it should be. I think I shall change and bring in problems relating to their science and cooking.

Mrs. Warferding.

Science (b).

They have spent their time in their garden and have planted a variety of things in their plots, such as peas, radishes, lettuce, peanuts and sugar-beets.

Miss Andrews.
History.

They have continued the history of the Plymouth Colony chiefly by having read to them from "Stories of the Old Bay State" and discussion. On Friday I read to them from "Young Puritans of Old Hadley" by Mary Wells Smith, which gives a good picture of child life in those days.

Miss Runyon.

Number Work.

Most of the children are still working on multiplication, putting the tables in the regular form. They have shown a desire to get them all in their notebooks and some are taking great pride in having the books neat. As they finish they are being taught formal multiplication. Some of the children show foresight in planning the work for their books; for example, Isabel wanted to put as many tables on one page as she could and carefully counted the number of lines on her page to see if there was room for tables under each other, thus making 4 tables on 1 page.

Miss Runyon.

Science.

Part of their time has been spent in preparing the soil and planting the seeds. Their in-door time has been spent on the experiment begun last week on the respiration of plants.

Miss Andrews.

Textiles.

They have continued the work reported last week.

O.K. Miss Tought
History (a)

They have spent most of their time this week on the relief map of the U.S. When asked if they wouldn't like to get a general idea of proportion before drawing, they said they wanted this one to be just right and so they have spent considerable time in measuring distances to get them exact. Besides this work they have spent an hour in reading from the "Boys of '76" of the battle of Bennington.

Miss Bacon.

History (b).

They have been reading from Froissart of the battle of Poitiers and have spent two half hours in writing the story of it.

Miss Bacon.

Number Work (b).

I have been trying to obtain facility in the use of numbers in multiplying and dividing them and their relations as evolved through measurements. The work has been carried on on the same lines as reported last week. One day I gave them a test to see what they could do with numbers; for example, 36 divided by 9 and 84 by 12 and 9x8. I drew four lines and asked if the second is called 30 what are the names of the rest; if the first is called 9 what are the others; if the first is 7 how many lines will you need to call the upper one 84? If the first line is 9, how many lines will you need to call the upper 72? There were six in the class: three answered the first question correctly, four the second, three the third, two the fourth, four the fifth, two the sixth and only one the last.

Mrs. Warferding.
History.

Same as VIIb.

Number Work.

They have been working on the pendulum and from experimentation have found that a pendulum 1 meter long has a swing of a second and that the rate for any vibration varies inversely as the square of the length; e.g. a pendulum 1/2 meter long vibrates 4 times as fast as one 1 meter long and a pendulum 1/3 meter long 9 times as fast. This required that the children have some knowledge of square root. So they wrote out the squares of the numbers up to 20. They formulated the rule: this was done by analyzing the number 15. In multiplying 15 by 15 to get the square we first multiplied the two 5's together giving us 25, then 10x5, which gave 50, then 5x10 which gave another 50, and then multiplying the two 10's the children saw that the product was made up of the square of the units and the square of the tens and twice the product of the unit by the 10's. They then applied this formula to other squares and I gave them such numbers as 85, 97 and 64 to find the squares of.

Miss Bacon.

Science.

One hour this week has been spent on a continuation of the work outlined last week.

Mr. Gillet.

Textiles.

They are continuing their navajo blankets made according to original designs.

Miss Harmer.
They are doing the same work in geological formation as was done last year, only the differences will be given. Part of the class have been carrying on experiments to illustrate the formation of sedimentary rock, such as shale, slate and sandstone, where the chief factors in the formation are considered from the mechanical side instead of the chemical. They take up the process from both ends; that is, taking water in which they have put clay and sand to see how the sediment of each is deposited in a miniature pond, then grinding up sand and sandstone to find that they can reduce these rocks mechanically to materials exactly like the materials from which they started. In working with this class once a week, the whole question of the relation of the experiment to the formation of water rocks is reviewed to be certain that they keep in mind the connection of the different experiments with the whole process, instead of waiting until the end of the series of experiments, as was done last year.

Miss Camp.

They found that the experiment which they had started a week ago needed some attention. Some of the pea seedlings had died, so we substituted new ones and started on a new experiment to discover whether the carbon dioxide was necessary for the formation of starch. They took two corn seedlings of about 3" growth and allowed one to grow in the open air under natural conditions. The other was put under a bell jar from which air was excluded. A saucer full of soda lime was placed under the jar. A glass tube was put through the
cork of the bell jar and \textit{auxiliary} the tube half filled with soda lime. The tube was to let in fresh air and the soda lime to absorb all carbon dioxide that the plant forms or which enters through the tube or was in the air enclosed, so that the plant is to grow without any carbon dioxide whatever. They wrote a record of this experiment.

\textit{Miss Andrews.}

\textbf{Number Work.}

I gave them a review of division of decimals, giving them such problems as \$25 divided by \$250. I used the dollar sign in order that they might see the necessity of reducing to lower denominations. Some of the pupils had much difficulty in dividing, because they did not multiply readily. In one example I happened to ask how many units of the next lower denomination were in the given number. Various answers were given and I was besought to tell who was right. I asked each one to bring the reason for his answer at our next recitation period and refused to tell who was right. When the answers were brought in, several were wrong and the children seemed to get easily confused, so I spent some time in letting them reduce wholes to 10\textit{ths} and 100\textit{ths}. I found it would be necessary to give them some review in decimal fractions.

\textit{Mrs. Warferding.}
History.

One of their periods was given up to house building; one day was a holiday; so their history work has been somewhat short. They have taken up the battles of Lexington, Concord and Ticonderoga. They have planned what campaigns would probably be carried on and have given reasons for these. Then each child chose what special topic he would like to carry on through the Revolution. One wanted to take up the life of Hamilton and see what he had done; two wished to take up the life of Washington; one wanted to follow Burgoyne's expedition in the north and another took the campaign in the south; one child wanted to work on Howe and Sir Henry Clinton. A half hour a week has been spent in the correction of papers and in some instruction in English with Miss Bruère.

Miss Bacon.

Number Work.

The time has been spent in trying to find out how to use the logarithm, especially in how to interpolate.

Miss Moore.

Sanitation.

Most of their time has been spent in work on the construction of their clubhouse. Their in-door work has been the weaving of panels for the screen to be used in the fireplace of the house.

Miss Harmer.

Shop Work.

While the children were studying light, they made in the shop some pinhole cameras. For these cameras we used pieces
of cigar boxes, taking the cover and the bottom after the paper had been taken off. The class in photography were told they would use a plate 3 1/2x3 1/2, so that the inside of our box must be a trifle larger than that. The focal length equalled then about 4". In constructing, the class figured that the top and bottom would be 1/4" larger than the side to allow for making a joint. A 1/2" hole was cut in the center of the front of the box and a piece of tin was secured over this hole. Through the tin a hole 1/300" in diameter was drilled. A piece of black paper such as films or dry plates are wrapped in, was used for covering this opening. The box was painted inside and out with a dead black paint to exclude any light that might try to work through the joints. The back of the camera had an extra piece just the size of the inside of the box. Five tacks with large heads were driven into this far enough so that the plate could be slipped under the heads. These were to keep the plates from slipping out and a small screw-eye was screwed in or a wire nail bent like the figure L but the screw-eye was the best. To hold the back of the box in place, small hooks were used or rubber bands, as there would be no danger of these from splitting the wood by screws or large nails. If the camera is loaded in the dark room, light must be kept from the pinhole by keeping the finger over it or a piece of black paper may be glued like a hinge to keep out the light. The children were encouraged to invent some method of doing this. Some form of a shutter is perhaps the best.

Mr. Ball.