Let everyone have a share in the entertainment. With the interest and good-will of every child secured, and the sympathy and approval of the teacher assured, the closing exercises, whatever they may be, will be a positive pleasure to everyone concerned.

Examination Papers.

EDUCATION DEPARTMENT, ONTARIO—JUNE, 1891.

SECOND CLASS PROFESSIONAL EXAMINATION.

NORMAL SCHOOLS.

METHODS IN MATHEMATICS AND SCIENCE.

Examiner—J. A. McLellan, M.A., LL.D.

NOTE.—Candidates will take any three questions of section A, two of section B, and two of section C.

A.

1. (*a*) What principles underlie the use of Number-Pictures in teaching Arithmetic?
(*b*) Criticize : "No Number-Symbols for the first six months."

2. (*a*) Describe how you would teach the Multiplication Table.
(*b*) Show how far you would teach the reasons of the processes (1) in Subtraction, (2) in Multiplication.

3. State explicitly the steps to be taken in teaching Simple Division.

4. (*a*) Show how to develop first notions of fractions from the idea of division of a whole number into equal parts.
(*b*) Give a first lesson in "finding gain or loss per cent."

B.

5. Show how, by Mental Algebra, you would use the child's knowledge of the simple rules of Arithmetic to aid him in learning the corresponding rules of Arithmetical Algebra.

6. (*a*) Apart from increased expeditiousness in work, why is it worth while to teach the methods of detached co-efficients in Multiplication and Division?
(*b*) Teach $(x^4 - 2x^2 + 1) \times (x^4 - x^2 + 3)$ with detached co-efficients.

7. What points would you keep in view in teaching Prop. V. Bk. I., and by what steps would you prepare the pupil for it?

C.

8. Give an experimental lesson on the law "heat expands, and cold contracts," noting any exceptions, real or apparent.

9. (*a*) State the value of Botany as a means of mental discipline.
(*b*) Outline a lesson on any familiar plant.

10. (*a*) Give a detailed outline—with reasons fo the several steps—of a lesson in Hydrogen.
(*b*) Give a lesson illustrating that air has weight, also a lesson on the Siphon.

SCIENCE OF EDUCATION.

Examiner—D. A. Maxwell, B.A., LL.B., Ph.D.

NOTE.—Any four questions will constitute a full paper.

1. Investigate any three of the following maxims and show to what phase of the process of knowing they relate, and to what extent they are true :
(*a*) Sense-knowledge before thought-knowledge.
(*b*) Ideas before words.
(*c*) Learn to do by doing.
(*d*) Teach only what is understood.
(*e*) Processes before rules.

2. "Every thought and action links itself to some other thought or action."—*Fitch*.
(*a*) State the principles, or so-called laws, of *association of ideas*.
(*b*) Discuss modes of establishing *permanent associations*.

(*c*) What theories have been advanced to explain the *origin* of association of ideas?

3. "The powers of the intellect are clearly distinguishable by the order of their development and application."
(*a*) Define *faculty, intellect, development*.
(*b*) State the order of development of the mental powers.
(*c*) Discuss how to cultivate *memory*.

4. "Education must enable a youth to enjoy the liberty of self-decision."
(*a*) Define *will*.
(*b*) What are the components of an act of *will*?
(*c*) Point out the relation of *will* to intellectual activity.

5. "The process of reasoning is two-fold, *inductive* and *deductive*."
(*a*) Define and illustrate each process.
(*b*) Discuss the disciplinal value of each.
(*c*) What is the underlying axiom in each?

6. "A child's progress is much retarded if his preparatory training has been unskilful."
(*a*) What principles should be kept in view in infant teaching?
(*b*) Discuss the advantages of the Kindergarten, and point out some limitations to its usefulness.
(*c*) Discuss "Object Lessons."

SOUTH SIMCOE PROMOTION EXAMINATIONS.

MAY, 1892.

ENTRANCE TO FOURTH CLASS.

DRAWING.

Time, 1 hour. 25 marks a full paper.

1. Define straight line, circumference, parallel lines, concentric circles, triangle, radius of a circle, bisect.

2. Draw a square with sides 3 inches long ; inscribe a circle within it ; divide the circumference of the circle into six equal parts and join each point of division with the two nearest points. Name the figure you have thus formed.

3. Print in Capitals : the western hemisphere.
Values—10, 12, 6.

ARITHMETIC.

Time, 2 hours. 5 marks for neatness.

1. 24 men can build a wall in 18 days, but 8 of them are called away, in what time will the remainder of the men do the work.

2. One-fourth the sum of two numbers is 8,037, and one-seventh their difference is 98. Find the numbers.

3. A train running at the rate of 45 miles an hour passes a telegraph post every 20 seconds. How far apart are the posts placed?

4. Distinguish Measure, Common Measure and Greatest Common Measure, using for illustration the numbers 48, 16 and 32.

5. Divide $96.60 among A, B and C, so that A will get twice as much as B, and C as much A and B together.

6. Reduce 8,671,529 inches to miles, etc.

7. One-fourth of the pupils attending a school are in the first class, one-fifth of them in the second, one-tenth in the third, and the remaining 9 children in the fourth class. How many pupils are attending the school?
Values—12, 13, 15, 15, 15, 15, 15.

COMPOSITION.

Time, 2 hours. 5 marks for neatness.

1. Arrange the following words so as to make a good sentence : walked, barn, the, over, the, behind, the, man, hill.

2. What is a clause? Write separately the clauses in the following sentences :
(*a*) The neck of the bottle hangs downward, and the bird enters from below.
(*b*) If all the stories about the Indian sparrow are true, the inside of its nest is strangely adorned.
(*c*) The wise little weaver knows that the cun-

ning monkey will not trust his precious life to a frail branch that may break.

3. Rewrite the following sentences, correcting al errors in the use of capitals, and supply all necessary punctuation marks :
(*a*) the baltimore Oriole is a weaver and it makes its nest out of bark fine grass moss and wool
(*b*) and here in the midst of a storm the bird may sit in a swinging nest fearing no danger
(*c*) what is there to dread.

4. Write sentences containing the following words properly used : made, maid ; oar, o'er ; knew, new ; so, sew ; nose, knows ; pear, pair ; bear, bare ; write, right. (Eight sentences in all.)

5. What does each of the following abbreviations stand for : A.D., Que., U.S., B.C., Jno.; and write proper abbreviations for : January, September, Friday, Tuesday, Ontario, James, Esquire.

6. Write a letter of fifteen lines to a friend telling how you spent the 24th of May, and show how you would address the envelope.

Values—5, 16, 15, 32, 12, 20.

NATURAL SCIENCE IN PRIMARY GRADES.

BY MISS A. S. HENDRY, HAMILTON.

One day this spring one of my little boys brough h a frog to school in a little box.

We decided to study Froggie this month for our Natural Science work. We borrowed a pail and a deep tin dish. We half-filled the pail with water and the dish with earth, and Froggie lives in them alternately.

For our first lesson, as we were all just a *little* afraid of Froggie, we observed him in the pail, and many remarks were made about him, the children being allowed to express their opinions freely on whatever peculiarity of Froggie they observed. These points were afterwards woven into short sentences, as purely phonic as possible, by teacher, printed on separate slips of paper on a type-writer, and next morning distributed to the class and used as a reading lesson.

When the time came for our next lesson in Natural Science, we were more friendly with Froggie, and placed him on the table around which the section for the lesson gathered. We then studied him more particularly, each pupil being called on to state, in a complete sentence, what he observed about Froggie ; these sentences were gathered from this lesson—" A frog has black eyes with golden rings around them," " Froggie's mouth is very wide," " His hind feet are webbed," etc., and formed the reading lesson for next day. The fable of " The Boys and the Frogs," made phonic, was the next reading exercise.

By this time we were quite well acquainted with Froggie, and the most timid child in the class would touch him gently ; so we proceeded to model him in clay. This required most careful observation. We had to look again and again at what the children *will* call " his front feet and his back feet," to see how they are joined to his body, the length, number of joints, etc. We worked away very industriously for half an hour, and some very natural-looking frogs were the result.

After a second lesson in modelling we made a picture of Froggie. This required several attempts, but we are not easily discouraged.

At the end of a month, these children, who entered the Public school last September, can describe the frog orally, can read printed stories about him, and can write short descriptive stories of him of their own composition.

They have learned to love this little frog, and all other animals for his sake.

Their powers of observation have been wonderfully quickened, and they have found their school work a delight.

EX-PRESIDENT THOMAS HILL, of Harvard University, after years of observation and experience, gives as his conclusion that there is too much rigidity in the graded system ; that teachers make a mistake of beginning the training of the reason too early ; and that the schools confound the true order of development, and attempt to make the human plant bear seed before it has borne flowers, and almost before it has budded.