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# THE ELEMENTARY SCHOOL TEACHER

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## NOTES ON THE WORK OF THE UNIVERSITY ELEMENTARY SCHOOL

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Principal

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It is the intention to present from time to time in the pages of the *Elementary School Teacher* a brief summary of work being done in the University Elementary School. It is not the intention to set this forth as representing perfection in any way, but merely for the purpose of giving the patrons and all other friends of the school some idea of what is being attempted. These notes, therefore, will appear mainly in the form of reports from pupils and teachers with but little or no argument, exposition, or comment. Discussions of the work, embodying the reasons therefor, will appear in more formal papers which the teachers will prepare as they may seem to be needed. The following report is on domestic science and textiles. A report of a "morning exercise" is also given, showing the way in which the whole school is kept in touch with the work of the different parts. The following notes are upon what has been done during the fall.

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### COOKING AND SCIENCE

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JENNIE SNOW  
Primary Grades

JOSEPHINE T. BERRY  
Grammar Grades

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Each group of children recites twice a week, except in the first grade. One period is for science and preparatory work, and the other for cooking. *First grade.*—The work is fruit juices, fruit, and grains. The children

have made grape juice and lemonade. A great deal of number work in measuring has been done, such as: How many fourths in one cup? How many halves? How many fourths in one-half?  $12 \times 2 = 24$ ;  $6 \times 2 = 12$ ; etc. The science work connected with this is being done in the grade room.

*Second grade.*—The work here is fruit, seeds, and different parts of the plant used for food. It is following closely along the science work. Considerable written work and number has come into the work. The children have made grape juice, jelly, and candied apples.

*Third grade.*—The science work in the room has been planned as a study of evaporation and of the comparative amount of water in different fruits. The cooking has followed along the same lines. The children have made jelly and plum butter, and are now making raisins. A fair amount of work has been done in science. We have tried to let the children answer some of their own questions. In watching their jelly boil, and noticing the vapor from it, one child asked: "Is there water in grape juice?" To answer it we let them distil some grape juice, and they found it contained water. Work with vegetables will follow.

*Fourth grade.*—The subject here is sugar—what it does, where it is found, and how manufactured. The children have canned pears and candied pineapple. They have found by experimenting that sugar will help fruit to keep its shape.

*Fifth grade.*—General purpose: to prepare dishes for a Thanksgiving luncheon.

1. Canned pumpkin for pies: Colonial method of preservation by drying; present method by canning.

Object of canning: (a) to kill germs by boiling; (b) to exclude germs by canning air-tight. We examined molds on the pumpkin after a piece had been kept for two weeks, and found them to be tree-like, or branching, in form. Later, when some of the canned pumpkin spoiled, we examined the white mold developed in the top of the can.

2. Cranberry marmalade: Cranberries growing wild in Massachusetts were early used by colonists. Marmalades are like jelly, except that they contain pulp as well as juice. The reason they keep is that germs do not thrive in such heavy mixtures or in large amounts of sugar.

3. Hasty pudding: Meal a starch food; proved by iodine test. Expansion of starch, when heated with moisture. Necessity of cooking starch foods a long time at boiling temperature. The same process carried on in the fire-place in colonial times, on swinging cranes, and in iron kettles. From this lesson children gathered admirably the idea of the difficulty of colonial cooking. In their history work they had milled the corn.

4. Corn bread: Principle of combination—(a) dry ingredients together; (b) wet ingredients together; (c) dry and wet mixed together. Use of soda and sour milk for lightening.

The chief object of these lessons has been to illustrate the colonial history work; so there is no logical development of science subject-matter.

*Sixth grade.*—General topic: fermentation.

1. Study of agents causing deterioration in foods, by means of (*a*) mold on fruits; (*b*) gas forming in spoiling pumpkin; (*c*) micro-organisms in colonies in gelatine cultures, collected from the air of the schoolroom and halls. Methods of checking the work of these organisms — of preservation; drying, salting, smoking, pickling, preserving, canning, etc.

2. Examples: Types (*a*) dried apples done in lower grades; (*b*) apples, cured or dried in salt, sugar, or spices; (*c*) preserved peaches; (*d*) canned pears; (*e*) canned tomatoes; (*f*) Spanish pickles.

3. Practical lessons:

*a*) Preserved peaches: (1) Method of work: peaches cooked in sauce-pans, then canned. (2) Preservation effected by cooking with sugar, and sealing. Boiling kills the inclosed germs. Sugar is a poor medium for bacteria. Sealing keeps other germs out.

*b*) Canned pears. Method of work: fruit cooked in cans, surrounded by boiling water. Object and principle the same as in preserved peaches.

*c*) Canned tomatoes. Method the same as in canned pears: preserving agents — heat, and acid of the tomatoes.

*d*) Spanish pickles. Preserving agents — vinegar and spices.

*e*) Experiment: Collect micro-organisms from air on gelatine plates. Examine the forms thus obtained as an introduction to the lesson to follow next week, on yeast.

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## TEXTILES

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LELIA PURDY

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*Fifth grade.*—The children suggested various things which they would like to make. Hand-bags; some to be made for their own use at school for carrying books, pencils, erasers, dust-cloths, thumb-tacks, etc.; others were thought of as Christmas presents. It was necessary to make a general study of materials in order to make an intelligent selection for the hand-bags. Linen, rather than cotton, wool, or silk, was decided upon as being more appropriate, since it is durable, may be obtained in a coarse weave, and is adaptable to the cross-stitch. It furnishes a variety of neutral shades in the natural color.

The first problem in designing the hand-bags was involved in determining length and width; then the relation of the wide space to the narrower space, and the adaptability of the individual design to these spaces, and to the hand-bag as a whole. The children were limited in choice only by the fact that no finished article was to measure *more* than eight inches in width.

A rough outline indicating general proportion of the hand-bag, and a large suggestion of the design showing whether it was to be an all-over pattern, a horizontal stripe or stripes, or a center design, was first drawn with charcoal

on rough manila paper. A piece of "try paper" was used to make several different units, using various combinations of the straight line and dot. As soon as a desirable unit was invented, each child repeated it in various ways to find the most effective arrangement. The children were limited to the straight line and dot as a motive in their patterns, but were free to use them as they chose in the design.

After each pupil had worked on the invention of a unit until he was for the time being satisfied, the group was shown other designs. These were studied with reference to spacing and grouping of the straight line and dot. These designs ranged from the simple straight-line-and-dot motive to the all-over pattern with a leaf, stem, or blossom motive, suitable for cross-stitch, embroidery, or stenciling. In textiles they could be applied to rugs, table-covers, curtains, pillow-covers, and articles of apparel. These designs were also studied for the purpose of getting a general idea of the possibilities of design, and of its application to certain material. The children were encouraged to study and criticise designs of wall paper, tapestries, rugs, etc., outside of the class.

After this general study and criticism of designs, a number of the class decided to improve their own designs by rearranging or adding to them. The children understood that they studied these designs, not to *copy*, but to enrich their ideas. One little girl said, when an all-over pattern of the holly leaf and berry as a motive was shown: "Oh, please, take it away quick! It is so pretty I'm afraid I'll copy it if I look at it any longer."

As soon as the designs in the straight line and dot were finished they transferred them to cross-section paper in dark and light, using a lead-pencil for convenience, since the unit of ten had to be changed in order to adapt it to the squares. When the design was shown in dark and light, it was necessary to select the colors for the cross-stitch pattern. The children tried various combinations with colored "school crayons" to find something pleasing. In making their choice of colors of floss they were advised to use only one and were limited to two colors.

After the designs were finished in color on the cross-section paper, a detailed outline of them was taken on rice paper to use as a guide in transferring them to the linen with a piece of carbon paper. In order to get the pattern straight with the material, it was necessary to make a "working edge" by raveling the warp threads. We then examined some pieces of weaving being done on the hand-loom and the Jacquard loom. Those who had been at the World's Fair talked of the weaving which they had seen from various countries. This led to the thought of how much of the textile industry forms a part of the social and commercial world.

While the patterns were in process of making the children worked at various times in committees, dyeing the floss they were to use for working the cross-stitch design into the linen. Before this work was done, the whole group

wrote the formula for dyeing, such as: indigo vat — water, 2 gallons; indigo, 1 ounce; zinc dust, 1 ounce; slacked lime, 1 ounce.

As the work progressed, we frequently needed to refer to operations in mathematics that involved linear and liquid measure, units of weight, and the use of fractions.

After the pupils had made an indigo vat and had done some dyeing in it, they wrote a letter to Miss Pierce describing the process to her. Some work in chemistry on the absorption of oxygen came in here. The misspelled words furnished the subject for a spelling lesson.

Some colored floss that was too bright was neutralized by boiling it with logwood chips after they had been soaked over night. The thread was colored yellow by boiling the white skeins in a solution of fustic chips which had been soaked over night, first boiling it an hour in an alum mordant.

The children are now applying their designs by working them on linen in the cross-stitch.

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### A MORNING EXERCISE

This exercise occupied the time allowed for the meeting on two mornings — two periods of about ten minutes each. After the reading and a song, the pupils stood in their places, in turn (the smaller pupils mounting chairs that they might be the better seen and more clearly heard), and each showed a specimen of what the class had prepared in their class work. Each then gave a simple description or explanation of what had been done.

Reading, first morning, "The Chocolate Cat," Eugene Field; second morning, "The Johnny Cake." The pupils then reported as follows:

*First grade.*—Lemonade: I had half a lemon. I got one-fourth cup of lemon juice from it. I put four tablespoons of sugar into the lemon juice and filled the cup up with water.

Grape juice: I put my grapes in a sauce-pan. I covered them over with water. I put them on the stove. I boiled them till the skins came off. Then I drained them and put four tablespoons of sugar to them and boiled them a little more. This is a bottle of the grape juice.

*Second grade.*—Grape jelly: First we washed the grapes. We picked them off the stems, and then we broke them open. We put them on to boil. We strained them and put just as much sugar as we had juice. Then we boiled them again until they were thick. We poured the juice into glasses and left it over night to get hard. Then we took it home. This (holding it up) is a glass of the jelly.

Taffy apples: We made taffy apples for our Hallowe'en party. We cut out the stems and put in sticks. We took three cups of sugar, one-third as much water, and some vinegar, and let it boil. We put the thermometer in until it went up to 290°; then we put the apples in. We took them out and

turned them around and around. Then we put them on an oiled plate to get hard.

*Third grade.*—When we boiled our grape jelly we saw the steam come off. We wondered if there was water in the grapes. We tried to find out. We took two flasks (flasks held up). We put grape juice into one and lighted the gas under it. At first the steam could not get all the way up the tube, but at last it did. It dropped into the other flask, and we had enough so each one could taste it. It tasted like soft water. We wanted to see if the boiled juice would jelly without sugar. We poured it into a glass, and this is it. (Turning glass upside down.)

Raisins: We wanted to make raisins. We took two kinds of grapes, and each child put one bunch in a lye dip. We just washed the other bunch. We wanted to see which would be raisins first. This is the way they look. They have been drying for two weeks. We wanted to see how much they would lose, so we weighed them. We are going to weigh them again when they are dry.

*Fourth grade.*—Canned pears: We wanted to can some pears for our luncheons. We wanted to know how to can them so they would stay whole. We experimented to find out. Some made a syrup and cooked some pears in it, and they stayed whole. Some cooked their pears in water and then added the sugar, and they broke up. We decided to make our syrup first and cook our pears in it. This is a can that William and I put up.

Candied pineapple: We candied some pineapple. We made a syrup of one quarter cup of sugar and two tablespoons of juice. We cooked the pineapple in it until it was soft and the syrup very thick. This (showing a piece) is a piece we made.

*Fifth grade.*—Corn bread: We were making preparations for a Thanksgiving dinner, as the Pilgrims used to have it. We know they had corn and not for a long time wheat, so we thought they probably had corn bread, and we made some. First we got our dry things together, and mixed them. They were: one-half cup of corn meal, one teaspoon of sugar, one-quarter teaspoon of soda, one saltspoon of salt. Then we mixed our wet things — one-third cup of sour milk, one tablespoon of beaten egg, one teaspoon of melted butter. Then we mixed all together, and put the dough in an oiled pan, and into the oven. We baked it fifteen or twenty minutes.

Cranberry jelly: We made cranberry jelly for our Thanksgiving dinner. The cranberries grew wild in Massachusetts, and the colonists had them with wild turkey. We took a cup of cranberries and picked them over, and washed them. Then we put them into a sauce-pan with half a cup of water. We let them boil until the shells broke open, and the juice came out. Then we put them through a strainer, and had half a cup of juice left. We put half a cup of sugar in the juice and cooked it a little while. Then we poured it in hot jelly glasses.

Canning pumpkin: We were canning some pumpkin for Thanksgiving pies. First we took all the soft part out of the pumpkin. Then we cut it up and peeled it. Then we cut the good part up into little pieces, and put them into a Mason jar, and just laid the cover on. Next we put the jar into a sauce-pan filled with cold water and let the water boil, so that it would kill all the microbes that would make the pumpkin spoil. I forgot to tell that we put cold water in the jar with the pumpkin, and the pumpkin cooked till it was soft. Then we screwed the cover on tight, and put the jars away. Some of them spoiled. We thought that we either had not boiled the pumpkin long enough, or else the microbes had got in after we boiled them.

*Sixth grade.*—An experiment: The sixth grade has been finding different ways of preserving food. We knew that we could hang things, like apples, up in small pieces, and that they would dry and then keep. The microbes will not grow on it then because there is no water; so it will not spoil. One day we used salt to draw the water out of green tomatoes. So we thought maybe we could draw the water out of fruit with it too. We put pieces of apple covered with salt, and sugar and spices too, away, and they kept. The apple was dry, and did not spoil.

Preserving peaches: We are still trying to find a way of putting up fruit so that no germs will be in it. Now I'm going to tell you how we preserved some peaches. First we pared them, and cut them in halves, and took the stones out. Then we got one-half cup of sugar and one-half cup of water, and boiled them together, stirring till the sugar was dissolved. Then we put the peaches in, and boiled them until they were soft. Then we boiled the jars, and filled them with peaches and syrup up to the top. Then we put on the rubber and screwed the top on tight. We used the sugar to keep the germs from growing. Germs do not like sugar. We boiled it to kill the germs that were in it. We boiled the jars to kill the germs in them. And we filled them to the top and screwed the covers on tight, so that no more could get in.

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## THANKSGIVING PROGRAM

### I

Music — "Come, Ye Thankful People, Come!"

Reading — Canticle of the Sun.

Music — "We Plough the Fields and Scatter."

Reading — Bible Selections.

Music — "I Will Praise Thee, O Lord!"

### II

Music — "Song of the Harvest".....College Class

Sentences — "The World is So Full," "The Milkweed Babies"...First Grade

Music — "O'er Our Fields".....Primary Grades

- Sentences — Autumn.....Second Grade
  - Reading — “When the Frost is on the Pumpkin”.....Fifth Grade
  - Music — “Thanksgiving Song”.....Seventh Grade
  - Reading — Autumn.....Miss Fleming
  - Music — “Autumn Gales”.....Upper Grades
  - Original Verses (see below) — “Autumn”.....Sixth Grade
- Open to the house for sentiments on autumn and Thanksgiving.
- Play — “Old English Harvest Scene”.....Third Grade
  - Music — “French Harvest Song”.....Fourth, Fifth, and Sixth Grades

In a French harvest play given at the Thanksgiving celebration, the fourth-grade children were to represent owls who would sing to the harvesters at night. They were given the French stanza with the suggestion that they set it to music. This they did, each child offering a musical setting for a phrase, until the song was completed. Such melodies as did not fit into the spirit and purpose of the song were rejected by the class. The melody as it stands is the work of six of the children.

LE HIBOU

Hou, hou, hou, hou, fait le hi-bou. Je ré-flé-chis, quand le monde parle

Quand il dort, je tra-vail-le, hou, hou, hou....



Play — "Corn-Husking".....Seventh Grade  
 (Bringing in the corn; reading, "Columbia's Emblem;" entrance of farmers; entrance of huskers; reading, "Corn Ballad;" dialogue, "Huskers;" rounds, "Three Blind Mice," "Scotland's Burning;" giving of prize; song, "Flow Gently, Sweet Afton;" dance, "Money Musk;" exit to supper.) Note: This play will appear in full in a later issue of this journal.

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AUTUMN PICTURED IN ORIGINAL VERSE BY PUPILS IN THE  
 SIXTH GRADE

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The autumn has come, the trees are bare;  
 The squirrel is getting of nuts his share;  
 The birds have already ceased their song,  
 And the wind is whistling the whole day long.

\* \* \* \*

The glorious autumn days have come;  
 The bees have stopped their busy hum;  
 The leaves are dropping from the trees,  
 And the grass is bending in the breeze,  
 The leaves are turning gold and red,  
 And dropping to their winter bed.  
 Each day is growing a little shorter,  
 And the farmers dare not loiter.  
 Each day is growing colder,  
 And the wind is growing bolder.

\* \* \* \*

The leaves are red and yellow,  
 The apples ripe and mellow;  
 The plants their seeds are scattering;  
 The nuts are downward pattering;  
 The robins south are flying,  
 And all the flowers are dying.

\* \* \* \*

The squirrels their nuts are storing,  
 The wind will soon be roaring,  
 While the crows are calling,  
 And the brown oak leaves are falling,  
 Heavy frosts are descending,  
 The autumn days are ending.